COLLEGE OF PHYSICIANS & SURGEONS OF ALBERTA

Council Meeting Agenda

May 29 and 30, 2025
CPSA Council Chambers
Edmonton

ATTENDEES

Council Members: Voting

- Nicole Cardinal, MD, CCFP, Chair
- Rhonda Laboucan, Member-at-Large
- Garnet Clark, MBA, CPA, CMA
- Logan Day
- Patrick Etokudo, M.Sc, FSCMP
  - Day 1 only / Regrets Day 2
- Nahla Gomaa, MBBCH, MSc, MD PhD, SFHEA, FAcadMEd
- Hon. Robert Merrifield, PC
- Oluseyi Oladele, MD, CCFP, FCFP
- Laurie Steinbach, BSW, BEd
- Ian Walker, MD, MA
- Pan Zhang, MBA, BSc, BA

Council Members: Non-Voting

- Todd Anderson, MD, FRCP(C), FCAHS, Dean Cumming School of Medicine
- Tamara Yee, MD, PhD, Past-President, PARA
  - Virtual Day 1 & Day 2

CPSA Executive Leadership Team

- Scott McLeod, MD, CCFP, FCFP, Registrar
- Dawn Hartfield, BScMed, MPH, MD, FRCPC, Deputy Registrar & Hearings Director
- Jeremy Beach, MBBS, MD, FRCPC, Assistant Registrar, Accreditation
- Michael Caffaro, MD, CCFP FCFP, Assistant Registrar, Continuing Competence
- Gordon Giddings, MD MBA FCFP, Assistant Registrar, Professional Conduct & Complaints Director
- Ed Jess, BA, Chief Innovation Officer
- Sayra Khandekar, MD, MD MBA FRCPC FACC, Assistant Registrar, Registration
- Michael Neth, PEng, Chief of Staff
- Tracy Simons, CPA, CA, Chief Financial Officer

CPSA/Council Support Team

- Jason MacDonald, Director, Office of the Registrar
- Kerry-Ann McPherson, MSc, CAPM, Program Manager, Governance
- Kimberley Murphy, ACEA, Senior Executive Assistant, Recording Secretary

CPSA Staff Presenters

- Phong Van, Director, Continuing Competence
- Sarah Stelmack, Director, Corporate Services
- Rachael Gronberg, Communications Advisor

External Guests/Attendees

- Dr. Colleen Forestier, Virtual only

Regrets

- Richard Buckley, MD, FRCS
- Daisy Fung, BMSc, MD, CCFP, Vice Chair
- Maryana Kravtsenyuk, MD, MSc, FRCPC
- Brenda Hemmelgarn, MD, PhD, Dean FoMD
- Jenna Salem, Student Observer

Public Attendees

- CPSA staff and members of the public are invited to attend the meeting virtually.

Resources for Council Members:

- **Council Culture Agreement**
- **CPSA Strategic Plan**
- **CPSA Council Reference Manual**
- **Principles to Guide Council Interactions**
- **Council Conflict of Interest Policy**
- **In-camera Sessions Policy**
- **Social Media Guidelines**
- **Council Member Code of Conduct Policy**
- **Councillor's Oath**
- **CPSA Values**
- **Commonly used Acronyms**
- **Council Decisions Terminology**

cpsa
COLLEGE OF PHYSICIANS & SURGEONS OF ALBERTA

Council Meeting Agenda

May 29 and 30, 2025
CPSA Council Chambers
Edmonton

Thursday, May 29, at CPSA Council Chambers

Time		Topic		Presenters
0730		**Breakfast**		All
0815	**IC1**	**In-camera Session** **(Attendees: Council, Executive Leadership Team, CPSA/Council Support Team)**		Council Chair
		IC1.1	Call to Order, Introductions & Meeting Logistics	Council Chair
		IC1.2	Reflection on the Council Culture Agreement & Coin	
		IC1.3	Adoption of In-camera agenda and approval of In-camera Minutes	
			IC1.3.1 Adoption of In-camera Agenda	
			IC1.3.2 Approval of In-camera Minutes from March meeting	
			IC1.3.3 Approval of In-camera Minutes from Special Council Meeting April 1, 2025	
			IC1.3.4 Council Meeting Feedback - March 2025 (for discussion)	
0840		**Adjournment of In-camera session**		
0840	**1.0**	**Call to Order of Public Session**		Council Chair
		1.1	Chair Opening Remarks & Introductions	
		1.2	Traditional Territory Acknowledgement	Patrick Etokudo
		1.3	Conflict of Interest Declaration (Real, Potential or Perceived)	
0850	**2.0**	**Adoption of Public Agenda and Approval of Minutes**		Council Chair
		2.1	Adoption of Agenda	
		2.2	Approval of Minutes 2.2.1 March 2025 CPSA Council Public Meeting Minutes 2.2.2 Decisions from In-camera Meeting (March 2025) 2.2.3 Decisions from In-camera Meeting (April 2025)	

0900	**3.0**	**Consent Agenda** *The Consent Agenda has been prepared by the Executive Committee using the consent agenda checklist and contains items that are proposed for unanimous consent and without debate. However, Council members may seek clarification or ask questions.* ***Consent Agenda Process:** To move a consent agenda item to the regular agenda, identify the agenda number and title to be moved via:* (1) *An email to the Council Chair OR* (2) *A point of information to the Council Chair prior to the adoption of the agenda on the day of the Council meeting.*		Council Chair
		3.1	Executive Committee Meeting Meeting Summary Report (for information)	
		3.2	Governance Committee 3.2.1 Meeting Summary Report (for information) 3.2.2 Committee Appointments (for approval) 3.2.3 Council Policies (for approval) 3.2.3.1 Registration Policies 3.2.3.2 Executive Elections 3.2.3.3 Council Policy Statement and Guidance on Prevention of Spread of COVID-19 in CPSA's Workplace 3.2.3.4 Delegation of Authority to Appoint Inspectors	
		3.3	Finance and Audit Committee Meeting Summary Report (for information)	
		3.4	Ad Hoc Bylaw Review Project Committee Update	
	4.0	**Executive Reports**		
0910		4.1	Chair's Report (for information/discussion)	Nicole Cardinal, Council Chair
0920		4.2	Registrar's Report (for information/discussion)	Scott McLeod CEO/Registrar
1010		**BREAK**		
	5.0	**Department Reports**		
1020		5.1	Registration Department Update (For information)	Sayra Khandekar Assistant Registrar, Registration

1140		5.2	Office of the Registrar CPSA G4 Health Partnership (for approval)	Michael Neth Chief of Staff
1215			**LUNCH**	
1300		5.3	Accreditation Diagnostic Imaging Accreditation Standards – Teleradiology Ultrasound (for approval)	Jeremy Beach Assistant Registrar, Accreditation
	6.0	**Council Committee Reports**		
1330		6.1	Governance Committee 6.1.1 Committee Annual Reports (for approval) 6.1.2 Council Retreat 2026 (for approval) 6.1.3 Bylaw Revisions – Accreditation (for approval)	Laurie Steinbach Committee Co-Chair
1415			**BREAK**	
1430		6.2	Finance and Audit Committee 6.2.1 2024 Audited Financial Statements (for approval) 6.2.2 Waiving fees for physicians completing their residency and fellowship in Alberta (for approval) 6.2.3 Change the timing of the annual renewal for physicians, physician assistants and professional corporations (for approval)	Patrick Etokudo Committee Chair
1510		6.3	Executive Committee Council Cover Report (for approval)	Nicole Cardinal Committee Chair
1530			**Adjournment of Public Session**	
			BREAK/Transition	
1545	**IC2**	**In-camera Session**		Council Chair
			IC2.1 Council Meet & Greet with Dr. Colleen Forestier **(Attendees: Council, Registrar & CEO, Deputy Registrar, Chief of Staff, Council Support Team)**	Nicole Cardinal Committee Chair
			IC2.2 Council Executive Elections – Council Chair **(Attendees: Council, Registrar & CEO, Deputy Registrar, Chief of Staff, Council Support Team)**	Laurie Steinbach Governance Committee Chair

	IC2.3 Medical Council of Canada (MCC) – Multi-source Feedback **(Attendees: Council, Registrar & CEO, Deputy Registrar, Chief of Staff, Chief Financial Officer, Chief Information Officer, Director Continuing Competence, Director Corporate Services, Recording Secretary)**	Scott McLeod Registrar & CEO
	IC2.4 In-camera portion for Council only	Nicole Cardinal Committee Chair
1715	**Adjournment of In-camera session**	

Friday, May 30, 2025, CPSA Council Chambers

Time		Topic		Presenters
0745		**Breakfast**		All
0815	**1.0**	**Call to Order of Public Session**		Council Chair
		1.1	Chair Opening Remarks & Introductions	
		1.2	Traditional Territory Acknowledgement	Todd Anderson
	Continuation from Day 1 Public Session			
	6.0	**Council Committee Reports –** (Continuation from Day 1)		
0825		6.4	Anti-Racism Anti-Discrimination Action Advisory Committee (ARADAAC) Meeting Summary Report (for information)	Michael Neth Chief of Staff Jason MacDonald Director, Office of the Registrar
0845		6.5	Indigenous Advisory Circle (CIRCLE) Meeting Summary Report (for information)	Nicole Cardinal Committee Co-Chair
0855		6.6	Ad-Hoc Registrar & CEO Selection Committee Closing Report (for approval)	Nicole Cardinal Committee Chair
	7.0	**Standing Items**		
0900		7.1	Key Performance Indicators (KPI) Dashboard (for information)	Ed Jess Chief Innovation Officer

	8.0	**Business Arising**		
0930		8.1	CPSA Annual Report 2024 (for approval)	Rachael Gronberg Communications Advisor
0945		**Adjournment of Public Session**		
		BREAK/Transition		
		In-camera Meeting Session		
1000	**IC3**	**Call to Order of In-camera session** **(Attendees: Council, Registrar & CEO, Deputy Registrar, Chief of Staff, Council Support Team)**		Council Chair
1005		**IC3.1** Amendment of the Physicians, Surgeons, Osteopaths and Physician Assistants Profession Regulation **(Attendees: Council, Registrar & CEO, Deputy Registrar, Chief of Staff, Council Support Team)**		Michael Neth Chief of Staff
1020		**Council Learning Session** • Due Diligence in Non-Expert Topics Part 2 *Panel discussion and co-development of resource exploring due diligence in decision making outside of Council members' typical expertise.* • Acknowledging Peoples and Lands *CPSA support and resources for delivering acknowledgements of peoples and lands.*		
1150	**IC4**	In-camera meeting session for Council only		
1200		**Adjournment**		

COLLEGE OF PHYSICIANS & SURGEONS OF ALBERTA

Council Meeting Minutes (Public)

March 6 and 7, 2025
Fort Edmonton Park & CPSA Council Chambers
Edmonton

ATTENDEES

Council Members: Voting:

- Nicole Cardinal, MD, CCFP, Chair
- Daisy Fung, BMSc, MD, CCFP, Vice Chair
- Richard Buckley, MD, FRCS
- Garnet Clark, MBA, CPA, CMA
- Logan Day, BA
- Patrick Etokudo, M.Sc, FSCMP
- Nahla Gomaa, MBBCH, MSc, MD PhD, SFHEA, FAcadMEd
- Hon. Robert Merrifield, PC
- Oluseyi Oladele, MD, CCFP, FCFP - (Virtual Day 1 / Regrets Day 2)
- Laurie Steinbach, BSW, BEd - (In-person Day 1 / Virtual Day 2)
- Ian Walker, MD, MA - (Virtual Day 1 & Day 2)
- Pan Zhang, MBA, BSc, BA

Council Members: Non-Voting:

- Todd Anderson, MD, FRCP(C), FCAHS, Dean Cumming School of Medicine
- Tamara Yee, MD, PhD, Past-President, PARA

CPSA Executive Leadership Team

- Scott McLeod, MD, CCFP, FCFP, Registrar
- Dawn Hartfield, BScMed, MPH, MD, FRCPC, Deputy Registrar & Hearings Director
- Jeremy Beach, MBBS, MD, FRCPC, Assistant Registrar, Accreditation
- Michael Caffaro, MD, CCFP FCFP, Assistant Registrar, Continuing Competence
- Gordon Giddings, MD MBA FCFP, Assistant Registrar, Professional Conduct & Complaints Director (Regrets Day 2)
- Ed Jess, BA, Chief Innovation Officer
- Sayra Khandekar, MD, MD MBA FRCPC FACC, Assistant Registrar, Registration
- Michael Neth, PEng, Chief of Staff
- Tracy Simons, CPA, CA, Chief Financial Officer

CPSA/Council Support Team

- Jason MacDonald, B.Sc, B.EH, CPHI(C), CIC Director, Office of the Registrar
- Kerry-Ann McPherson, MSc, CAPM, Program Manager, Governance
- Kimberley Murphy, Senior Executive Assistant, Recording Secretary
- Nazrina Umarji, B.Ed, JD, Director, Legal Services & General Counsel
- Sondra Mackenzie-Plovie, Senior Advisor, Community Engagement
- Nicole Bertram, Communications Advisor
- Sameha Dahir, Coordinator, Social Media & Digital Experience

CPSA Staff Presenters

- Rachael Gronberg, Communications Advisor (Day 2)
- Agatha McKechnie, Communications Advisor (Day 2)

External Attendees

- Martha Cardinal, Saddle Lake
- Elder Louis Lapatack, Saddle Lake
- Elder Rick Lightning, Ermineskin Cree Nation

Public Attendees

- CPSA staff and members of the public are invited to attend the meeting virtually

Regrets

- Brenda Hemmelgarn, MD, PhD, Dean FoMD
- Rhonda Laboucan, Member-at-Large
- Maryana Kravtsenyuk, MD, MSc, FRCPC
- Jenna Salem, Student Observer

Resources for Council Members:

- **Council Culture Agreement**
- **CPSA Strategic Plan**
- **CPSA Council Reference Manual**
- **Principles to Guide Council Interactions**
- **Council Conflict of Interest Policy**
- **In-Camera Sessions Policy**
- **Social Media Guidelines**
- **Council Member Code of Conduct Policy**
- **Councillor's Oath**
- **CPSA Values**
- **Commonly used Acronyms**
- **Council Decisions Terminology**

Thursday, March 6, at Fort Edmonton Park, Edmonton

IC1 In-camera Session

Council met in-camera with the Executive Leadership Team and the CPSA/Council Support team.

A Special Induction Ceremony for the new Council Chair, Dr. Nicole Cardinal, was held.

1.0 Call to Order of Public Session

1.1 Chair Opening Remarks & Introductions

Nicole Cardinal welcomed everyone to the meeting and called the meeting to order at 1104.

1.2 Traditional Territory Acknowledgement

At each Council meeting, individuals are invited to share a personalized message to recognize and respect Indigenous Peoples who lived and continue to live on this territory, and for the land to which we are all connected. This type of acknowledgement is part of CPSA's ongoing efforts to develop healthy and reciprocal relations with Alberta's Indigenous communities—a key element of reconciliation, a process we are committed to.

Tamara Yee provided the land acknowledgement.

1.3 Conflict of Interest Declaration (Real, Potential or Perceived)

No additional conflicts were declared at this time.

2.0 Adoption of Agenda and Approval of Minutes

2.1 Adoption of Agenda

MOTION C04-25

Moved by Patrick Etokudo and seconded by Garnet Clark that the agenda be adopted. Carried.

2.2 Approval of Minutes

2.2.1 December 5 and 6, 2024 CPSA Council Meeting Minutes

2.2.2 Decisions from In-Camera Meeting (December 2024)

MOTION C05-25

Moved by Laurie Steinbach and seconded by Richard Buckley that the minutes of the meeting on December 5 and 6, 2024, and decisions from the in-camera session in December be approved. Carried.

3.0 Consent Agenda

The Consent Agenda has been prepared by the Executive Committee using the consent agenda checklist and contains items that are proposed for unanimous consent and without debate. However, Council members may seek clarification or ask questions.

Consent Agenda Process: *To move a consent agenda item to the regular agenda, identify the agenda number and title to be moved via:*

(1) *An email to the Council Chair OR*

(2) *A point of information to the Council Chair prior to the adoption of the agenda on the day of the Council meeting.*

3.1	Executive Committee - Meeting Summary Report (for information)
3.2	Governance Committee 3.2.1 Meeting Summary Report (for information) 3.2.2 Council Learning Report for 2024 (for information) 3.2.3 Committee Appointments (for approval) 3.2.4 Council Resource – Role of the Council Member (for approval) 3.2.5 Council Resource – Role of the Committee Chair (for approval)
3.3	Finance and Audit Committee - Meeting Summary Report (for information)
3.4	2025 Standards of Practice Review Timeline (for information)
3.5	Accreditation – Diagnostic Imaging Accreditation Standards: Teleradiology Revision Update (for information)
3.6	Accreditation – Diagnostic Imaging Accreditation Standards: Medical Director Revision (for approval)

MOTION C06-25

Moved by Garnet Clark and seconded Laurie Steinbach that the Consent Agenda be approved. Carried.

In passing the above motion, the following items are approved:

- Governance Committee – Committee Appointments
- Governance Committee – Council Resource – Role of the Council Member
- Governance Committee – Council Resource – Role of the Committee Chair
- Accreditation – Diagnostic Imaging Accreditation Standards: Medical Director Revision

The following items were received as information:

- Executive Committee – Meeting Summary Report
- Governance Committee – Meeting Summary Report
- Governance Committee – Council Learning Report for 2024
- Finance and Audit Committee – Meeting Summary Report

- 2025 Standards of Practice Review Timeline
- Accreditation – Diagnostic Imaging Accreditation Standards: Teleradiology Revision Update

4.0 Executive Reports

4.1 Chair's Report (for information/discussion)

Nicole Cardinal provided a short report on recent activities and her hopes for the coming year in her new role as Chair. She thanked CPSA staff for their preparations and thoroughness with the agenda and for the care and attention that went into the induction ceremony.

The report was received as information. No action required.

4.2 Registrar's Report (for information/discussion)

Scott McLeod highlighted key points in his report regarding sponsorships and the costs associated with physician assessments. He discussed the streamlined application process for internationally trained physicians and the importance of ensuring fair compensation for assessors.

He reported that the National Physician Registry (NPR) has successfully garnered signatures from all jurisdictions, and CPSA has begun the process of entering data into the registry. Physicians are not required to register themselves, as CPSA handles the data entry directly into the NPR. While each Medical Regulatory Authority (MRA) manages its own registration process, the NPR serves as the central hub that consolidates all the information from the various jurisdictions.

The report was received as information. No action required.

5.0 Department Reports

5.1 Office of the Registrar

5.1.1 CPSA Partnership Agreement with G4 Health (for approval)

Michael Neth, Chief of Staff, provided background details on the intended partnership between CPSA and G4 Health. G4 Health is a department within the Stoney Nakoda Tsuut'ina Tribal Council Ltd., (SNTTC/G4), and is governed by a Board of Directors comprised of the Chiefs of the Sovereign Nations (Bearspaw, Chiniki, Goodstoney and Tsuut'ina First Nations).

Mr. Neth sought approval of the partnership agreement with G4 Health and for the Council Chair to be the signatory, with a signing event held potentially in May 2025. The aim of the partnership agreement is to enhance collaboration with Indigenous communities. Although the G4 communities are small, their resources don't only apply to their communities, they have a broader reach. There are other like-minded communities as well who have expressed an interest in partnering and sharing resources with CPSA. Engagement with G4 will signal to others that we are trustworthy. There are currently no known costs to this partnership, only the sharing of resources and staff time.

Council discussed the implications of this partnership and the need for accountability mechanisms to track its success. Council requested further clarification on the partnership to avoid entering into unintended commitments.

Mr. Neth was asked to clarify G4's expectations and to bring that outcome back to the next Council meeting. A motion to support the partnership was not moved.

5.1.2 CPSA Path to Truth and Reconciliation (for information)

Michael Neth, Chief of Staff, provided an update to Council on CPSA's Path to Truth and Reconciliation, outlining the important steps that will be taken in 2025 with Council's support.

The initiative aims to benefit Indigenous physicians and patients. Council provided positive feedback on the results and the path forward. The Circle directed the secretariat to select one action and execute it well. This could involve a Standard of Practice (SOP), training, resources, or other mandatory measures. Medical schools are already engaged in similar efforts, and amplifying their work would be beneficial. Although there are many determinants of health and gaps in healthcare, focusing on one impactful action was agreed upon as a meaningful approach.

A Council member suggested creating a risk assessment and matrix to evaluate the impact and cost-effectiveness, ensuring the best value for effort. Scott McLeod, Registrar & CEO, emphasized the importance of taking time for an in-depth understanding rather than rushing into solutions. The Chair noted that the expected outcomes for communities are long-term, positively impacting future generations and also reminded Council that life expectancy for indigenous people is continuing to widen. She spoke about the need for accountability among Albertans and physicians to make a meaningful impact where possible.

Michael Neth was thanked for the exceptional report and encouraged to continue.

The report was received as information. No action required.

6.0 Council Committee Reports

6.1 Governance Committee

6.1.1 Succession Planning for Committee Chairs (for discussion)

Richard Buckley, Governance Committee Chair, led a discussion on succession planning for Committee Chairs. The discussion highlighted the importance of not holding someone to the position beyond a one-year term. While there is openness to making the renewal of a term optional, concerns were raised about the learning curve, suggesting that one year might not be sufficient for some individuals to fully grasp the responsibilities. The first year is often spent exploring the full scope of the role and commitment.

There is potential for a two-year model with a Chair and Vice-Chair, but some Council members expressed hesitation to commit to two years due to uncertainties in life. With an overlap into the second year involving a Vice-Chair, it would make a two-year term more agreeable. It was proposed that those in their sixth year might avoid taking on the Chair position if it were deemed a two-year commitment. Both options come with their own set of pros and cons.

Increased access to education on chairing would better prepare individuals for the role making it easier to commit. Several members of Council supported flexibility, with options for a one-year term renewable up to six times and adopting a Chair/Vice-Chair model to help facilitate mentorship.

ACTION: Dr. Buckley will take this topic back to the Governance Committee for discussion and decision.

6.1.2 Council Learning Plan 2025 (for approval)

Richard Buckley, Governance Committee Chair, presented the learning plan for Council for 2025. The learning plan included goals that Governance Committee prepared, and covered areas within Council and outside of Council meetings.

MOTION C07-25

Moved by Oluseyi Oladele and seconded by Ian Walker that Council approves the 2025 CPSA Council Learning Plan. Carried.

6.1.3 Council Competency Matrix, Nominations and Elections (for approval)

Richard Buckley, Governance Committee Chair, presented the draft competency matrix developed by MNP. It contained both core and technical competencies that reflect the "ideal profile" of a CPSA Council member.

There were no concerns regarding the competency profile. A chart was created to assess gaps in public and physician expertise. Council noted the absence of expertise in medical training and assessment, which is typically covered by Deans, but questioned if such expertise on the Council is as crucial as human resources and finance. Financial acumen is a desired strength since Council approves the budget. Scott McLeod pointed out that the organization already has operational expertise, including finance, and it would be unrealistic to have such expertise on the Council for all areas and programs.

Shifting to a nomination process does not apply to public members appointed by the Government of Alberta (GoA). CPSA hopes to inform GoA of the gaps and request assistance in placing individuals with the needed experience.

It was stated that the Governance Committee would oversee the nomination work within the first year and then a nomination committee will be struck to undertake this work in subsequent years.

ACTION: MNP will reach out individually to Council to set up the self-assessments but will not be engaged further.

MOTION C08-25

Moved by Patrick Etokudo and seconded by Laurie Steinbach that Council approves the proposed core and technical Council Members Competencies. Carried.

6.2 Anti-Racism Anti-Discrimination Action Advisory Committee (ARADAAC)

6.2.1 Meeting Summary Report (for information)

Daisy Fung, ARADAAC Chair, presented the meeting summary report.

This committee met on February 14, 2025, and prior to that it was May 3, 2024. She provided an explanation of the extended time between meetings, noting there were simply some challenges that took time to address.

An external EDI consultant was hired late 2024 to conduct a climate assessment. The consultant met individually with committee members to learn more about their strengths and barriers. This feedback was incorporated into the final report. The intention of the Chair and Secretariat is to build momentum now by meeting every month through to year end. In addition to this, a 2 day in-person workshop in April is also being planned.

The report was received as information. No action required.

6.3 Indigenous Advisory Circle (CIRCLE)

6.3.1 Meeting Summary Report (for information)

Nicole Cardinal, Committee Co-Chair, presented the meeting summary report. She highlighted that Tibetha Kimball was appointed to the Circle in December 2024 and welcomed to her first meeting in February 2025. Rhonda Laboucan's appointment was approved in Council's consent agenda today. Rhonda will attend her first meeting in April 2025.

The report highlighted that the Circle is supportive of the draft engagement principles and recognizes that CPSA understands the importance of respecting treaties and the experiences of Indigenous People. The Circle is looking forward to seeing their feedback incorporated.

The report was received as information. No action required.

6.4 Ad Hoc Bylaw Review Project Committee

6.4.1 Presentation of Revisions of Bylaws, Section 1-5 (for discussion & approval)

Michael Neth, Committee Secretariat, presented the proposed revisions to the bylaws.

(This item was deferred from March 6th public session for discussion on March 7th)

Michael Neth reported that the Bylaws revision was started in 2023. Meetings were held with all departments to gather feedback on their program specific sections. Third party legal was completed on the sections presented to Council with no concerns noted from legal. The request presented to Council was for the approval of sections 1-5 with an adoption date effective May 1st, 2025.

The revisions represent the status quo, except for the Council elections. Enabling language was added to the elections section to ensure the new elections model has a home. The Secretariat anticipates running the new elections model this year.

Council requested an overview of the changes to date. There was some concern with passing Bylaws in parts rather than the whole. Mr. Neth provided details of the changes which Council debated. It was noted that deciding now would allow the team who has been working on this for 18 months to put these first sections to rest and move forward.

ACTION: Provide the 3-column document to Council and those who are interested can review.

MOTION C09-25

Moved by Rob Merrifield and seconded by Garnet Clark to waive the notice to amend the Bylaws. Carried

MOTION C10-25

Moved by Patrick Etokudo and seconded by Pan Zhang that Council approves the proposed new CPSA Bylaws Parts 1-5 with an adoption date of May 1, 2025. Carried.

The public session was adjourned at 1352 on Thursday March 6, 2025.

IC2 In-camera Session

Council met for an in-camera session.

COLLEGE OF PHYSICIANS
& SURGEONS OF ALBERTA

Decision Items
In-Camera Meetings

To ensure transparency of the decision-making of the Council of the College of Physicians and Surgeons of Alberta, a report noting decisions passed during In-camera sessions will be brought forward to the next public meeting.

In-Camera Sessions: March 6 and 7, 2025
Council met in-camera at various times during the March 6 and 7 Council meeting to discuss sensitive issues. The following motions were made:

Motion C01-25
Moved by Pan Zhang and seconded by Laurie Steinbach that the in-camera agenda be adopted. Carried.

Motion C02-25
Moved by Garnet Clark and seconded by Rob Merrifield that the in-camera minutes for December 5 and 6, 2024 be approved. Carried.

Motion C03-25
Moved by Rick Buckley and seconded by Pan Zhang that Council approves the draft response letter to the Physicians and Albertans for Trans Health as modified. Carried.

COLLEGE OF PHYSICIANS & SURGEONS OF ALBERTA

Decision Items
In-Camera Meetings

To ensure transparency of the decision-making of the Council of the College of Physicians and Surgeons of Alberta, a report noting decisions passed during In-camera sessions will be brought forward to the next public meeting.

In-Camera Session: April 1, 2025
Council met in-camera on Tuesday, April 1, 2025 for a special Council meeting.

The attendees were as follows:

Council Members: Voting:
- Nicole Cardinal, MD, CCFP, Chair
- Daisy Fung, BMSc, MD, CCFP, Vice Chair
- Rhonda Laboucan, Member-at-Large
- Richard Buckley, MD, FRCS
- Garnet Clark, MBA, CPA, CMA
- Logan Day, BA
- Patrick Etokudo, M.Sc, FSCMP
- Nahla Gomaa, MBBCH, MSc, MD PhD, SFHEA, FAcadMEd
- Hon. Robert Merrifield, PC
- Oluseyi Oladele, MD, CCFP, FCFP
- Laurie Steinbach, BSW, BEd
- Ian Walker, MD, MA
- Pan Zhang, MBA, BSc, BA

Council Members: Non-Voting:
- Todd Anderson, MD, FRCP(C), FCAHS, Dean Cumming School of Medicine
- Brenda Hemmelgarn, MD, PhD, Dean FoMD
- Jenna Salem, Student Observer
- Tamara Yee, MD, PhD, Past-President, PARA

Regrets
- Maryana Kravtsenyuk, MD, MSc, FRCPC

CPSA
- Ed Jess, BA, Chief Innovation Officer
- Kimberley Murphy, Recording Secretary

The following motions were made:

MOTION C11-25
Moved by Logan Day and seconded by Pan Zhang that the agenda be adopted. Carried.

MOTION C12-25
Moved by Rob Merrifield and seconded by Patrick Etokudo that Council approve the Search & Selection Committee's recommended candidate, **Dr. Colleen Forestier**, to be CPSA's new Registrar & CEO. All in favour. Carried.

MOTION C13-25
Moved by Laurie Steinbach and seconded by Oluseyi Oladele that Council authorize the Council Chair, Dr. Nicole Cardinal, to extend an **Employment Contract to Dr. Colleen Forestier** on behalf of CPSA Council. All in favour. Carried.

cpsa
COLLEGE OF PHYSICIANS & SURGEONS OF ALBERTA

Submission to:	**Council**		
Meeting Date:	Submitted by:		
May 29, 2025	Nicole Cardinal Committee and Council Chair		
Agenda Item Title:	3.1 Consent Agenda - Executive Committee Meeting Summary Report		
Action Requested:	☐ The following items require approval by Choose an item. See below for details of the recommendation.	☐ The following item(s) are of particular interest to Choose an item. Feedback is sought on this matter.	☒ The attached is for information only. No action is required.
AGENDA ITEM DETAILS			
Recommendation:	N/A		
Background:	The Executive Committee met on April 22, 2025, and discussed the following matters: 1. **Council Meeting Agenda for May 2025:** The Committee used the following inputs to develop the agenda for the May Council meeting and discussed how to structure the items for discussion: • Minutes from previous meetings. • Data from the March Council Meeting Feedback Survey. 2. **Governance Review Implementation Plan (GRIP):** • **Public Interest** - The Committee reviewed the jurisdictional scan on how other regulatory organisations keep the public interest front of mind in their discussions. The Committee also reviewed and provided input on a draft revised Council cover report. They recommended that Council be provided with potential versions of the cover report for their discussion and approval. • **Performance Measurement Framework** – The Committee deferred this review and discussion to the next meeting. 3. **Engaging with Council Members about Traditional Territorial Acknowledgments:** The Committee discussed various approaches to support Council members in their learning and delivery of acknowledgments during Council sessions. 4. **Accountability for Council Member Attendance:** The Committee explored and provided input on a tool to track Council members' attendance at Council and Committee meetings and appeals. They noted that the tool could be usefulness for helping Council members reflect on their time		

	commitments and helping potential Council members have a better understanding of the time commitment required to be on Council. Additionally, it could serve as a means of helping to keep Council members accountable. The tool will be developed and brought back to the Committee for feedback. 5. **Council Effectiveness:** The Committee reviewed the results of the Council Member Self-Evaluation Survey (aggregate and anonymous results) and the Council Effectiveness Survey. They discussed approaches for improving Council's effectiveness based on the feedback provided in both surveys. 6. **Council Policies – Executive Elections Policy:** The Committee reviewed and discussed the recommended revisions to the Executive Elections policy and did not recommend any further changes. 7. **External Meetings:** An update was provided on upcoming meetings with provincial officials and stakeholders.
Next Steps:	N/A
List of Attachments:	
N/A	

cpsa
COLLEGE OF PHYSICIANS & SURGEONS OF ALBERTA

Submission to:	**Council**		
Meeting Date:	Submitted by:		
May 29, 2025	Governance Committee		
Agenda Item Title:	3.2.1 Governance Committee Meeting Summary Report		
Action Requested:	☐ The following items require approval by Choose an item. See below for details of the recommendation.	☐ The following item(s) are of particular interest to Choose an item. Feedback is sought on this matter.	☒ The attached is for information only. No action is required.
AGENDA ITEM DETAILS			
Recommendation:	N/A		
Background:	At its April 16 meeting, the Governance Committee considered the following items: 1. **Committee Chair Orientation & Training:** The Committee discussed their support for the topics for the upcoming Chair Orientation and Training, as part of the Council Learning Plan for 2025. 2. **Council Elections & Nominations Committee:** The Committee reviewed the communications plan and outline of the phases of upcoming nominations. It was discussed that a sub-set of the Committee would conduct interviews with potential candidates, in keeping with their availability after Council nominations in June. 3. **Council Retreat 2026:** The Committee provided feedback and input on a potential theme and focus for the upcoming Council Retreat, recommending a combined exploration of the strategic plan and artificial intelligence. 4. **Committee Appointments:** The Committee reviewed and approved the recommendations for Council Committee membership appointments, which are being recommended to Council for approval. 5. **Council Policies:** The Committee reviewed several Council policies with recommendations to Council for revision, retirement and rescission. 6. **Succession Planning for Committee Chairs:** It was concluded that Committees should continue to be encouraged to have discussions on their next Chair early in the year, and the Governance Committee will provide support as needed for Committees struggling to determine their upcoming Chair. Committees should also continue to		

	use the Vice Chair and Co-Chair model to help prepare Committee members to be Chair. 7. **Assessment Tool for Re-Appointment of Council Member to Council:** The Committee discussed the content and process for re-appointing regulated members to Council. The tool will be developed and brought back to an upcoming Governance Committee meeting for further improvement. 8. **Bylaw Revisions:** The Committee reviewed and discussed proposed bylaw revisions to the list of prescribed health services, for recommendation to Council for approval. 9. **Committee Reports:** The Committee reviewed the annual reports from for the standing and priority Council Committees, which compared the roles and responsibilities in the Terms of Reference with work completed in 2024. On May 1, 2025, the Committee concluded an e-vote to recommend the following reports to Council: - Executive Elections Policy - ARADAAC Annual Report for 2024
Next Steps	N/A
List of Attachments	
N/A	

cpsa
COLLEGE OF PHYSICIANS & SURGEONS OF ALBERTA

Submission to:	**Council**

Meeting Date:	Submitted by:		
May 29, 2025	Governance Committee		
Agenda Item Title:	3.2.2 Consent Agenda - Governance Committee - Committee Appointments		
Action Requested:	☒ The following items require approval by Council. See below for details of the recommendation.	☐ The following item(s) are of particular interest to Choose an item. Feedback is sought on this matter.	☐ The attached is for information only. No action is required.

AGENDA ITEM DETAILS	
Recommendation (if applicable) :	That Council approves the following Committee appointments: 1. Appointment of Vice Chair for the Anti-Racism Anti-Discrimination Action Advisory Committee - Kannin Osei-Tutu (for 2025). 2. Appointment of Robert Merrifield as Chair and Pan Zhang as Vice Chair for the 2026 Governance Committee meeting, with Robert serving as Co-Chair for the rest of 2025. 3. Appointment of two (2) regulated members for a first term on the Complaint Review Committee/Hearing Tribunal membership list, effective June 1, 2025: a. Dr. Sandi Culo b. Dr. Katherine Bateman
Background:	Committee member appointments are outlined in the Governance Structure and Committees Policy as follows: "Council appoints the members of Council and Operational Committees for a three-year term which is renewable once. Due to the subject matter, and because priorities might change, Council Priorities Committee members will be asked to confirm their committee membership annually and may exit the Committee before having completed a full term. The Governance Committee generally tries to recommend appointments based on the skills and interests of the Council member however sometimes the needs of the organization outweigh the needs of individual Council members. The following appointments are recommended.

	Anti-Racism Anti-Discrimination Action Advisory Committee Dr. Kannin Osei-Tutu is a non-Council member Committee member who has been serving on the Committee since 2022 and is functioning in the capacity of Vice Chair, without a formal appointment. He has expressed interest in continuing in this role for 2025. He is a family physician in Calgary, Alberta, known for his work in equity, diversity, inclusion, and wellness. He serves as the inaugural senior associate dean – Health Equity and Systems Transformation at the Cumming School of Medicine. **Governance Committee** The Governance Committee discussed the position of Chair and Vice Chair for the 2025 term, and recommended Robert Merrifield as Chair and Pan Zhang as Vice Chair for the 2025 Governance Committee meeting, with Robert serving as Co-Chair for the rest of 2024. **Complaint Review Committee/Hearing Tribunal** The Health Professions Act directs that CPSA must maintain a membership list of regulated members from which HT and CRC panels are appointed. The Bylaws of CPSA state that members are appointed to this committee for a three-year term, with an optional further appointment of an additional three-year term for a total of six years. The Hearings Director reviewed each member's resume, conducted personal interviews and examined each member's complaint/disciplinary record before making the recommendation to the Governance Committee. The Governance Committee supported the recommendation to appoint all submitted regulated members for the CRC/HT membership list at its April meeting.
Next Steps:	Following Council appointments, Committee secretariat will inform Committee Chairs and members of their appointments.
List of Attachments:	
N/A	

Submission to:	**Council**

Meeting Date:	Submitted by:		
May 29, 2025	Governance Committee		
Agenda Item Title:	3.2.3.1 Registration Policies		
Action Requested:	☒ The following items require approval by Council. See below for details of the recommendation.	☐ The following item(s) are of particular interest to Choose an item. Feedback is sought on this matter.	☐ The attached is for information only. No action is required.
AGENDA ITEM DETAILS			
Recommendation (if applicable) :	That Council rescind the ***Practice Readiness Assessment (PRA) Policy, Summative Assessment Policy,*** *and the* ***Provisional Register Transfer to General Register Policy*** on the basis that these policies inappropriately constrain the statutory discretion assigned to the Registrar; they may infringe upon the Registrar's operational policy-making authority, contrary to administrative law principles; and they represent a well-intentioned but incorrect assumption of Council's role in registration decisions.		
Background:	These policies, while developed with the intent to uphold public safety and professional standards, impose rigid procedural and outcome-based requirements that may conflict with the statutory discretion granted to the Registrar under Sections 3 through 7 of the Physicians, Surgeons, Osteopaths and Physician Assistants Profession Regulation (Alta Reg 200/2020). Not only do these policies risk fettering the Registrar's adjudicative discretion, but they may also encroach on the Registrar's authority to establish fair, consistent, and transparent procedures for managing the registration process. Rescinding the policies would bring CPSA's governance back into alignment with administrative law principles and support a clearer separation between Council's strategic role and the Registrar's operational mandate. Council approved both policies on September 10, 2020: 1. Practice Readiness Assessment Policy: Ensures physician applicants not meeting the full requirements of the General Register are ready for independent practice in Alberta by undergoing the practice readiness assessment (PRA) composed of two parts: Part A - Preliminary Clinical		

Assessment (PCA) and Part B - Supervised Practice Assessment (SPA). Applicants must pass these assessments in succession before receiving an Alberta medical practice permit.

2. Summative Assessment Policy: Requires physicians on the Provisional Register to undergo a high-stakes, pass/fail assessment after six years if they have not obtained Canadian credentials. Failure results in automatic deregistration.

3. Provisional Register Transfer to General Register Policy: Creates a checklist of requirements for eligibility to transfer, including specific exams, continuous recent Alberta-based practice, and participation in national maintenance-of-competence programs.

While intended to protect the public and ensure physician competence, these policies operate in ways that may exceed the boundaries of Council's legislative authority. Council may consider engaging in future work to support the development of overarching principles or strategic guidance around registration, but any operational policies and assessment frameworks should be developed and maintained by the Registrar within the boundaries of the legislation.

Analysis:

1. Fettering the Registrar's Statutory Discretion
These policies apply to sections 3–7 of the Regulation. These sections of the Regulation empower the Registrar—not Council—to make individual determinations regarding registration. The Registrar's discretion includes the ability to consider individual circumstances, assess non-standard qualifications, and evaluate equivalency or competency outside strict credentialing pathways.

Administrative law prohibits the fettering[1] of discretion by rigid policy. These policies:

[1] In the context of regulatory governance, **"fettering" refers to the improper limitation of a decision-maker's legal discretion**—specifically when that discretion is granted by legislation. Fettering is a problem because it can: Fettering is a problem because it can: undermines fairness by preventing consideration of exceptional cases, exceed Council's role by shifting decision-making authority away from the decision-maker intended by the legislation, and increase legal risk because courts expect administrative decisions to be made lawfully, based on the merits of each case in accordance with the applicable legislation.

	• Prescribe **automatic outcomes** (e.g., deregistration for summative assessment failure), • Define **mandatory prerequisites** that go beyond the Regulation, • Limit **flexibility for exceptional cases** or alternative evidence of competence. This prevents the Registrar from exercising case-by-case judgment, which the Regulation clearly intends. **2. Encroachment on the Registrar's Operational Authority** Beyond constraining decision outcomes, these policies may also inappropriately restrict the Registrar's ability to establish and evolve the operational policies and procedures necessary for administering the registration process fairly and consistently. While Council sets strategic policy, it is the Registrar who should determine: • How assessments are administered, • What procedural safeguards are needed, • And how discretion should be guided across different registration contexts. By imposing specific requirements and measures, the policies not only set outcomes but also occupy administrative ground that rightly belongs to the Registrar's office. **3. Council's Role in Oversight, Not Administration** Council's role is to ensure accountability, public protection, and good governance—not to execute the day-to-day regulatory function. When Council decisions begin to look like administrative directives, they risk exceeding the limits of their mandate. A better approach would be to provide broad policy direction and support the Registrar in developing operational tools consistent with that direction.
Next Steps:	The Council policies will be rescinded then made into Registrar policies.

List of Attachments:

1. Practice Readiness Assessment (PRA) Policy
2. Summative Assessment Policy
3. Provisional Register Transfer to General Register Policy

COLLEGE OF PHYSICIANS & SURGEONS OF ALBERTA

Registration Assessments Policy

POLICY TITLE	Practice Readiness Assessment (PRA)
PURPOSE	Ensure physician applicants not meeting the full requirements of the General Register are ready for independent practice in Alberta.
SCOPE	This policy applies to physicians who are eligible for registration on the Provisional Register Conditional Practice with CPSA **and** who have sponsorship for a clinical position. The practice readiness assessment (PRA) is composed of two parts that applicants must pass in succession before receiving an Alberta medical practice permit: • Part A: Preliminary Clinical Assessment (PCA) • Part B: Supervised Practice Assessment (SPA)
NOTES	• The applicant must pass both the PCA and the SPA (in succession) in order to be eligible for independent practice on CPSA's Provisional Register Conditional Practice. • The PRA is a high stakes pass/fail process. It ensures physicians who don't have their Canadian credentials have the knowledge and competency to practise medicine safely in Alberta. • The PRA is not a training experience or a process to identify remediation needs to be addressed prior to independent practice. • Due to limited resources, a physician has two attempts to pass a PRA in any Canadian jurisdiction. • Ongoing sponsorship is required in order to be eligible for any PRA. • If the candidate's conduct becomes the subject of a complaint under Part 4 of the *Health Professions Act*, the PRA process may be put on hold until the complaint has been resolved. A final decision on the outcome of the PRA will not be made until the information resulting from the complaint and the final outcome of the complaint are available for consideration as part of the application for registration.

LAST REVISED: MARCH 28, 2024
APPROVED BY COUNCIL: SEPTEMBER 10, 2020

POLICY STATEMENT

Physician applicants who do not meet the CPSA General Register requirements must fulfill the following in order to undergo a PRA:

1) Meet the eligibility requirements for the Provisional Register, Conditional Practice; and
2) Obtain sponsorship.

During the PCA portion of PRA, applicants:

1) Are assessed while working under the direct supervision of an independent CPSA-approved assessor and are **not** the patients' most responsible physician. The applicant must remain under direct supervision for the duration of the assessment.
2) Are typically assessed in a clinical location that is independent of where the physician has been sponsored to work
3) Must satisfactorily complete all required components of the assessment.
4) Undergo the assessment for three months. The assessment may be terminated at any time if CPSA's Assistant Registrar or designate has sufficient evidence to make a practice-ready decision, be it a pass or fail.

During the SPA portion of PRA, applicants:

1) Are assessed by a CPSA-approved supervisor, who provides indirect supervision of the candidate.
2) Are typically supervised in the clinical location that the physician has been sponsored to work at.
3) Are the patients' most responsible physician and can bill Alberta Health for provision of medical services.
4) Must satisfactorily complete all required components of the assessment.
5) Undergo the assessment for three months. The assessment may be terminated at any time if CPSA's Assistant Registrar or designate has sufficient evidence to make a practice-ready decision, be it a pass or fail.

The role of the physician assessor/supervisor is to conduct the PRA and to gather evidence, the final outcome of the PRA is that of the Assistant Registrar of Registration or designate.

The PRA will be individualized to reflect the scope of practice and practice setting that the physician has been sponsored to work in.

Failure of any part of the assessment process will result in a refusal of registration on the Provisional Register Conditional Practice.

The PCA may be waived if:

- The applicant has successfully completed postgraduate training in Canada but do not have certification with the Canadian Family Physicians of Canada (CFPC) or the Royal College of Physicians and Surgeons of Canada (RCPSC).
- The applicant has a full-time academic appointment in a faculty of medicine in Alberta.

- The applicant has completed family medicine or speciality postgraduate training in the USA in an Accreditation Council for Graduate Medical Education (ACGME) accredited programme, has the MCCQE1 or equivalent alternative such as the USMLE examinations, and American board certification in their discipline of training.
- The applicant has completed postgraduate training in family medicine that is deemed equivalent by the College of Family Physicians of Canada and provides a letter from the CFPC that they have been found eligible for certification without examination.
- The applicant has training comparable to that obtained in Canadian universities, as identified by experts in postgraduate medical training.

In order to become a PRA-AB Assessor, physicians must:

- Have an Alberta medical practice permit.
- Are on the General Register.
- Are in good standing with CPSA.
- Have 3 or more years of active practice in Alberta.
- Have national certification (CFPC or RCPSC) in their specialty or sub-specialty or an active faculty appointment.
- Have AHS or Covenant Health privileges, if applicable to the scope of the physician being assessed.
- Come highly recommended by their Department Head/Zone Medical Director or have passed a CPSA peer review.
- Have recent experience in teaching and assessing medical students and residents.
- Demonstrate common sense, objectivity and the ability to make firm decisions.
- Are leaders among their peers.

SUPPORTING DOCUMENTS

- Eligibility Requirements for Provisional Register Conditional Practice
- Practice Readiness Assessment information
- Medical Council of Canada (MCC) National Assessment Collaboration's (NAC) Practice-Ready Assessment (PRA) programs

RESPONSIBILITIES

The Registrar is given the authority to determine applications for registration under sections 28 to 30 of the *Health Professions Act* (HPA). Section 20 of the HPA allows the Registrar to delegate functions and duties to another person. The Registrar has delegated his duties and responsibility under Part 2 of the HPA to the Assistant Registrar responsible for registration.

APPROVAL

Council governing the College of Physicians & Surgeons of Alberta

AUTHORITY DOCUMENTS

- *Health Professions Act*

- *Health Professions Act*: Physicians, Surgeons, Osteopaths and Physician Assistants Profession Regulation
- CPSA Bylaws

COLLEGE OF PHYSICIANS & SURGEONS OF ALBERTA

Registration Assessments Policy

POLICY TITLE	Provisional Register Transfer to General Register
PURPOSE	Ensure physicians on the Provisional Register have the required knowledge, clinical skills and competencies to practise medicine safely in Alberta in order to transfer to the General Register.
SCOPE	Under the Physicians, Surgeons and Osteopaths Regulations, registration on the Provisional Register is valid for a maximum of six years. Physicians who are on the Provisional Register Conditional Practice are eligible to transfer to the General Register immediately once they: • have obtained the Licentiate of the Medical Council of Canada (LMCC); and • have obtained certification from the College of Family Physicians of Canada (CFPC) or the Royal College of Physicians and Surgeons of Canada (RCPSC). Physicians may also be eligible for transfer under the substantial equivalency route **or** following successful completion of a summative, practice-based assessment in a Canadian jurisdiction.
NOTES	The criteria for transfer to the General Register will depend on the candidates' most recent Registration Understanding and Acknowledgment (RUA). Physicians who are on the Provisional Register for an academic appointment should review CPSA GEN REG Academic Appointment Policy.

LAST REVISED: SEPTEMBER 10, 2020
APPROVED BY COUNCIL: SEPTEMBER 10, 2020

POLICY STATEMENT

CPSA Provisional Register members must meet a number of requirements in order to be eligible to transfer to the CPSA General Register. They must:

1) Successfully complete the Medical Council of Canada Qualifying Examination Part 1 (MCCQEI); and
2) Have practiced independently on a provisional license in Canada; and
3) Provide evidence that they have completed at least five years of satisfactory practice in Canada if requested.

4) Provide evidence of 5 years of active practice in any jurisdiction and in the 1 year preceding transfer to General Register, must be in full time, continuous practice in Alberta or 12 months within the prior 3 years.

5) Have certification with the CFPC, RCPSC or the CMQ; **or**
Successful completion of a summative, practice-based assessment in a Canadian jurisdiction.

6) To be currently in good standing with CPSA and to satisfactorily resolve any outstanding matters with professional conduct, continuing competence or other interventions.

7) Be enrolled in, and compliant with either the CFPC's **Mainpro+** program **or** RCPSC's Maintenance of Competence (MOC).

8) Satisfactorily complete all conditions on the Provisional Register, as outlined on their current RUA.

9) Provide evidence that they are currently in practice in Alberta if requested.

10) Provide CPSA with source verification documents through **Physiciansapply.ca**

11) Submit a satisfactory **criminal record check**.

SUPPORTING DOCUMENTS

- Criminal Record Check
- Medical Council of Canada
- College of Family Physicians of Canada
- Royal College of Physicians and Surgeons of Canada
- Mainpro+
- Maintenance of Competence
- Physiciansapply

RESPONSIBILITIES

The Registrar is given the authority to determine applications for registration under sections 28 to 30 of the *Health Professions Act* (HPA). Section 20 of the HPA allows the Registrar to delegate functions and duties to another person. The Registrar has delegated his duties and responsibility under Part 2 of the HPA to the Deputy Registrar responsible for registration.

APPROVAL

Council governing the College of Physicians & Surgeons of Alberta

AUTHORITY DOCUMENTS

- *Health Professions Act*
- *Health Professions Act*: Physicians, Surgeons, Osteopaths and Physician Assistants Profession Regulation
- CPSA Bylaws

COLLEGE OF PHYSICIANS & SURGEONS OF ALBERTA

Registration Assessments Policy

POLICY TITLE	Summative Assessment
PURPOSE	Ensure physicians on the Provisional Register who have not achieved their Canadian credentials have the required knowledge, clinical skills and competencies to practise medicine safely in Alberta and are competent to transfer to the General Register.
SCOPE	This policy applies to physicians who are required to undergo a Summative Assessment. Physicians must undergo a Summative Assessment if after six years on the Provisional Register they do not hold the Medical Council of Canada Qualifying Examination Part I (MCCQE1) and certification with either the Royal College of Physicians and Surgeons or Canada (RCPSC) or the College of Family Physicians of Canada (CFPC). The Registration Understanding and Acknowledgement (RUA) will state these conditions on it. Physicians whose Preliminary Clinical Assessment (PCA) was waived at the time they were placed on the Provisional Register are exempt from the Summative Assessment (e.g., academic appointments).
NOTES	The Summative Assessment is a mandatory high-stakes pass/fail assessment of a physician's medical knowledge and procedural skills, clinical decision-making skills, communication and professionalism to ensure the physician is fully competent to join CPSA's General Register. The assessment takes place over a period of three to four days at the physician's practice location(s). The cost is the responsibility of the physician undergoing the assessment.

LAST REVISED: SEPTEMBER 10, 2020
APPROVED BY COUNCIL: SEPTEMBER 10, 2020

POLICY STATEMENT

Physicians who are required to undergo a Summative Assessment must complete the following requirements:

Prior to undertaking the Summative Assessment, the candidate must:

1) Provide the privacy consents required as part of the summative assessment process.
2) Complete the pre-assessment questionnaire.
3) Provide names and email addresses of 15 patients and 10 physician colleagues, including at least three specialists to whom the candidate has sent referrals (family medicine) or specialist colleagues (specialist), to the CPSA-approved assessor to conduct the multi-source feedback component.

To pass the Summative Assessment, the candidate must pass all of the individual components of the assessment:

1) Satisfactory conduct of the **direct observation** of candidate-patient interactions.
2) Successful outcome of the **chart review** of selected patient charts.
3) Successful outcome of the **chart simulated recall.**
4) Satisfactory assessment of the candidate's **communication and professionalism** demeanour.
5) Satisfactory **multi-source feedback.**
6) Satisfactory review of the assessor's findings and assessment reports (based on evidence from the assessment). The reports and findings are reviewed by CPSA's Summative Assessment Committee, which then makes a recommendation to CPSA's Deputy Registrar of Registration, who makes the final decision.

Passes and fails:

1) If the candidate passes the Summative Assessment, they are transferred to the General Register for independent practice in Alberta.
2) If the candidate fails the Summative Assessment, they are no longer eligible for registration in Alberta and their registration and practice permit will be cancelled. A review process is available to physicians who fail under Section 32 of the *Health Professions Act*.

SUPPORTING DOCUMENTS

- Registration Assessments
- Direct Observation Form
- Direct Observation for Procedural Skills (DOPS) in Family Medicine
- Direct Observation for Procedural Skills (DOPS) in Specialist
- Chart Review Package
- Communication and Professionalism
- Patient Appointment Observation Consent Form
- Patient Chart Review Consent Form
- Standards of Practice Review

RESPONSIBILITIES

The Registrar is given the authority to determine applications for registration under sections 28 to 30 of the *Health Professions Act* (HPA). Section 20 of the HPA allows the Registrar to delegate functions and duties to another person. The Registrar has delegated his duties and responsibility under Part 2 of the HPA to the Deputy Registrar responsible for registration.

APPROVAL

Council governing the College of Physicians & Surgeons of Alberta

AUTHORITY DOCUMENTS

- *Health Professions Act*
- *Health Professions Act*: Physicians, Surgeons, Osteopaths and Physician Assistants Profession Regulation
- CPSA Bylaws

COLLEGE OF PHYSICIANS & SURGEONS OF ALBERTA

Submission to:	**Council**

Meeting Date:	Submitted by:		
May 29, 2025	Governance Committee		
Agenda Item Title:	3.2.3.2 Council Policies – Executive Elections		
Action Requested:	☒ The following items require approval by Council. See below for details of the recommendation.	☐ The following item(s) are of particular interest to Choose an item. Feedback is sought on this matter.	☐ The attached is for information only. No action is required.

AGENDA ITEM DETAILS

Recommendation (if applicable) :	That Council approves the recommended revisions to the Executive Elections Policy.
Background:	The Governance Committee is responsible for recommending, reviewing and developing Council policies in collaboration with other Committees as necessary. The Committee is also responsible for monitoring the language of bylaws, terms of reference, policies and communications for barriers which could limit diversity and inclusion on Council. **Executive Elections Policy** According to the Policy Review Schedule for the Committee for 2025, this policy is being brought forward. It was established in 2019 to outline the process for selecting Officers of Council. Since then, it has undergone different revisions for clarity and is before Council as part of the routine policy review schedule. The following groups were invited to provide a review of the policy, and recommended revisions to the policy for Council's approval: • Office of the Registrar • Equity, Diversity and Inclusion (EDI) Committee • Governance Committee • Executive Committee
Next Steps:	The approved Executive Elections Policy will be replaced with the existing policy on the CPSA website and will be used to guide future executive elections.

List of Attachments:

1. Executive Elections Policy (tracked changes version)
2. Executive Elections Policy (clean final version in the CPSA policy template)

COLLEGE OF PHYSICIANS & SURGEONS OF ALBERTA

Executive Elections

		Policy Number	
Effective Date	July 25, 2019	**Review Period**	Every 3 years
Date of Last Review	May 29, 2025	**Policy Owner**	Council

1.0 Purpose

The purpose of a policy for Executive Elections is to ensure a fair, consistent and transparent process to elect members to the Executive Committee, therefore, this policy sets out the process for electing the Officers of Council.

2.0 Scope/Application & Authorities

The CPSA Bylaws establish the positions of "Officers of Council" who, once elected form the CPSA Executive Committee. The Executive Committee is comprised of at least three members of Council who are annually elected to the positions of Chair, Vice-Chair and Member-at-large. At least one member of the Executive Committee needs to be a public member and at least one member needs to be a physician member.

Governance Committee is responsible for the facilitation of the Executive election process and may appoint and direct a Nomination Sub-Committee to assist with that process. CPSA Council approves this policy on a recommendation from the Governance Committee.

3.0 Policy Details

3.1 Eligibility

Any voting member of Council who has served at least one year by the start of the term for the Executive Committee positions is eligible to run for one or more of the positions: Chair, Vice-Chair or Member-at-Large.

3.2 Term of Office

Members elected to the Executive Committee will serve for one year and have the option to run for an additional term in that same position, such that the maximum term in any one position on the Executive Committee is two (2) years. However, members can run for other positions on Executive Committee in subsequent years.

3.3 Timing

The Governance Committee will be responsible for setting the date for election of the Executive Committee members.

i. the election for Council Chair will be held at the second Regular Council meeting of the year (held in Spring), to be effective on January 1st of the following year.
ii. The elections for Council Vice-Chair, and Executive Committee Member-at-Large will be held at the third Regular Council meeting of the year (held in Fall), to be effective on January 1st of the following year.

3.4 Nomination Process

i. Nominations, including a Statement of Interest (see supporting documents), need to be submitted at least one month prior to elections. Nominations require the support of two voting Council members and should be submitted to the Senior Executive Assistant to the Registrar.
ii. Nominations will be reviewed to ensure eligibility of candidates and that there is at least one candidate for each position.
iii. Nominations will not be accepted from the floor.
iv. If, following the elections, there is not at least one physician member or at least one public member on the Executive Committee, the Governance Committee (or a duly appointed Nomination Sub-Committee) will recommend the appointment of an additional public member or physician member as needed.

3.5 Voting Process

i. The Chair of the Governance Committee is responsible for conducting the Executive election. If the Chair of the Governance Committee is running for an Executive position, the Governance Committee will select another member to conduct Executive elections.
ii. Prior to the vote, each candidate will have 5 minutes to address Council.
iii. Anonymous voting is conducted during an in-camera session of Council using an electronic voting application.
iv. Only those present during the agenda item "Executive elections", will be able to vote to elect the members of the Executive Committee.
v. Voting results are kept secure by the Senior Executive Assistant until the subsequent year's Executive elections are complete.
vi. In the event of a tie:
    a. In the case of a tie in which other candidates had less votes than the ones who tied, those candidates are dropped from the ballots, and another vote takes place.
    b. Candidates still in the running will be offered 3 minutes to address Council prior to the second ballot.

c. In the case of a tie with only two candidates, the candidates will be given the opportunity to confirm if they want to continue with the election process and will then be offered 3 minutes to address Council before another vote is taken. Voting will continue until the tie is broken.

vii. If a Councillor is elected to an Executive Committee position but then is not re-appointed or is not on Council for other reasons, nominations will be re-opened to fill the vacated position through a re-election.

3.6 Ratifying the Vote

i. Council will appoint the elected individuals as Executive Committee members, with a motion duly seconded and adopted by Council, immediately following the elections.

ii. The Executive Committee for the upcoming year will be announced publicly within 30 days of the conclusion of Executive elections. (with the exception of any appointments that would be made due to insufficient candidates).

Relevant Documents

Additional information about the Executive Committee is available in the CPSA Bylaws.

The Executive Elections Nomination Form is to be updated annually regarding timeline and revised accordingly to reduce accessibility barriers.

Document History

Review Date	Revision/Change
July 25, 2019	Approval by Council
August 23, 2019	Added supporting document and process in event of a tie.
May 28, 2020	Clarification to length of term for the Executive Committee Members
December 3, 2020	Clarification to Timing and Voting Process
December 1-2, 2022	Addition of "ratification", changes to timing and process, changes related to implementing the 2022 Governance Review.
May 29, 2025	Revisions to the voting process and supporting documents

COLLEGE OF PHYSICIANS
& SURGEONS OF ALBERTA

Council Policy

Policy Title	Executive Elections
Date Created	September 2019
Date of next Review	November/December 2025

1. POLICY STATEMENT

The CPSA Bylaws establish the positions of "Officers of Council" who, once elected form the CPSA Executive Committee. This policy sets out the process for electing the Officers of Council.

2. PURPOSE

The purpose of a policy for Executive Elections is to ensure a fair, consistent and transparent process to elect members to the Executive Committee.

3. SCOPE

The Executive Committee is comprised of at least three members of Council who are annually elected to the positions of Chair, Vice-Chair and Member-at-large. At least one member of the Executive Committee needs to be a public member and at least one member needs to be a physician member.

4. ELECTION PROCESSES

a) Eligibility

Any voting member of Council who has served at least one year by the start of the term for the Executive Committee positions is eligible to run for one or more of the positions: Chair, Vice-Chair or Member-at-Large.

b) Term of Office

Members elected to the Executive Committee will serve for one year and have the option to run for an additional term in that same position, such that the maximum term in any one position on the Executive Committee is 2 years. However, members can run for other positions on Executive Committee in subsequent years.

c) Timing

The Governance Committee will be responsible for setting the date for election of the Executive Committee members.

i. the election for Council Chair will be held at the second Regular Council meeting of the year (held in Spring), to be effective on January 1st of the following year.

ii. The elections for Council Vice-Chair, and Executive Committee Member-at-Large will be held at the third Regular Council meeting of the year (held in Fall), to be effective on January 1st of the following year.

d) *Nomination Process*

i. Nominations, including a Statement of Interest (see supporting documents), need to be submitted at least one month prior to elections. Nominations require the support of two voting Council members and should be submitted to the Senior Executive Assistant to the Registrar.
ii. Nominations will be reviewed to ensure eligibility of candidates and that there is at least one candidate for each position.
iii. Nominations will not be accepted from the floor.
iv. If, following the elections, there is not at least one physician member or at least one public member on the Executive Committee, the Governance Committee (or a duly-appointed Nomination Sub-Committee) will recommend the appointment of an additional public member or physician member as needed.

e) Voting Process

i. The Chair of the Governance Committee is responsible for conducting the Executive election. If the Chair of the Governance Committee is running for an Executive position, the Governance Committee will select another member to conduct Executive elections.
ii. Prior to the vote, each candidate will have 5 minutes to address Council.
iii. Anonymous voting is conducted during an in-camera session of Council using an electronic voting application.
iv. Only those present during the agenda item "Executive elections", will be able to vote to elect the members of the Executive Committee.
v. Voting results are kept secure by the Senior Executive Assistant until the subsequent year's Executive elections are complete.
vi. In the event of a tie:
    - In the case of a tie in which other candidates had less votes than the ones who tied, those candidates are dropped from the ballots and another vote takes place.
    - Candidates still in the running will be offered 3 minutes to address Council prior to the second ballot.
    - In the case of a tie with only two candidates, the candidates will be given the opportunity to confirm if they want to continue with the election process and will ~~be~~then be offered 3 minutes to address Council before another vote is taken. Voting will continue until the tie is broken.
vii. If a Councillor is elected to an Executive Committee position but then is not re-appointed~~elected~~ or is not on Council for other

Commented [KM1]: Suggested process improvement for ties in voting.

Commented [KM2]: Revision made to align with bylaw revision, which allows for re-appointment of Council members.

reasons, nominations will be re-opened to fill the vacated position through a re-election.

f) Ratifying the vote

i. Council will appoint the elected individuals as Executive Committee members, with a motion duly seconded and adopted by Council, immediately following the elections.

ii. The Executive Committee for the upcoming year will be announced publicly within 30 days of the conclusion of Executive elections. (with the exception of any appointments that would be made due to insufficient candidates).

Formatted: Font: 11 pt

5. RESPONSIBILITIES

Governance Committee is responsible for the facilitation of the Executive election process and may appoint and direct a Nomination Sub-Committee to assist with that process.

6. APPROVAL

CPSA Council approves this policy on a recommendation from the Governance Committee.

7. MONITORING, EVALUATION AND REVIEW

This policy will be reviewed every three years.

8. AUTHORITY DOCUMENTS

Additional information about the Executive Committee is available in the CPSA Bylaws.

9. SUPPORTING DOCUMENTS

a) Executive Elections Nomination Form (to be updated annually regarding timeline~~)~~ and revised accordingly to reduce accessibility barriers).

Commented [KM3]: The revision includes provisions to support Council members who may require additional accommodations related to their accessibility needs.

10. DOCUMENT HISTORY

VERSION NO.	Version Date	DESCRIPTION OF CHANGE
1	July 25, 2019	Original
2	August 23, 2019	Added supporting document and process in event of a tie.
3	May 28, 2020	Clarification to length of term for the Executive Committee Members
4	December 3, 2020	Clarification to Timing and Voting Process
5	December 1-2, 2022	Addition of "ratification", changes to timing and process, changes related to implementing the 2022 Governance Review.
6	May 29, 2025	Revisions to the voting process and supporting documents
APPROVAL	DATE	Signature
Council Motion #C44-19	November 28, 2019	
Council Motion #C21-20	May 28, 2020	
Council Motion #C59-20	December 3, 2020	
Council Motion #C65-22	December 1, 2022	
Council Motion #C15-25	May 29, 2025	

cpsa
COLLEGE OF PHYSICIANS & SURGEONS OF ALBERTA

Submission to:	**Council**

Meeting Date:	Submitted by:		
May 29, 2025	Governance Committee		
Agenda Item Title:	3.2.3.3 Council Policies - Policy Statement and Guidance on Prevention of Spread of COVID-19 in CPSA's Workplace		
Action Requested:	☒ The following items require approval by Council. See below for details of the recommendation.	☐ The following item(s) are of particular interest to Choose an item. Feedback is sought on this matter.	☐ The attached is for information only. No action is required.
AGENDA ITEM DETAILS			
Recommendation (if applicable) :	That Council retires the Policy Statement and Guidance on Prevention of Spread of COVID-19 in CPSA's Workplace		
Background:	The Governance Committee is responsible for recommending, reviewing and developing Council policies in collaboration with other Committees as necessary. The Committee is also responsible for monitoring the language of bylaws, terms of reference, policies and communications for barriers which could limit diversity and inclusion on Council. According to the Policy Review Schedule for the Committee for 2025, this policy is being brought forward. **Policy Statement and Guidance on Prevention of Spread of COVID-19 in CPSA's Workplace** This policy was established in 2023 to guide Council members on the prevention and spread of COVID-19 at Council meetings. The following individuals/groups were invited to provide a review of this policy: • Registrar • Program Manager, Infection Prevention and Control • Equity, Diversity and Inclusion (EDI) Committee • Governance Committee Following the review, this policy is submitted to Council for retirement on the following basis: • It was a time-sensitive document that is no longer appropriate in the current context.		

	• It is unlikely to have applicability in the formation of a future policy addressing potential future states of emergency. • It distracts from more relevant and current infectious disease issues (i.e., measles outbreak).
Next Steps:	The Policy Statement and Guidance on Prevention of Spread of COVID-19 in CPSA's Workplace will be removed from the CPSA website and filed as a retired policy statement.
List of Attachments:	
1. Policy Statement and Guidance on Prevention of Spread of COVID-19 in CPSA's Workplace	

Policy Title	Council Policy Statement and Guidance on Prevention of Spread of COVID-19 in CPSA's Workplace
Date Created	February 23, 2023
Date of next Review	Spring 2025

Council Policy Statement and Guidance on Prevention of Spread of COVID-19 in CPSA's Workplace

As of February 23, 2023 CPSA Council approved suspending its *Council Vaccination for COVID-19 Policy* that was approved in March 2022. The Policy required all Council members to be fully vaccinated against COVID-19, to ensure the health and safety of CPSA's workplace. The suspension of the Council Policy follows the January 1, 2023 suspension of the *CPSA Staff Vaccination for COVID-19 Policy*.

The rationale for the suspension of the policies is 1) to align with current provincial health guidelines, and 2) data shows that being fully vaccinated (having received 2 doses of the vaccine) has low effectiveness against COVID-19 infection, and the policy as written may give a false sense of security to CPSA Council and staff members.

CPSA Council remains committed to the health and safety of all Albertans. Last year, CPSA Council returned to in-person meetings, and having suspended its Council Vaccination for COVID-19 Policy, puts forward the following guidelines for CPSA Council members and guests at Council meetings, to help prevent COVID-19 and other infectious diseases:

1. Support and encouragement to all Council meeting attendees, to remain up to date on vaccines, including booster shots.
2. Wear face masks or keep a safe distance between each other if you are concerned about the spread of infection. Consider wearing a face mask or keeping a distance if you know that others around you are concerned.
3. Practice diligent hand hygiene.
4. Stay home when not feeling well. Join the meeting virtually if you feel well enough to participate, but are concerned about the spread of infection.

Should there be a need in the future, CPSA Council will consider enacting an updated policy.

cpsa
COLLEGE OF PHYSICIANS & SURGEONS OF ALBERTA

Submission to:	**Council**

Meeting Date:	Submitted by:		
May 29, 2025	Governance Committee		
Agenda Item Title:	3.2.3.4 Council Policies - Delegation of Authority to Appoint Inspectors Policy		
Action Requested:	☒ The following items require approval by Council. See below for details of the recommendation.	☐ The following item(s) are of particular interest to Choose an item. Feedback is sought on this matter.	☐ The attached is for information only. No action is required.
AGENDA ITEM DETAILS			
Recommendation (if applicable):	That Council approves the recommended revisions to the Delegation of Authority to Appoint Inspectors Policy.		
Background:	The Governance Committee is responsible for recommending, reviewing and developing Council policies in collaboration with other Committees as necessary. The Committee is also responsible for monitoring the language of bylaws, terms of reference, policies and communications for barriers which could limit diversity and inclusion on Council. According to the Policy Review Schedule for the Committee for 2025, this policy is being brought forward. **Delegation of Authority to Appoint Inspectors Policy** This policy was established in 2022 to enable CPSA to fulfill its legislated duty in Section 53.1 in a timely and efficient manner when there are concerns of unprofessional conduct and/or risks to public safety. The following individuals and groups were invited to provide a review of the policy and recommended revisions to the policy for Council's approval: • Registrar • Deputy Registrar • Assistant Registrar, Continuing Competence • Director, Continuing Competence • Program Manager, Infection Prevention and Control • Equity, Diversity and Inclusion (EDI) Committee • Governance Committee		

Next Steps:	The approved Delegation of Authority to Appoint Inspectors Policy will be replaced with the existing policy on the CPSA website and will be used to guide future delegations.
List of Attachments:	
1. Delegation of Authority to Appoint Inspectors Policy (tracked changes version) 2. Delegation of Authority to Appoint Inspectors Policy (clean final version in the CPSA policy template)	

COLLEGE OF PHYSICIANS & SURGEONS OF ALBERTA

Delegation of Authority to Appoint Inspectors

		Policy Number	
Effective Date	March 17, 2022	**Review Period**	Every 3 years
Date of Last Review	May 29, 2025	**Policy Owner**	Council

1.0 Purpose

This policy established by the CPSA Council clarifies the delegation of authority under the *Health Professions Act* (HPA) Part 3.1 (Inspections), Section 53.1 (Inspectors). It outlines the Registrar's authority to delegate the appointment of inspectors, the conditions under which such delegation may occur, and the respective responsibilities of both the Registrar and the appointed inspectors.

2.0 Scope/Application & Authorities

The CPSA has a legislative mandate to determine whether regulated members are complying with the HPA and the bylaws, standards of practice and code of ethics as outlined in the HPA section 53.1. The CPSA Council passed a motion on February 28, 2019, which delegated their authority in section 53.1 to appoint inspectors to the Registrar.

The Registrar may sub-delegate this authority to appoint an inspector to inspect a named medical practice to the Deputy Registrar and/or CPSA staff to determine if a regulated member is complying with the *HPA* the CPSA standards of practice, bylaws and code of ethics. The Registrar may also sub-delegate the authorities under section 53.3 (Application to Court) and section 53.4 (Receipt of report).

3.0 Policy Details

This delegation of authority is considered appropriate to enable the CPSA to fulfill its legislated duty to protect the public in a more timely and effective manner when there are concerns of unprofessional conduct and/or risks to public safety. In exercising this authority under Part 3.1 of the HPA, the Registrar and sub-delegates at CPSA are obligated and responsible for their actions and are accountable for their decisions.

The approval limits are considered appropriate based on the type of commitment and relative risk to the CPSA. Authority may not be sub-delegated beyond the roles identified in this policy without prior approval from the Registrar for any exceptions or modifications. Although not required by this policy, delegates are recommended to obtain the counsel and approval of leadership prior to appointment of inspectors for the purposes of unannounced inspections.

4.0 Responsibilities

The Registrar must report authority exercised, and context in which it was exercised, to the College Council annually.

The sub-delegates must report authority exercised, and context in which it was exercised, to the Registrar.

Relevant Documents

Health Professions Act (*HPA*) Part 3.1 [Inspections], Section 53.1 [Inspectors].

Document History

Review Date	Revision/Change
March 17, 2022	Approval by Council
May 29, 2025	Revision to all sections for clarity and relevance

COLLEGE OF PHYSICIANS & SURGEONS OF ALBERTA

Council Policy

Policy Title	Delegation of Authority to Appoint Inspectors
Date Created/ Revised	February 28, 2022
Date of next Review	May 2028~~March 2024~~

1. POLICY STATEMENT

The CPSA has a legislative mandate to determine whether regulated members are complying with the *HPA* and the bylaws, standards of practice and code of ethics as outlined in the *HPA* section 53.1. The CPSA Council passed a motion on February 28, 2019 which delegated their authority in section 53.1 to appoint inspectors to the Registrar.

The Registrar may sub-delegate this authority to appoint an inspector to inspect a named medical practice to the Deputy Registrar and/or CPSA staff to determine if a regulated member is complying with the *HPA* the CPSA standards of practice, bylaws and code of ethics.

The Registrar may also sub-delegate the authorities under section 53.3 (Application to Court) and section 53.4 (Receipt of report).

2. PURPOSE

This policy established by the CPSA Council clarifies the delegation of authority under the *Health Professions Act* (HPA) Part 3.1 (Inspections), Section 53.1 (Inspectors). It outlines the Registrar's authority to delegate the appointment of inspectors, the conditions under which such delegation may occur, and the respective responsibilities of both the Registrar and the appointed inspectors.~~outlines the circumstances under which the Registrar may delegate authority to appoint inspectors as per the *Health Professions Act* (*HPA*) Part 3.1 [Inspections], Section 53.1 [Inspectors].~~

Formatted: Font: Italic

~~3. DEFINITIONS~~

Commented [KM1]: It is recommended that the definitions are removed, in order for this policy to be consistent with other CPSA policies which do not include definitions.

~~**Regulated member** means any person who is registered or who is required to be registered as a member of CPSA. The CPSA regulates physicians, surgeons, osteopaths and physician assistants.~~

~~**Must** refers to a mandatory requirement.~~

~~**May** means that the physician may exercise reasonable discretion.~~

~~**Patient** includes, where applicable, the patient's legal guardian or substitute decision maker.~~

~~4.~~3. SCOPE

This delegation of authority is considered appropriate to enable the CPSA to fulfill its legislated duty to protect the public in a more timely and effective manner when there are concerns of unprofessional conduct and/or risks to public safety. In exercising this authority under Part 3.1 of the *HPA*, the Registrar and sub-delegates at CPSA are obligated and responsible for their actions, and are accountable for their decisions.

The approval limits are considered appropriate based on the type of commitment and relative risk to the CPSA. Authority may not be sub-delegated beyond the roles identified in this policy without prior approval from the Registrar for any exceptions or modifications. ~~Authority must not be sub-delegated below the delegates listed within this policy. Situations that warrant modification of limits must be approved by the Registrar.~~

Commented [KM2]: Revised for clarity.

Although not required by this policy, delegates are recommended to obtain the counsel and approval of leadership prior to appointment of inspectors for the purposes of unannounced inspections.

~~5.~~4. RESPONSIBILITIES

The Registrar must report authority exercised, and context in which it was exercised, to the College Council annually.

The sub-delegates must report authority exercised, and context in which it was exercised, to the Registrar. ~~on an annual basis, at minimum~~.

Commented [KM3]: The requirement for an annual basis is removed to reduce the need for an annual report. Whenever the authority is exercised, the Registrar is informed.

~~6. SAFETY OF APPOINTED INSPECTORS~~

~~Appointed inspectors must comply with the CPSA policies for *Health & Safety, Workplace Violence*, and *Workplace Harassment*, and have the right to refuse work believed to be dangerous in accordance with the *Alberta Occupational Health & Safety Act*. Inspectors must not proceed with inspection if there is any threat to~~

Commented [KM4]: For the purpose of this policy, it is recommended that this information is removed and placed in an inspector safety protocol document.

~~personal safety, and any dangerous conditions or conflict of interests must be reported to the applicable authority for investigation.~~

~~7.~~5. APPROVAL

This policy requires approval by CPSA Council.

~~8.~~6. AUTHORITY DOCUMENTS

Health Professions Act (HPA) Part 3.1 [Inspections], Section 53.1 [Inspectors].

~~9.~~7. DOCUMENT HISTORY

VERSION NO.	Version Date	DESCRIPTION OF CHANGE
1	February 28, 2022	initiation
2	May 29, 2025	Review and update
APPROVAL	DATE	Signature
Council Motion #C14-22	March 17, 2022	
Council Motion #C15-25	May 29, 2025	

cpsa
COLLEGE OF PHYSICIANS & SURGEONS OF ALBERTA

Submission to:	**Council**

Meeting Date:	Submitted by:		
May 29, 2025	Patrick Etokudo, FAC Chair		
Agenda Item Title:	3.3 Finance & Audit Committee (FAC) Meeting Summary Report		
Action Requested:	☐ The following items require approval by Council See below for details of the recommendation.	☐ The following item(s) are of particular interest to Choose an item. Feedback is sought on this matter.	☒ The attached is for information only. No action is required.

AGENDA ITEM DETAILS

Recommendation (if applicable) :	n/a
Background:	The Finance & Audit Committee (FAC) met on May 8, 2025, and addressed the following issues:

1) Financial results December 31, 2024

FAC discussed a report from management regarding the budget variances for the 2024 financial results. For 2024, there is a year-to-date **excess of revenue over expenditure after development costs** of $5,320,000 compared to the budgeted income of $1,326,000 resulting in more income, or a positive variance, of $3,994,000.

	31-Dec-24	Budget	Variance	
Revenues	(43,786,000)	(41,606,000)	2,180,000	5%
Expenditures	38,437,000	40,280,000	1,843,000	5%
<Excess> deficiency of revenues over expenditures before other items	(5,349,000)	(1,326,000)	4,023,000	
Development Costs	29,000	0	29,000	
Sub-total after Development Costs	**(5,320,000)**	**(1,326,000)**	**(3,994,000)**	
Accreditation, net	(270,000)	(294,000)	(24,000)	8%

Sub-total	(5,590,000)	(1,620,000)	3,970,000	
Fair value changes in investments	(1,972,000)	0	1,972,000	
Healthier Albertan Grant expenses, net of income	1,077,000	0	(1,077,000)	
<Excess> deficiency of revenues over expenditures for the year	**(6,485,000)**	**(1,620,000)**	**4,865,000**	

The Accreditation Department is showing net income of $270,000 for the year.

The fair value (FV) changes in investments includes the realized gain/loss on disposal of investments and the unrealized gain at year end. The total FV change is revenue of $1,972,000.

The total excess of revenue over expenditures for the year is $6,485,000 primarily attributed to higher revenues and a gain on the fair value of investments for 2024.

A breakdown of the main contributors to the excess of revenues over expenditures of $5,349,000 for 2024 include the following variances to budget:

negative variance = <less revenues or more expenses>

Revenues

Physician annual fees	$1,158,000
Physician registration	277,000
Professional Corporation fees	132,000
Continuing competence fees (individual practice reviews)	<635,000>
Practice Readiness fees	<1,173,000>
Sponsorship Application	620,000
Recovery of Investigation & Hearings	131,000
Investment income	1,483,000
Other	187,000
	2,180,000

Expenses

Salaries & benefits	1,565,000
Bank and interest charges	<140,000>
Consulting	309,000
Honorariums	176,000
Healthier Albertan grant payments	<1,289,000>

Legal	<489,000>
Program activity	360,000
Printing, supplies & telephone	<154,000>
Office facilities	149,000
Other miscellaneous	188,000
	675,000

Summary of variances

Physician Annual fees $1,158,000 variance

- The actual revenue is above budget at year end.
- The net growth for 2024 is a 4.6% increase in the equivalent number of physicians paying the annual fee.

Continuing Competence <$635,000> variance

- Total revenue is lower than budgeted for 2024. Fees are charged for individual practice reviews (IPR).

Practice Readiness $1,173,000 variance

- Total revenue is lower than budget for 2024 due to lower numbers of assessments. A total of 45% fewer assessments were started in 2024 compared to budget.

Sponsorship Application $620,000

- Sponsorship of international medical graduates was expanded in 2024, allowing private individuals & organizations to sponsor family medicine physicians in their communities. This involves payment of an application fee of $3,500 per applicant, which was a new revenue stream in 2024. 187 applications were paid for in 2024, as compared to the 10 budgeted.

Investment Income $1,483,000

- The non-pension assets had significant returns in 2024 with CPSA's portfolio outperforming conservative expectations for the market.

Salaries and benefits $1,565,000 variance

- While salaries and benefits in 2024 are lower than budget due to delayed starts in positions. The total full-time equivalent at Dec 31, 2024 = 161.25

Legal <$489,000> variance

- The unfavorable variance in legal is partially due to additional legal costs relating to investigations addressing the backlog of complaint files, a higher number of higher complaints with increased complexity, and additional time for counsel spent assisting with

Hearing Tribunal decisions. External legal counsel was also engaged to write complaint dismissal letters.

Net Asset summary

The net assets (or accumulated surplus) at December 31, 2024, is $60 million. The breakdown between restricted and unrestricted is as follows:

Net Assets:	
Invested in equipment and leasehold improvements	$ 3,132,000
Internally restricted*	5,090,000
Unrestricted	52,086,000
Total	$60,309,000

*The internally restricted net assets consists of the following:

Healthier Albertan Grant	$3,295,000
Accreditation program	1,795,000
Total internally restricted	$5,090,000

The total unrestricted surplus as of December 31, 2024, of $52,086,000 represents approximately 105% of one year's gross operating expenses (based on 2025 budgeted total expenses of $49.6 million).

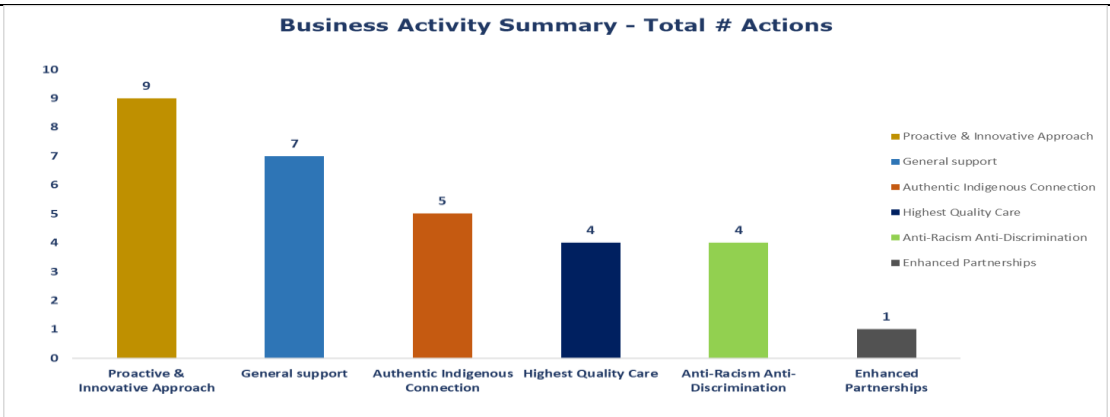
The higher level of surplus will allow CPSA to plan for shortfalls in future years' budgets and will allow us to draw down the unrestricted surplus over time as operating expenses increase while reserving funds for future specific projects.

CPSA's current policy on reserves targets the unrestricted surplus at 60% of one year's gross operating expenses. Management will bring a plan forward in its 2026 budget to address reserves.

3) Business Activity Update

The Finance and Audit Committee (FAC) received a report outlining the progress of the Business Activity Update.

In March 2025, the CPSA identified a total of 30 strategic actions: 15 carried over from 2024 and 15 new initiatives introduced as part of the Council approved 2025 Business Plan.



The FAC will continue to monitor progress through quarterly reviews to ensure alignment with strategic priorities and organizational goals.

Management is working to incorporate the business plan update into the CPSA Dashboard.

4) CPSA Risk Register

As part of CPSA's ongoing risk management process, the leadership team conducts quarterly reviews to assess both newly emerging and existing risks. Each identified risk is categorized under one of the following classifications:

- Financial
- Operational
- Strategic
- Compliance
- People

FAC received a report from management on the CPSA Risk Register for the Q1 2025 reporting. All identified risks were classified according to their respective risk types to facilitate a structured and thorough analysis. This approach enhances understanding of risk characteristics, ensures alignment of mitigation strategies, and supports informed decision-making.

FAC reviewed the process followed by management to identify and manage risks relating to the financial and operation management of CPSA and was satisfied with the process.

5) Defined Contribution Pension Plan Investment Options

FAC approved two new investments be included in the investment options for CPSA staff for the defined contribution pension plan.

In support of CPSA's commitment to diversity, equity and inclusion, the two new investment options adhere to Islamic law (Sharia). Sharia-compliant investments are financial products and strategies that adhere to Islamic law (Sharia), which prohibits certain types of income and mandates ethical and socially responsible investing.

A communication plan will be developed to inform staff of the new investment options.

6) Financial Results Q1 2025

As of March 31, 2025, there is a year-to-date operating income of $1,059,000 compared to the budgeted loss of $1,278,000 resulting in more income, or positive variance, of $2,337,000.

	31-Mar-25	Budget	Variance	
Revenues	($11,437,000)	($10,693,000)	$744,000	7.0%
Expenditures	10,378,000	11,971,000	1,593,000	13.3%
Operating Income	**(1,059,000)**	**1,278,000**	**2,337,000**	
Amortization	206,000	215,000	9,000	4.2%
Accreditation, net	5,000	296,000	291,000	98.3%
Sub-total	(848,000)	1,789,000	2,637,000	
Fair value changes in investments	(115,000)	(125,000)	(10,000)	
<Net Income>	($963,000)	$1,664,000	$2,627,000	

The fair value change in investments includes the realized gain/loss on disposal of investments and the unrealized gain to the end of the quarter. The total is revenue of $115,000.

The total net income to the end of the quarter is $963,000.

	7) Finance KPI FAC received a report on the finance KPI for Q1 2025. The KPI feed into the CPSA Dashboard for Council. The following changes are reflected in the reporting for 2025: - Net surplus margins are no longer reported for the accreditation, practice readiness program and the individual practice review programs. The 10% weighting that was previously applied to this category has been reallocated to Net Surplus Margin and Expenses are within +/- 5% of budgeted expenses. - The financial regulatory compliance will be reported on a quarterly basis. The target for remittance timeliness is 100%. Reporting will be either meeting target (i.e. no late filings) or not (i.e. one or more late filings).
Next Steps:	n/a
List of Attachments:	
none	

cpsa
COLLEGE OF PHYSICIANS & SURGEONS OF ALBERTA

Submission to:	**Council**

Meeting Date:	Submitted by:		
May 29, 2025	Bylaw Review Project Committee		
Agenda Item Title:	3.4 Consent Agenda - Ad Hoc Bylaw Review Project Committee Update		
Action Requested:	☐ The following items require approval by Choose an item. See below for details of the recommendation.	☐ The following item(s) are of particular interest to Choose an item. Feedback is sought on this matter.	☒ The attached is for information only. No action is required.
AGENDA ITEM DETAILS			
Recommendation (if applicable) :	N/A		
Background:	The following updates are being provided on Bylaw Review Project Committee: • Council approved the proposed bylaws at its March 2025 meeting, with an adoption date of May 1, 2025. The bylaws were published on the CPSA website on May 1, 2025, and are now publicly accessible. • Council also received comprehensive documentation outlining the discussions and rationale behind the proposed amendments, in April 2025. • The Committee met on May 16, 2025, to review and discuss the Accreditation section of the bylaws. • Given the remaining sections requiring review and availability of all Committee members—including time allotted for legal review—the bylaw review process will not be completed in September as originally scheduled. The revised timeline now targets completion in December 2025.		
Next Steps:	The Committee is scheduled to convene in June, July and September to review and discuss remaining sections of the bylaws.		
List of Attachments:			
N/A			

Council Chair Report
May 29, 2025

Tansi, Hello!

I would like to start by wishing council a greeting,

kisê-manitow; kinanâskomitinân kotak kîsikâw ê-miyiyâhk.
nipakosêyimonân anohc ta-miyiyâhk sîpêyihtamowin, kisêwâtisiwin, sipiyawêsiwin, mîna sâkihitowin.
sawêyimik kahkiyaw nitôtêminânak mîna niwâhkômâkaninânak.
Nanaskamon

Translation:
Creator: We thank you for allowing us another day.
We ask that today you bestow upon us patience, kindness, tolerance and love.
Bless all our friends and relatives.
Thank you

First of all, it has been a busy start to the new year. Thank you to council and CPSA staff for all the work that has been done in the last couple of months. I am pleased to announce and welcome our new register/CEO Dr. Colleen Forestier who will be joining CPSA in her new role as the Registrar and CEO. I look forward to working with her in my role as Chair.

I want to highlight a couple of items; we continue to work on our council culture and reflect routinely at our board meetings. We recognize the importance of upholding our council culture to ensure we are accountable to ourselves and to each other. We are fortunate to have a symbol of our council culture in the form of a coin which is a reminder to ourselves that we as a council strive to work collaboratively, mindfully and respectfully.

Some of the other work we have been continuing is the nomination process which you would have seen on the CPSA website and the Messenger. There has been thoughtful attention to develop the skills matrix and revise the nomination process. Hopefully the new process will encourage more regulated members to apply for council positions.

I had the pleasure to attend the planning day for AARADAC and witness the progress and direction the committee is taking. The group is insightful and passionate about the antiracism/antidiscrimination work they are embarking on. This is an area that is evolving in health care, and it is important work that needs to be continued. I chair the Indigenous Advisory circle; we welcomed one of our council members Rhonda Laboucan to the Circle. We are pleased to have her experience and knowledge to add to the work of reconciliation.

Lastly, as CPSA continues to work on the registration process and look at innovative ways to attract physicians. It is great to witness CPSA looking at other ways to attract physicians to Alberta to care for patients, this work will be continuing throughout the year. I want to end by acknowledging World Family Doctor Day (WFDD) on Monday, May 19th declared by the World

Organization of Family Doctors (WONCA). As a fellow family doctor, I see the dedication and care family physicians provide and thank them for their work.

Thank you, it is an honor to be your chair,
Dr. Nicole Cardinal, Saddle Lake Cree nation

Meetings:

March 11: AARADAC
March 18-19: Search and selection committee for Register/CEO
April 1: Special council meeting, register/CEO
April 8: Meeting with Scott, Sondra/Jason
April 15: AARADAC workshop
April 16: Governance committee meeting
April 22: Executive committee meeting
April 29: Indigenous Advisory Circle meeting

May 2: Meeting with Scott
May 6: AARADAC meeting
May 8: Finance and audit committee, meeting with Sondra/Jason/Michael
May 9: Special executive committee meeting
May 12: CPSA appeal
May 15: CPSA/AMA joint committee meeting
May 16: Bylaws meeting
May 29-30th: CPSA Council meeting

COLLEGE OF PHYSICIANS
& SURGEONS OF ALBERTA

To: Scott McLeod, Registrar

From: Jeremy Beach, Assistant Registrar; Fizza Gilani, Director

Date: May 9, 2025

Topic: Accreditation Registrar's Report Q1 2025: Program Highlights Across Strategic Directions

Accreditation continues to make significant progress across all programs, aligning closely with CPSA's strategic directions.

Strategic Direction: Highest Quality Care
A typical year involves well over 100 Accreditation visits to both public and private facilities to review and reinforce information in desk audits. Assessment activities are on track across all diagnostic and clinical programs, with new assessors recruited and trained in Pulmonary Function Testing, Sleep Medicine, PAPT, and Neurodiagnostics.

The ongoing process of development and updating of Accreditation Standards also continues. The addition of a new Accreditation Standards Coordinator and departmental reorganization to create an Accreditation Standards Program area this year is proving beneficial in streamlining standards related initiatives. In 2024 there were new standards implemented for diagnostic imaging, as well as new standards for bariatric surgery. Hyperbaric oxygen treatment standards were also approved later in the year for introduction in 2025. In 2025 work will be progressing on standards for non-hospital surgical facilities among others. Accreditation has initiated a project for a structured review of the Neurodiagnostics Standards with support from REVU.

One of the bigger things to impact the world of CPSA accreditation in 2024 was the introduction of accreditation for psychedelic assisted psychotherapy (PAPT) under the Mental Health Services Protection Regulation. In 2025 CPSA established a new PAPT Advisory Committee to guide the Medical Facilities Accreditation Committee (MFAC) in this area, and a few facilities are already accredited and accepting patients under these new standards. This area is rapidly evolving, requiring CPSA to work closely with other stakeholders and to be adaptable in its approach.

As an accreditation body CPSA also looks to be accredited itself. Several of our programs have achieved accreditation with ISQua (the International Society for Quality in Healthcare) and work to bring the other programs similar recognition is underway. ISQua recently introduced a 6th version of its standards which will also require updating for currently recognized programs.

Strategic Direction: Enhanced Partnerships
Collaboration continues with our western Canadian partners, a first meeting of the new Partnership Forum of the Western Canadian Accreditation Alliance occurring on April 8th . The Partnership forum is geared to improve regional coordination and resource sharing among CPSSK, CPSM and CPSA. Locally, we continue to strengthen collaboration with Alberta Health, AHS, AMA (CII/CPAR), AMHA. This includes monthly meetings with AMHA for PAPT program alignment, integrated DI-Lab assessments in rural sites, and supporting

expanded data integration into Netcare among accredited facilities. The Program met with Indigenous Services Canada to share knowledge of CPSA's accreditation programs and processes.

Strategic Direction: Proactive and Innovative Approach
Our team continues to refine internal processes, such as streamlining NHSF reporting and revising program guidance documentation. Accreditation assessments are currently paper-based and largely manual. Planning and readiness work continues for the multi-year Digital Transformation Initiative to move to an end-to-end software solution with reporting capabilities that enable continuous quality improvement, both internally for CPSA and externally for accredited facilities.

Strategic Direction: Authentic Indigenous Connections

Increased access to treatments remains central to much of Accreditation's work. We are engaged with a few groups to try to assist in the planning and development of accredited facilities on Reserves.

Strategic Direction: Anti-Racism and Anti-Discrimination

An external review is underway to evaluate accreditation standards through an anti-racism and anti-discrimination lens. The project will culminate into recommendations for enhancing accreditation standards.

Communications Updates:

- Supporting a revamp of the Registration section of the website, simplifying content and helping physicians get the information they need more efficiently.
- Supporting numerous communications plans to accompany Registration program changes.
- Collecting feedback and finalizing CPSA's 2024 Annual Report.
- Working on a special edition of *Messenger* to highlight Indigenous voices for June—National Indigenous History Month.
- Adding hearings and appeals information to website for patient audience.
- Continued support for Government Relations portfolio (briefing notes, bi-weekly letters to Minister).
- Updating media analytics report based on survey feedback. As of May 13, we have sent 12 media releases and answered 30 media inquiries for 2025.
- Developing TPP 2024-25 Annual Report.
- Supported the announcement of the new Registrar & CEO, Dr. Colleen Forestier.
- Helped launch the new Council Elections process to support filling four regulated member vacancies.
- Celebrated our 25th issue of *the Pulse*, CPSA's internal, bi-monthly newsletter in January.
- Welcomed a new (1-year LTC) Social Media & Digital Experience Coordinator in March to support our awareness efforts and raising our profile/engagement through our digital platforms.

Corporate Services Department

Payroll

- Ensures all CPSA employees are paid.
- Administers CPSA's benefits programs.
- Responds to payroll & benefits related inquiries from employees

Accounting

- Invoicing & receivables
- Payables & payments
- Budgeting & forecasting
- Financial Reporting

Administration

- Business Planning
- Office Support
- Office Maintenance
- Office Design

Risk Management

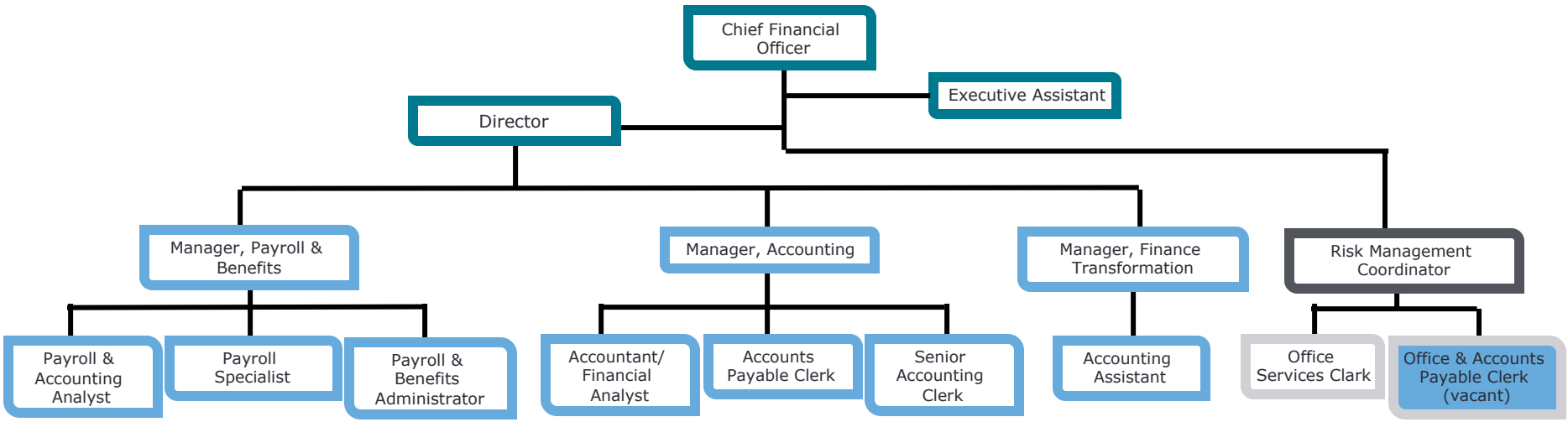
- Risk Management
- Contract Management
- Insurance

Department Success

- Implemented new payroll system & continuing to add electronic workflows.
- Successfully completed a clean financial audit.
- Introduced electronic workflow for corporate credit card expenses.
- Bringing CPSA into compliance with office space accessibility.

Challenges

- Staffing within the department.
- New building codes to address office renovations.
- Paying vendors in a timely manner with an increase in payables volume.



cpsa
COLLEGE OF PHYSICIANS
& SURGEONS OF ALBERTA

CPSA Department Overviews

Registrar Report

Last revised: JANUARY 2025

Contents

Accreditation

Department narrative

The Accreditation Department at CPSA functions under the Health Professions Act Schedule 21, section 8 and Council Bylaws related to accreditation of medical facilities. The HPA give the Medical Facilities Accreditation Committee (MFAC) the authority for accrediting diagnostic and treatment facilities in Alberta except for those directly operated by government or a regional health authority. The Accreditation Department has operational responsibilities to inspect facilities for the purposes of accreditation and support the development and maintenance of accreditation standards developed by MFAC and its advisory committees and as approved by Council. CPSA Accreditation is an authorized Radiation Health Agency (ARHA) under the Occupational Health and Safety Act. As an ARHA, we also ensure radiation equipment (x-ray, Particle accelerators and class 3B and 4 lasers) installed or operated within private and public medical facilities are duly inspected and up to standard.

Overseen by the Accreditation Assistant Registrar, Dr. Jeremy Beach, and Director, Fizza Gilani, the department is organized into five program units which together cover ten functional domains: Diagnostic Imaging & Radiation Equipment Program; Diagnostic Lab & Neurodiagnostics Program; Pulmonary function testing, Sleep Medicine Diagnostics & Psychedelic Assisted Psychotherapy Program; Non-Hospital Surgical Facilities Program and, the recently added, Accreditation Standards Program. The department seeks to ensure safe, high-quality services in accredited facilities for all.

The Accreditation team works with MFAC and its expert advisory committees to develop and apply standards which help further cultures of quality improvement and learning systems to maintain patient safety. The department assess facilities when they first open or anytime they renovate, move or add a new service. Facilities are then re-evaluated every four years or sooner if a complaint or concern is raised. New or innovative services offered in non-hospital settings are also often included in the accreditation process.

The College of Physicians & Surgeons of Alberta (CPSA)’s accreditation processes:

- assist facilities with a process of ensuring accuracy and reliability of services
- develop, maintain and enforce accreditation standards for Prescribed Health Services
- assess facility compliance to accreditation standards for quality assurance
- evaluate a facility’s quality system’s ability to identify and mitigate risks to patients and/or staff
- encourage and facilitate peer-review for continuing competency and development
- create educational and knowledge translation opportunities through accreditation
- promote and encourage dialogue amongst stakeholders on best practices and best ways to incorporate them into the workflow
- support quality improvement by identifying deficiencies and guiding facilities to ensure patient and/or staff safety
- maintain a listing of accredited facilities including scope of service/levels
- seek to promote uniformity in service provision and care quality for diverse populations and geographies across the province, where variations in practice may impact health equity or be otherwise harmful
- give formal recognition of a facility’s provision of quality medical service

Analytics, Innovation & Research (AIR)

Department Narrative

CPSA is the only medical regulator in Canada with an Analytics, Innovation and Research (AIR) team. Comprised of our Physician Prescribing Practices (PPP) program, Alberta's Tracked Prescription Program (TPP Alberta) and the Research & Evaluation Unit (REVU), AIR is dedicated to using cutting edge technologies, data-based research and analytics tools to facilitate evidence-based decisions, drive innovation and enhance patient care.

PPP supports patient-centered care, collaboration and practice improvement. Their delivery of tools like MD Snapshot-Prescribing (which provides prescribers with quarterly data on their opioid, benzodiazepine/z-drug and antibiotic prescribing) gives regulated members the information they need to increase prescribing awareness, make evidence-based prescribing decisions and identify opportunities to improve the care they provide. In 2024, PPP introduced improvements to MD Snapshot-Prescribing and the team also engaged several Alberta physicians in an MD Snapshot Working Group to identify how CPSA can improve this resource and ensure it's useful to physicians and their prescribing practice.

Applying quantitative, qualitative and mixed-method approaches to research, REVU focuses on evaluating the effectiveness of existing CPSA programs, supports the development of new initiatives and supports factual, evidence-based medical regulation.

The REVU team presents original research regularly at several scientific and regulatory conferences and meetings, across Canada and internationally, on topics ranging from tapering and discontinuation of opioids, to factors that influence physician performance, to physician burnout. REVU also collaborates with physicians, researchers, policymakers and data analysts at Alberta Health, the University of Alberta, the University of Calgary, the Medical Council of Canada and other regulators in Canada, on projects and initiatives aiming to improve physician performance and overall evidence-based regulatory excellence. Based on current abstracts submitted, REVU anticipates between three and five publications in various medical journals in 2025.

REVU facilitated several focus groups with physicians and Albertans in 2024. They gathered input and perspectives on antibiotic prescribing, antimicrobial resistance, quality care, and CPSA's complaints process. REVU presented original research in academic research conferences and public forums across Canada and internationally and, together with the work done on our Continuing Competence department, received the 2024 David Swankin Continuing Competence Award from the International Society for the Advancement of Continuing Competence (ISAAC). This award given to organizations whose programs contribute to research, development and improvement in the evolving practices of continuing competence.

AIR also focuses on Innovation strategies and opportunities throughout CPSA. Whether through larger scale interventions like our Machine Learning pilot in PPP to championing smaller scale innovations within each department.

Communications

Department Narrative

The Communications team acts as strategic partners for all CPSA departments. Communications works closely with different groups across the organization to ensure information is clear, accessible and reaches the right audience through the right communications channel at the right time. As important as it is for CPSA to be doing the right things to protect the public, it is equally important for CPSA to be seen doing the right things by the public, government, our regulated members, and key partners. The public, government, and partners experience CPSA's work and form their opinions about the organization largely based on the work of the Communications team, or work supported by the Communications team. In the absence of our own messaging, external audiences are left to base their opinions about us on narratives and perceptions created by others. Internally, Communications plays a significant role in supporting the delivery of internal communications initiatives and messages, ultimately impacting the culture and engagement of/for CPSA team members.

Communications-specific Initiatives

In addition to supporting other departments, the Communications team is responsible for the following initiatives:

- Media relations – handling media inquiries, media releases, analytics tracking, daily media clippings, public relations support
- CPSA Annual Report - collecting and distributing the legislatively required information along with supplemental content to tell the story of CPSA and our work over the last year
- Messenger - plan, collect content and distribute monthly newsletter
- Communications support for Government Relations work – CPSA awareness campaigns, bi-weekly letter to the Minister's office, briefing notes for government
- Secretariat support for Indigenous Advisory Circle and Path to Truth & Reconciliation - organizing meeting dates, drafting agenda, preparing 'what we heard' documents, following up on action items, liaising with consultants
- Website updates and project management - general page/content updates, project support for initiatives like training modules in MyCPSA, website analytics
- Commendations - receiving and preparing commendations for Quest & Doc
- Social media - planning and drafting content to support CPSA's work, monitoring social landscape, social media analytics
- Internal communications support - weekly messages, the Pulse, surveys, initiative messaging, team meetings
- Presentation and sponsorship support - organizing and preparing presentations for various external speaking engagements, organizing sponsorship opportunities and materials
- Albertan engagement strategy - facilitate research, understand and execute ways to engage with the people we protect
- Physician engagement strategy – facilitate research, understand and execute ways to engage with the profession

Continuing Competence

Department Narrative

With Competence Committee guidance, delegated authority of the *Health Professions Act* Part 3 and the *Continuing Competence* Standard of Practice, our team operates mandated programs for regulated members to maintain their competence and enhance professional services throughout their careers. When required, the team supports members through assessment and remediation processes.

CPSA Continuing Competence Program is comprised of:

General Assessment

- Regulated members must participate in Physician Practice Improvement Program (PPIP). Over a continuous five-year cycle, each regulated member must complete at least one quality improvement activity using practice-driven data, one activity measuring adherence to CPSA Standards of Practice, and one personal development activity measuring their role beyond medical knowledge and skills.
- All regulated members self-report their PPIP activities on their annual renewal form (RIF). We use this data to randomly select a cohort for auditing.
- Those who self-report not completing the CPSA Standards of Practice activity on their own are selected to participate in Group Practice Review (GPR). We engage 50 group practices in GPR annually.
- Those who self-report not completing the personal development activity on their own are selected to participate in MCC360, a multisource feedback tool measuring their role as collaborator, professional and communicator. We engage 500 regulated members in MCC360 annually.

Competence Assessment

- Based on REVU scores, the Physician Assessment & Feedback (PAF) program annually assesses 200 regulated members whose scores point to a high risk of less than acceptable practice.
- Regulated members with poor PAF assessment results are referred to Individual Practice Review (IPR) for further in-depth intervention and remediation. The IPR program also receives referrals from Complaint Director, Hearing Tribunal, Physician Prescribing and Health Monitoring programs. There are about 40 referrals a year to IPR.
- We are piloting the application of competence assessment to regulated members who are from outside of Canada and eligible for registration through the accelerated registration route. After successful completion of the Supervised Practice Assessment (SPA), this group of regulated members participate in two competence assessments, one year apart, to ensure that they are providing an appropriate standard of care.
- Each year, the Infection Prevention & Control team engages 150 community medical clinics and medical device reprocessing practices. When deemed necessary, IPAC also conducts ad hoc inspections under the authority of Part 3.1 of the Health Professions Act (HPA).

- We introduced community medical clinic registration at CPSA. CPSA is then aware of where our regulated members are practicing.
- Regulated members who have reported health conditions impacting safe care are reviewed and monitored to ensure fitness to practice. Our Health & Practice Conditions Monitoring (HPCM) team collaborates with external Independent Medical Evaluators (IME) who assess fitness to practice. Based on IME recommendations, CPSA considers what conditions may be required on the member's practice. We average about 100 regulated member reports annually.
- HPCM also monitors regulated members' practice to ensure adherence to permit conditions imposed by other processes (including Part 2, Part 3 and Part 4 of the HPA). The team also oversees the chaperone program; 351 conditions are currently monitored with 21 regulated members participating in chaperone program.

Continuing Professional Development (CPD)

- We receive information regarding regulated members compliance with mandatory participation in CPD programs, Mainpro+ or Maintenance of Certification. We intervene using competence assessment and remediation with regulated members who are not compliant.

Corporate Services

Department Narrative

The Corporate Services department provides oversight for finance, payroll, risk management, infrastructure and office support. The department also provides support for CPSA's Finance & Audit Committee (FAC) and the CPSA's Healthier Albertan Grant.

The **finance team** coordinates the business planning, budgeting, forecasting and financial reporting for CPSA activity. The finance team ensures our vendors are paid and deposits are recorded in a timely and accurate manner and arranges payment plans and follows up on deliquent payments.

Financial reports are prepared quarterly, reveiwed by leadership and presented to the FAC. The budget is prepared annually for presentaion to FAC and approval of Council. CPSA's financial results are audited annually through the services of independent audit firm, PWC. Annual audited statements are prepared by the finance team and presented to FAC and Council for approval.

The **payroll team** processes biweekly payroll for the CPSA team and administers employee benefits for eligible members. Additionally, the team administers four pension plans: a registered defined benefit plan (closed to new applicants and additional credited service), a supplemental defined benefit employee retirement plan (SERP) for legacy employees, a registered defined contribution plan and a notional defined contribution supplemental employee retirement plan.

The **admin team** leads risk management, contract management and insurance needs for CPSA and oversees office support, maintenance and office planning and design.

Hearings Directors Office

Department Narrative

The Hearings Director's Office (HDO) is responsible for managing hearings, the complaint review committee process, and appeals to Council pursuant to the *Health Professions Act*. The HDO is also responsible for the recruitment of physician members to the Complaint Review Committee (CRC) and Hearing Tribunal (HT) roster. The HDO organizes and delivers training for all CRC and HT members – physicians and public members. We also support the learning of Council members for their appeal work.

In 2024, the Hearings Director's office coordinated 34 meetings for the Complaint Review Committee (CRC); at these meetings, the CRC reviewed 134 files. In addition, there were 97 new requests for review received in 2024.

There were 22 hearings held in 2024. Also, the Hearings Director's office coordinated two meetings for a review panel of CPSA Council in 2024. Both were appeals regarding Hearing Tribunal decisions.

The Hearings Director's office held three significant opportunities for comprehensive professional development for CRC/Hearing Tribunal members (as well as Council members) in 2024. The annual orientation day was held in April; an anti-racism session was held in September and a decision-writing workshop in November. We onboarded 5 new regulated members to our panels and welcomed 16 new public members.

Office of the Registrar (OTR)

Department Narrative

The OTR provides direct support to the Registrar & CEO, acting as a central coordinating body for CPSA. We assist in the provision of general oversight of departments in achieving CPSA's mandate and executing legislative requirements. The OTR leads the organizational governance and policy framework, establishment of strategic directions, and coordination of top-level stakeholder relationships.

The OTR is also the point of primary support and planning for Council and its and Priority Committees. We are often the first step in actioning priorities and projects set out by Council. Presently, the OTR directly leads two strategic directions set out in the 2022-2026 Strategic Plan: Authentic Indigenous Connections and Anti-Racism & Anti-Discrimination. We are presently also engaged in a fulsome review of CPSA bylaws and supporting the search for a new Registrar/CEO.

Information Management

Department Narrative

Records Management and Privacy play a vital role in ensuring the protection, organization, and categorization of CPSA's information assets. Their responsibilities encompass handling external information requests from individuals and organizations, as well as managing responses to privacy breaches in compliance with regulatory and organizational standards.

The **Analysis and Development Team** supports a portfolio of approximately 40 custom-built applications that integrate seamlessly across the organization and with external partners such as Alberta Health Services, the Medical Council of Canada, and the College of Pharmacy. Notable applications include the Annual Registration (RIF) Online Member Portal and the Online Application Tracking System (OATS). These bespoke solutions are tailored to CPSA's unique requirements, given the complexity and volume of data exchanges internally and externally. The need for high levels of customization often precludes the use of off-the-shelf software, making in-house development essential to meet the organization's operational needs.

The **Systems and Desktop Support Team** oversees the management of approximately 300 laptops and workstations, along with around 100 servers, ensuring the reliability and efficiency of technology infrastructure across the organization. In addition, the team manages offsite backups and hosting services through Amazon Web Services (AWS) and Microsoft. These offsite solutions enable robust disaster recovery capabilities and enhance the security of applications with external access.

The **IM Department** also coordinates software and hardware evaluations, research, and purchasing decisions to maintain a comprehensive view of technology spending across the CPSA. This centralized approach helps minimize technical debt—defined by Gartner as "work that is 'owed' to an IT system when teams 'borrow' against long-term quality by making short-term sacrifices, taking shortcuts, or using workarounds to meet delivery deadlines." By carefully managing these processes, the department ensures sustainable and cost-effective technology adoption.

The entire Information Management team is committed to delivering innovative and reliable solutions for the creation, storage, control, and secure transportation of information within the CPSA. Their dedication and expertise drive the organization's ability to achieve its mission effectively and securely.

People & Culture (P&C)

Department Narrative

The People & Culture team supports the lifecycle of our employees from their initial application through to their departure from CPSA. This begins with a comprehensive, inclusive recruitment process designed to mitigate hiring biases. Once a preferred candidate is chosen by the hiring leader, we have an in-depth onboarding program designed to acquaint team members with all of CPSA's functions. We support leaders with their performance conversations throughout the year, focusing on formalized annual reviews for all team members at yearend.

We create and maintain a Team Member Code of Ethics, which acts as a framework for all our 40+ employment policies, procedures, and guidelines. We work in close partnership with the Payroll team to administer our total compensation reviews, which assess our benefits program and salary rates.

P&C supports our culture through team experience activities and engagement surveys to assess our progress. We offer training programs such as Crucial Conversations, CPSA 101, and annual Truth & Reconciliation learning opportunities.

Customer Experience

Customer Experience (CX) is a team of four that manages the vast majority of CPSA's external inquiries. In 2024, the CX Hub received and resolved over 22,000 inquiries via phone, email, or chat. The team has created a comprehensive Knowledge Bank, which enables them to resolve 97% of inquiries within the CX Hub.

CX also identifies opportunities and creates process improvements to enhance the customer experience across CPSA. Some recent examples include their contributions to improving the 2024 annual renewal process, resulting in 49% of survey responding physicians and physician assistants saying the process was better than previous years, and identifying opportunities for improved communications for complainants following a submission through the new online complaints center.

Given the highly unpredictable nature of inquiries that come into the CX Hub, in 2024, the team took a special topics workshop focused on identifying and responding to inquiries where the customer poses a risk of violence towards themselves or others. CPSA's Professional Conduct and Hearings teams, as well as a member of the Communications team, were also able to participate in this important training.

Professional Conduct

Department Narrative

A complaint is a legislated process under Alberta's *Health Professions Act*, so health regulators like CPSA can address serious issues and practice concerns with healthcare professionals. Many physicians will receive a complaint at some point in their careers and while this can undoubtedly be a stressful experience, the privilege of profession-led regulation comes with a responsibility to hold ourselves accountable to safe, quality care.

The Professional Conduct department has a team of 35. The workload is significant, complex and involves extensive daily communications with the public, law firms, regulated members, health agencies. The work is performed under tight and legislated timelines. The department handles a high volume of sensitive material that moves within and to parties outside of CPSA as part of our processes. The volume and complexity of handling and assessing this information has been increasing with time.

The department is designed around four work streams: Intake, Investigations, Resolutions, and Hearing/Legal Referral. Each work stream has oversight by a Program Manager who also functions as an Associate Complaints Director (ACD).

CPSA's Professional Conduct team works hard to ensure our complaints process is fair, timely and based on the facts of each individual case. The possible outcomes of a complaint include:

- The complaint may be dismissed if evidence does not support the complaint or there is insufficient evidence to proceed.
- With consent from the complainant, we may work with the physician to make necessary practice changes.
- The complaint may progress to a formal hearing, which can result in disciplinary action against the physician.

Only ~2% of complaints result in a formal disciplinary hearing— most complaints provide the regulated member with opportunities for practice improvement.
The department also utilizes external investigation contractors and external legal counsel to support out objective.

Ongoing Activities

On an annual basis:

1. Respond to 1200 initial contacts which may or may not result in formalized complaints
2. Process 1000-1600 formalized complaints
3. Undertake 160 – 200 formal investigations
4. Refer ~2% of complaints to formal hearing when required, some of these referrals do not proceed to the hearing but are concluded prior to moving to the Hearing Director's office for scheduling.

Registration

Department narrative

Please find below an overview of the CPSA Registration Department's core functions:

1. Registrations
    a. Independent practice – General/Provisional Registration
    b. Non-Clinical Register
    c. Learners – Postgraduates and students
    d. Limited Register – Associate Physicians (Clinical Assistants)
    e. Physician Assistants
    f. Courtesy Register
    g. Emergency
2. Assessments
    a. Provisional Register Assessments
        i. Preliminary Clinical Assessment (PCA)
        ii. Supervised Practice Assessment (SPA)
    b. Summative Assessments
    c. Change of scope
    d. Return to practice
3. Certificates of Professional Conduct
4. Annual Renewal
    a. Independent
    b. Postgraduate
    c. Students
5. Data Listings
6. Professional Corporations
7. Change requests
    a. Member updates

COLLEGE OF PHYSICIANS & SURGEONS OF ALBERTA

Registrar Report

To: CPSA Council
From: Scott McLeod
Date: May 29th, 2025

Introduction

As my time as Registrar nears its end, I'm finding myself reflective of the many things that have happened over the past 8 years. I attended the May 2017 Council meeting as a guest, so that means this is my 33rd regularly scheduled Council meeting. During that first meeting one of the Councillors asked what I planned to accomplish in my first 100 days. I suspect my answer was less than satisfying, but the reality is that my first 100 days were a time of listening and learning. Now, I find that after 8 years in the job, I'm still listening and learning. There is no end to this requirement as we try to live in, manage and provide leadership in this complex world.

I've learned many things over the past eight years. We have taken on some very challenging issues that I would have never expected. For the most part we have pulled through them stronger than when we went into them. The COVID pandemic was obviously the biggest challenge, but we've had many others as well.

I've been working in healthcare for over 35 years now and most of that I've had some form of leadership role. I've made lots of mistakes along the way and I've learned from those mistakes as well as from the mentorship I've received from others around me. The reality is that leadership in healthcare is getting harder by the day and the challenges we are facing are never ending.

We live in a Volatile, Complex, Uncertain and Ambiguous (VUCA) world and what I've learned over the years is that there are no simple solutions to the complex problems we deal with. I've also become more comfortable with the reality that we can't solve these problems if we continue to see the world through the filters that we all live with. To lead in a complex world, we must open our eyes to the vast world of opportunities that exist.

Einstein is quoted as saying: "No problem can be solved from the same level of consciousness that created it."

Therefore, if we are going to find a better future for healthcare, we all need to expand our consciousness and challenge the way we see the world. This requires leaders to spend more time being curious about those around us and less time judging others for their beliefs or perspective. Even if we don't agree with

someone's point of view there is value in doing our best to at least be curious enough to understand it.

In my training to become a leadership coach, we are reminded that human behaviour is driven far more by emotion than rational thought. Our emotions can be valuable in opening our view of the world but they can also shut us down to future opportunities.

Over the past several weeks several of us in the Office of the Registrar have been talking about Semantic Divergence. This is when two people say the same word, but have it mean something completely different. This can in fact lead to significant division between those people simply because they interpret a word differently. We have been thinking about this because we want to ensure we understand what people are telling us and we want to ensure we are clear in our meaning.

For example:

Freedom	Freedom from oppression (e.g., systemic racism, poverty)	Freedom from government interference (e.g., taxes, regulations)
Violence	Includes systemic harm (e.g., poverty, exclusion, discrimination)	Physical harm or property damage
Justice	Social or restorative justice (equity of outcomes)	Legal justice (fair application of law regardless of group identity)
Gender	Fluid, socially constructed identities	Fixed biological categories (male/female based on biology)
Privilege	Unseen advantages based on race, gender, etc	Personal hard work invalidated; insult to personal achievements

Concerns about CPSA's position on freedom of speech is similar to this concept. CPSA recently completed a survey of the profession to better understand how our guidance was being perceived. The results of that survey showed that the profession had many mixed feelings about what the intent of our communication was and the impact it had on many of them. Some felt it was perfectly clear and appropriate whereas others felt it was poorly worked and overly restrictive. As a result, we are in the process of clarifying that document to better capture the intent.

Over these past 8 years, curiosity has been a tool that I have come to appreciate. Even during some of the most challenging times, I've done my best to step back from my own emotional response to a situation and tried to be curious about where the other person was coming from and what they meant by the words they have

used. Universally, that curiosity has enabled me to better understand where there may be shared goals and potential solution sets.

We're at a very difficult time in healthcare. Not just here in Alberta, but across Canada and around the world. There are no simple solutions to the complex problems that exist in healthcare. Envisioning a better future will require all of us to step out of our comfort zone and be curious about what other thoughts and opportunities exist for us.

I believe that as we move forward as leaders in healthcare, we're not going to be able to create a better future if we don't embrace curiosity as a key component of our own leadership development.

1. CPSA Organizational Updates

a. Registration updates

As every jurisdiction in Canada is striving to streamline their registration processes and make them more attractive to internationally trained physicians and Canadian graduates, the landscape has become very different from where it was 2 years ago. Decisions need to be made quickly to remain on top of things and all new innovative ideas need to be considered. The following is an update on some of the things we have been doing to keep on top of things.

i. Interprovincial mobility – These past few months have reignited the discussion of interprovincial professional mobility. We know that our process to register a physician takes a matter of hours from the time we get a complete application, but the time it takes to complete the application may be a much greater limitation. Therefore, we looked deeper into what our requirements were and looked for ways to make it easier. Some of these are listed below:

   a. Letters of reference – For any new applicant for registration, CPSA required 3 letters of reference as part of our assessment of good character and reputation. When looking back over the past several years we could find no case where we refused an application based on a reference letter. These are cumbersome and slow to collect plus they are a significant amount of work for our staff. We have therefore removed this requirement.

   b. Certificate of Professional Conduct – This is an important document that we must see before we allow someone to provide care in Alberta. Unfortunately, it too can be slow to receive. CPSA has been working

with the other medical regulators and MCC to develop the National Register of Physicians (NRP). The register will have a flag system in it that will identify if a physician is in good standing. If their flag is green, there will be no requirement for a certificate of professional conduct thus also accelerating the application process.

c. Criminal Records Checks – These are mandated in the HPA and there is no option to remove them, however we are looking at granting a licence with a restriction that says they must provide the CRC within 60 days. From our experience since introducing the CRC, we have not denied a physician registration as a result of their CRC therefore we believe this is also a low risk.

As a result of these changes, the "red tape" related to applying for a licence in Alberta will be dramatically reduced while we still maintain our regulatory safeguards.

A discussion on a national licence will be addressed later in my report.

ii. US Trained Doctors of Osteopathy

CPSA already regulates a handful of Doctors of Osteopathy (DO) and we already have a route to licensure if they have completed the allopathic board certification process. A recent review of the osteopathic certification process determined that both routes are now deemed equivalent in the United States and therefore we will now be opening a route to licensure for osteopathic certification of competence. This will be discussed more during the Registration update.

iii. Sponsorship

Sponsorship continues to expand the available positions in Alberta that internationally trained physicians are eligible for. As of May 7th, we had 252 approved sponsors for 392 positions. Of those 392 positions, 144 have already been filled.

iv. Retaining Alberta Graduates

Alberta invests significant amounts of money into the training and education of physicians and CPSA would like us to retain those physicians who are completing their training. One option Council will be asked to vote on will be waving the registration and licence fees for new graduates. We are asking for this to take place this year for physicians completing their postgraduate training in Alberta. This will be a savings of $2800.00 for those physicians.

We will then put forward a proposal to keep that in place for the 2026 and 2027 budget years as part of the normal business planning process.

We have no evidence that this will change people's minds about where they want to practice, however, as requested by CPSA's Finance and Audit Committee, we will be looking at options for better understanding those decision-making criteria through some form of questionnaire. In the meantime, CPSA staff and the Finance and Audit Committee believe this is a good thing to do and we have the resources to accommodate it.

b. Departmental updates

Since there has been a relatively significant change over of Council members this past year and there will be several changes of elected members in the coming year, we will be dedicating part of this report to providing a brief update on what the different departments are responsible for and some of the things they have been working on. We are doing this instead of getting updates from everyone at the end of the year.

Linked is a document titled CPSA Department Overviews that we have used during the Council orientation sessions. It summarizes each department's roles and responsibilities. You can use this as a reference if you ever want to know more about each department.

In addition to that, for each of the council meetings over the next year we have asked three departments per meeting to provide a short report. For now we have not asked for any format and left it up to them to decide how best to provide an update. This meeting Communications, Corporate Services and Accreditation have all submitted reports. You will see they are all very different and as we determine which ones are more effective, we will eventually standardize the approach.

c. Commend a physician

In the early days of my time as the Registrar, I received an email from an Albertan who wanted to commend their physician for the amazing work they do. They came to our website and found there was no way to actually do that. They could file a complaint, but they couldn't highlight the positive, so they wrote to me directly.

Since that time, we have adapted and now we enable people to write in and thank their doctors and show the appreciation they have for the work they do. We added a link to our website a few years ago and recently we even added a link to where physicians can appreciate a colleague.

In 2024 we had 123 Albertans write in to commend their physician and in 2025 so far, we have received 43 commendations.

The following are two examples of the commendation we receive:

"Dr. XXXX is an incredibly compassionate physician, who works hard to keep on the front of medical information. She always treats me with dignity, kindness and respect. Her knowledge translation skills are impeccable, digesting medical terminology and vital information into patient friendly terms. Given how busy and hard working she is, she always makes it clear that she has the time to talk to you about your health and wants to work with you to meet your goals. Her calm and friendly demeanor always makes me feel welcome and comfortable even in the most sensitive of subjects. I feel so fortunate to have found her, and hope that she knows how much of a positive impact she has on her patients lives."

"Dr. XXXX should be a role model for young medical students. He is very kind and personable with his patients. No matter what the day has been like, he enters the room with a smile, introduces himself and greets the patient by name. He asks how you are feeling and actually listens to your answer. I was there to have a pre-visit with him before having a procedure done by him. He thoroughly outlined the procedure and what he would be looking for and also told me when the results would be available to my GP. The day of the procedure he entered the operating room with that same friendly smile and greeting, and I felt totally at ease. The way he treats his patients and his office staff is exemplary. He must be extraordinarily busy but he never shows to his patients, always giving them time to express any fears they may have about the up-coming surgery or procedure."

2. Committee Reports

a. Competence Committee

Please see the linked Competence Committee report

b. Medical Facilities Accreditation Committee (MFAC)

Please see the linked MFAC Report. There will be a discussion later in the meeting about the approval of the DI Accreditation Standards.

3. Provincial Update

a. Meetings with Ministers

This month I was fortunate to have meetings with the Minister of Health, Minister Adrianna LeGrange, and the Minister of Seniors, Community and Social Services, Minister Jason Nixon. Both these meeting were very productive meetings where they shared their concerns about the shortage of physicians, and I shared the many things we are doing to streamline the licensure of physicians in Alberta. I covered most of that earlier in my report and more will follow.

Both Ministers were supportive of the work CPSA is doing and expressed thanks to the organization for removing the administrative barriers, while remaining vigilant in keeping the regulatory safeguards to protect Albertans.

Myself and Dr. Cardinal have a meeting with the Premier on June 10th.

b. Freedom of Speech discussions

I recently participated in a podcast put on by the AMA about freedom of speech where we discussed CPSA's position and the results of the survey of the profession we completed in the Fall.

There continues to be concerns that CPSA is overly restrictive of regulated member's freedom of speech, however as we spend more time on this there are two things that continue to come up as reasons for these concerns. First is that we are likely not communicating our position as clearly as we could be and therefore our Advice to the Profession document is being updated to better align with the messaging from the opinion piece that was published in November. Secondly is the reality that the Health Professions Act obligates us to address any complaint that comes to us. We have no ability to dismiss complaints even if we feel they are trivial or vexatious. For the physician that receives a complaint about what they have said publicly it can feel like CPSA is coming after them, but in reality we are obligated by law to accept that complaint, notify the physician of the complaint and ask for a response.

If we dismiss the complaint the complainant can still appeal that to a complaint review committee, who can send the complaint back to the complaints director or they could even send it directly to a hearing.

As an example, let's say a physician is refereeing a hockey game and someone didn't like the call that physician made. The person felt so upset by it that they reported their concern to CPSA via a complaint. If they provide the complaint in writing, we are then obligated to accept the complaint. To

the physician I can understand how unreasonable that is, and we can be seen as the problem. We have tried to dismiss such complaints in the past and they have been either sent back by the ombudsman or the decision to dismiss has been overturned by a Complaint Review Committee (CRC).

As a result, we agree with government that we need to improve the legislation so that we can dismiss such complaints that do not cross over into a physician's clinical role. We have in fact presented some potential legislative change that would allow us to focus on the physician's professional responsibilities and not their rights as a Canadian to share their thoughts as a member of society.

c. Additional Route to Licensure

This project continues to move forward, all be it slower than expected. CPSA has leaned forward and hired a project manager to help get things going and keep it going. It is expected this will eventually be reimbursed by the project funding by government.

Our first meeting of the partners was held on May 12th. The result of that meeting was positive, and our partners are all in agreement with our proposed project governance. Each partner will now provide the staff to commit to the project and confirm their areas of expertise are represented.

One thing we need to keep an eye on with this project is to ensure we don't start too big. Our intent is for acute care providers called house physicians that support tier one medical support requirements in the acute care setting.

d. Access to physician billing data

The CPSA-Alberta Health-Special Investigation Unit Compliance and Professional Standards Working Group has been established in late 2024 to provide a forum for coordination and information sharing related to physician billing that would be considered out of normal.

The group's objective is to:

- Develop consistent and transparent compliance-related solutions to individual physician behaviours relevant to the HPA and Alberta Health Care Insurance Act.
- Promote initiatives that have high business value related to promotion of professional conduct and compliance across the regulated service provider community.
- Support initiatives that enable interagency information sharing to facilitate effective health system improvements.

- Sharing information regarding compliance and enforcement activities that may impact both parties' scope of responsibility.
- Ensure consistent understanding of relevant compliance-related behaviours.
- Developing mutually agreeable solutions to compliance and enforcement challenges that may impact both parties' scope of responsibility, specifically regarding professional conduct and behaviour change.

The Working Group has met regularly and initially focused on level setting and understanding each organization's legislative frame, organizational design, and operational principles. This has allowed each organization to better understand how referrals work and what type of file is of interest to each organization. This work has already demonstrated value by clarifying pathways for referral. This relationship building has resulted in files being referred (through pre-established mechanisms) to an organization that could better manage the issue. The working group is now developing an understanding of the legal and policy landscape that would allow for an interagency coordinated approach to specific and deanonymized files.

4. National Updates

a. Federation of Medical Regulatory Authorities of Canada (FMRAC)

National Licence

Over the past few years, I have spoken a great deal about the lack of need for a National/Pan Canadian License. With the challenges related to the regulatory oversight of practise in each province and the reality that mobility is not the solution to an overall shortage of physicians I don't believe this is a solution to the problems we have. In fact, you have heard me say that mobility could actually be counter productive to our eventual goal of having a patient's medical home for Albertans to receive their care.

I still believe all of that, however over the past few months, with interprovincial trade gaining more focused attention, I have come to realize that there is such a significant political will to create such a licence that a National Licence is inevitable. In the run up to the recent federal election, the Liberal party said they will create a national licence, and we are expecting them to follow through with that promise.

If a national licence is a reality, it would be far better for the Medical Regulatory Authorities (MRA) to design one that will be the most effective and the least invasive. We are after all the experts in licensure and regulation.

As a result, I put forward a proposal for a national licence to the Federation of Medical Regulatory Authority of Canada (FMRAC) in late April which demonstrated how we could accomplish such a licence by divorcing it from the regulatory oversight of each jurisdiction.

Essentially, this national licence would be optional and customizable. Only those who are in good standing and meet the licencing requires for the most stringent jurisdiction would be granted the privilege of having a national licence. They would need to identify a home jurisdiction as their overarching regulatory authority, and this would be the jurisdiction where they must meet their professional development requirements. Those with such a licence could however identify any number of jurisdictions they wish to work in and they would be automatically registered in those jurisdictions at a reduced cost than what a full licence would cost.

FMRAC was intrigued by the concept, and they have agreed to pursue the idea further. No commitment has been made, however there are meetings scheduled to build on the idea in June during the annual FMRAC meetings.

FMRAC/CFPC collaboration

FRMAC has entered into a Collaboration Agreement with the CFPC to increase the number of approved jurisdictions and the number of pathways to licensure and certification for International Medical Graduate (IMGs) and Internationally Trained Physicians (ITPs). FMRAC is contributing some funding and providing two members to the project Steering Committee while the CFPC is committing more funding, three members to the Steering Committee, plus all project and administrative support. The Terms of Reference for the Steering Committee and a Project Charter are in development. Steering Committee members will be solicited from the Committee on Medical Licensure in Canada once the Terms of Reference are finalized.

Federal Government

FMRAC has built a strong connection with the federal government over the past year. As a result, the Federal Department of Health has proactively engaged FMRAC leadership in work such as recognition of foreign credentials and physician mobility. This will help medical regulators influence the outcome better than we have been able to historically.

Health Canada’s regulatory compliance and enforcement division also advised FMRAC of the rise in unauthorized semaglutide products in Canada. They wanted all MRAs to be aware of their position on the sale of compounded glucagon like peptides (GLP-1) receptor agents. They are seeing increasing numbers of compounding pharmacies making GLP-1, and while there are cases

where compounding is appropriate, the numbers they are seeing would qualify as manufacturing which is tightly controlled and can only be done in accredited facilities, not pharmacies. They don't know why the rise is occurring, since there is no shortage of GLP-1 in Canada. Health Canada asked FMRAC to advise us that they are enforcing standards and will refer any inappropriate prescribing patterns that they uncover to us.

5. International Updates

a. International Association of Medical Regulatory Authorities (IAMRA)

The 2025 IAMRA meeting will be held in Dublin, Ireland from September 3rd to 6th. The theme of the conference is "People-focused regulation for a safer global community."

CPSA is once again well represented with several verbal presentations and poster presentations being accepted.

b. Federation of State Medical Boards (FSMB)

Nothing to report.

Conclusion

I hope this report demonstrates that CPSA continuously strives to improve the work we do and that we take our role in protecting the public very seriously. We have an amazing team of people who are dedicated to the work they do every day and who believe in our mission. I'm confident this team will continue to do amazing things moving forward.

cpsa
COLLEGE OF PHYSICIANS & SURGEONS OF ALBERTA

Competence Committee Meeting Report Form

Meeting Date:	Submitted by:		
May 12, 2025	Dr. Michael Caffaro, Assistant Registrar, Continuing Competence		
Agenda Item Title:	Competence Committee Report to Registrar		
Length of Time:			
Action Requested:	☒ The attached is for info only. No action is required.	☐ The following item(s) are of particular interest to Competence Committee. Feedback is sought on this matter.	☐ The following items require approval by the Registrar. See below for details of the recommendation.
AGENDA ITEM DETAILS			
Recommendation: (if applicable)	N/A		
Background:	**Membership and Staff Updates** All current members of the Competence Committee with term ending this year have agreed to continue their membership for another term, hindering the need for recruitment of members. At the departmental level, CPSA staff in Continuing Competence is now at capacity. **Program Updates** • The Infection Prevention and Control (IPAC) team is on track to meet the 2025 program target of 150 clinic assessments. The team completed 43 medical device reprocessing assessments as of March 31st. The clinic registration project captured an additional 131 community clinics in the first quarter of the year. Overall, there are 1,299 clinics now registered at CPSA, which represents close to 50% of all non-accredited community clinics in Alberta. This trend suggests close to 100% clinic registration by 2028, only five years after the project was launched. • Individual Practice Review (IPR) and Physician Assessment & Feedback (PAF) opened a combined, 46 new competence assessments in the first quarter of 2025. Our goal of is 200 assessments of potential high risk practices this year. While recruitment efforts are ongoing, progress continues toward strengthening our assessor resources, though challenges remain. • Accelerated Registration Competency Assessment (ARCA) has engaged a total of 49 candidates to date. Of those, 17 are expected to complete their second assessment by the end of 2025, one year after		

	their first assessment. Out of this cohort, a single candidate who required remedial actions and follow up review. • Regulated members are meeting Physician Practice Improvement Program (PPIP) expectations. 90% of the members reported completion of at least one PPIP activity, with 77% of regulated members reported that they have completed more than three activities, (66% in the previous year).The profession is embracing and engaging in practice improvement initiatives to better the quality of care that they are providing to Albertans. • Group Practice Review (GPR) is on track to meet the annual target of engaging 50 clinics this year, with 34 new clinics engaged as of March 31st. MCC360 participation is showing a slight downward trend as more regulated members are choosing to do other personal development activities on their own. The program initiated 308 new MCC360 so far in 2025 and is expecting to have close to 400 completions by year end, which is lower than the 500 annual goal. As more regulated members become knowledgeable of PPIP, they are encouraged to do their own personal development activities. • Health Monitoring remains steady in the first quarter of 2025. 67 regulated members are currently engaged in the program. The team is still in a learning and process improvement mode, which includes collaboration with contracted external health monitors and independent medical examiners. Updates to agreements are an important part of clear communications with members and their legal counsel. • Practice Conditions Monitoring is experiencing an upward trend in volume. 383 conditions are being monitored, an increase of almost 100 from the year before. The team is exploring innovative approach to be more efficient including automation and adaption of AI tools. 19 regulated members (with 40 distinct chaperone conditions) are participating in the chaperone program. The Permit Conditions Monitor completed 2 practice visits this year so far.
Next Steps:	The Competence Committee will meet next on June 6, 2025, with Dr. Catherine Patocka chairing.

cpsa
COLLEGE OF PHYSICIANS & SURGEONS OF ALBERTA

Submission to:	**Council**

Meeting Date:	Submitted by:		
May 29 & 30, 2025	Dr. Jeremy Beach, Assistant Registrar, Accreditation		
Agenda Item Title:	4.2 Registrar's Report MFAC Report April 2025		
Action Requested:	☐ The following items require approval by Choose an item. See below for details of the recommendation.	☐ The following item(s) are of particular interest to Choose an item. Feedback is sought on this matter.	☒ The attached is for information only. No action is required.

AGENDA ITEM DETAILS	
Recommendation (if applicable) :	Not Applicable
	The Medical Facility Accreditation Committee (MFAC) met on April 2, 2025 and addressed the following: **1. Facility Accreditation** MFAC Approved Accreditation for the following number of facilities: Existing Facilities – 4-Year Assessments • Diagnostic Imaging – 8 facilities • Neurodiagnostics – 2 facilities Existing Facilities – Facility Moves, Renovations and New Modalities: • Diagnostic Imaging – 5 new modality assessments New Facility Assessments: • Diagnostic Imaging – 6 facilities • Psychedelic-Assisted Psychotherapy – 1 facility • Neurodiagnostics – 1 facility **2. Advisory Committee – New Member Approvals** NHSF Advisory Committee Dr. Alan Houghton – College of Dental Surgeons of Alberta (Observer) **3. Advisory Committee Chair Appointments** • Dr. Jennifer Swainson – Chair, Psychedelic-Assisted Psychotherapy Advisory Committee • Dr. Charles Samuels – Chair, Sleep Medicine Diagnostics Advisory Committee

4. **Measurement Uncertainty**
MFAC approved updates to the Assessment of Compliance for General Standard G.7.0.2, incorporating optional guidance on Measurement Uncertainty (MU).

   Facilities are encouraged to consider MU where appropriate, though it is not required. The change reflects evolving international standards and was recommended by the Advisory Committee for Laboratory Medicine.

5. **Physician Environment for Superficial Radiation Therapy**
MFAC did not endorse the recommendation to allow superficial radiation therapy (SRT) in physician office-based settings. Concerns were raised regarding regulatory oversight, safety, and program accountability.

   The Committee requested CPSA Accreditation clarify whether SRT falls under MFAC's jurisdiction and clarify whether alternate oversight exists under Occupational Health and Safety regulations to require inspection and registration of SRT equipment. If within scope and no alternate oversight is found, SRT may need to be added to the Prescribed Health Services list.

6. **New Prescribed Service Requests**

   MFAC approved the following additions to the Prescribed Health Services list, based on recommendations from the NHSF Advisory Committee:
   - Rigid endoscopic brow lift – added under the ophthalmologic surgical category
   - Fat grafting to orbit – added under the ophthalmologic category, with corresponding bylaw revision
   - Kyphoplasty – added under the orthopedic surgical category

   The Committee also endorsed guidance for non-orthopedic specialists performing kyphoplasty, emphasizing Medical Director oversight and elective training documentation.

   A recommendation to add stature lengthening as an extended stay prescribed health service was not approved. MFAC was generally supportive with the proviso that the NHSF Advisory committee draft related standards that define pathway for how risks will be managed with a particular emphasis on continuity of care considerations. MFAC recognized the high-risk nature of the procedure and implications related to itinerant surgery and medical tourism, requesting the topic to be returned for reconsideration in tandem with draft standards at a future date.

7. DI v4 Teleultrasound Standard 25km rule - ACDI Recommendation

MFAC reviewed the Advisory Committee for Diagnostic Imaging's (ACDI) recommendation regarding the 25km geographical restriction in the V4 Diagnostic Imaging Standards.

The Committee considered two external reports commissioned by Council, which presented no conclusive evidence of harm or benefit. While concerns were noted around utilization and service quality in urban settings, MFAC supported maintaining the 25km rule, requesting the Accreditation Department to commission a research project using billing data to gauge the impact of reducing the restriction from 100 kilometers to 25 kilometers over the next 24 months.

8. NHSF Design Exemption Requests

The Committee approved the following design exemption requests based on recommendations from the NHSF Advisory Committee:

- Holy Cross Surgical Services – Approved, with contingencies related to operating room design, recovery room configuration, equipment specifications, and procedure eligibility.
- Innovation Dermatology – Approved, supporting design accommodations for pediatric dental procedures, including HVAC enhancements and scheduling strategies.
- Glendeer Surgical – Approved, with mitigation strategies including anesthetic scope limitations, equipment protocols, and alternating surgical days by specialty.

9. NHSF Subcommittee Membership

MFAC reviewed a proposal from the NHSF Advisory Committee to establish a subcommittee for the review and development of NHSF accreditation standards.

While recognizing the need for ongoing standards evaluation, the Committee raised concerns regarding governance, transparency, and scope. MFAC emphasized that only current NHSF Advisory Committee members may serve as voting members.

No decision was made. MFAC requested the following before reconsidering the proposal:

- A written explanation of the subcommittee's purpose and objectives
- A draft Terms of Reference
- CVs for all proposed members
- Signed conflict of interest and confidentiality declarations, including disclosure of any NHSF ownership or primary stakeholder status

cpsa
COLLEGE OF PHYSICIANS & SURGEONS OF ALBERTA

Submission to:	**Council**

Meeting Date:	Submitted by:		
May 29, 2025	Dr. Sayra Khandekar Assistant Registrar, Registration		
Agenda Item Title:	5.1 Department Update – Registration		
Action Requested:	☐ The following items require approval by Choose an item. See below for details of the recommendation.	☐ The following item(s) are of particular interest to Council Feedback is sought on this matter.	☒ The attached is for information only. No action is required.
AGENDA ITEM DETAILS			
Recommendation (if applicable) :	N/A		
Background:	At the May 2025 Council meeting, Council will be provided with the following updates from the Registration department: • Registration process overview • Proposed changes to process of transfer from the Provisional Register to the General Register • Update on the Accelerated Jurisdiction Route to Licensure • Update on request for review of eligibility of Osteopathic Physicians (Doctors of Osteopathic Medicine)		
Next Steps:	N/A		
List of Attachments:			
N/A			

COLLEGE OF PHYSICIANS & SURGEONS OF ALBERTA

Submission to:	**Council**

Meeting Date:	Submitted by:		
March 6, 2025	Michael Neth, Chief of Staff		
Agenda Item Title:	5.2 CPSA and G4 Health Partnership Commitment		
Action Requested:	☒ The following items require approval by Council See below for details of the recommendation.	☐ The following item(s) are of particular interest to Choose an item. Feedback is sought on this matter.	☐ The attached is for information only. No action is required.

AGENDA ITEM DETAILS	
Recommendation (if applicable) :	That Council provide approval for CPSA Council Chair to sign the G4 Health and CPSA Partnership on Council's behalf.
Background:	• Michael Neth, Chief of Staff, introduced the G4 Health and CPSA partnership document at the March 2025 council meeting along with a request that the Council Chair be authorized to sign the agreement on behalf of Council alongside the Registrar. • The relationship between G4 Health and CPSA came to be through the Indigenous Advisory Circle. Through the Circle, which was established by CPSA Council in 2021, G4 Health recognized the commitment of how CPSA intends to work with Indigenous populations and that the two organizations share values. • It was explained in that report that initially this was intended to be an operations-to-operations commitment between the organizations, but G4 Health's previous experiences with other organizations motivated them to elevate the signing to a "governing body to governing body" commitment. • Not explained in the March report was that CPSA Council met with G4 Health, Tsuut'ina Nation Council members, and Elders in January 2024 to build relationships and common understanding. This was one of the catalysts for further discussions between G4 Health and CPSA towards the commitment document. • In response to the March presentation, Council requested more information about • the nature of the partnership, • G4 Health's expectations of CPSA and Council, and • the accountability mechanisms anticipated by elevating the signing to include the Council and G4 Board. • The CPSA team has prepared the following responses to these requests:

	• The partnership commitment, co-created with G4 Health, is not a partnership in the legal sense but is relational in nature. It is intended to be structured but flexible, demonstrating a shared understanding of how we will work together, and establishes common understanding around a shared commitment to patients and respect for each other's autonomy. This is not a legally binding agreement. • Conversations about collaboration opportunities have explored sharing communications resources (webpages, information circulars, etc.), trialling a patient liaison approach to improving patient access to CPSA resources, and facilitating information sharing to help improve regulated member awareness of culturally safe practices that will improve patient outcomes. Please see "G4 Health and CPSA Partnership: Backgrounder" to learn more. • G4 Health has stated their expectation of CPSA is for us to work collaboratively together in a way that aligns with CPSA's mission, specifically as it relates to contributing to the health and wellness of people in Alberta (in this case the Îyethka and and Tsuut'ina Peoples specifically) and to guiding regulated members to provide safe, high-quality care to patients. • By elevating the signing to Council, G4 Health hopes they may raise any concerns they have about CPSA to Council should dialogue with team members not be successful. CPSA would have the same opportunity going the other way should we have concerns with G4 Health. Ultimate decision-making on recourse would rest with CPSA Council should G4 Health raise concerns, and vice versa with the Stoney Nakoda Tsuut'ina Tribal Council board, because this is not a legally binding partnership agreement. • The commitment between G4 Health and CPSA will be mutually beneficial. Entering into this commitment presents a low risk and no fixed cost to CPSA. It generates opportunities to positively impact the First Nations represented by G4 Health, CPSA regulated members and the CPSA team. • Not supporting the commitment or proceeding with the signing presents a high risk to CPSA's reputation and to the trust we seek to build with First Nations, Inuit and Métis Peoples across Alberta.
Next Steps:	• Prepare for partnership commitment signing. • Co-create with G4 Health action plan (including evaluation measures).
List of Attachments:	
1. G4 Health and CPSA Partnership: Backgrounder 2. G4 Health and CPSA: Partnership Principles and Collaborative Commitments	

Recommendation

Council approves CPSA Council Chair's participating in the signing of the G4 Health and CPSA Partnership Commitment on Council's behalf.

The commitment between G4 Health and CPSA will be mutually beneficial. It presents a low risk and minimal cost to CPSA and generates opportunities to positively impact the First Nations represented by G4 Health, CPSA regulated members and the CPSA team.

Background

The relationship between G4 Health and CPSA came to be through the Indigenous Advisory Circle (the Circle). Through the Circle, which was established by CPSA Council in 2021, G4 Health recognized the commitment of how CPSA intends to work with Indigenous populations and that the two organizations share values.

In early 2023, Margo Dodginghorse (G4 Health Director and founding member of the Circle) identified opportunities for G4 Health and CPSA to collaborate outside of the Circle's work. That fall, members of the G4 Health and CPSA teams (together referred to as the partnership's technical team) began meeting to explore a potential partnership to support each organization's vision and mandate.

The technical team prepared a draft partnership agreement, which includes collaborative commitments of anti-racism anti-discrimination, cultural competency, patient-centered practices and continuous quality improvement.

In the summer of 2024, the proposed partnership was presented to the G4 Health Steering Committee and CPSA senior leadership team for feedback, discussion and support. G4 Health is prepared to sign the agreement with their leadership. CPSA is seeking equivalent support from Council through approval for Council Chair Dr. Nicole Cardinal and CEO and Registrar Dr. Scott McLeod signing on behalf of CPSA.

By **partnership**, G4 Health and CPSA mean an agreement around shared commitments and respect for each other's autonomy.

This **relational partnership** is intended to be structured but flexible, and to demonstrate a shared understanding of how we will work together.

About G4 Health

G4 Health represents Îyethka (Bearspaw, Chiniki, Goodstoney) and Tsuut'ina First Nations as an advocate, advisor, collaborator and capacity builder. G4 Health is a department within the Stoney Nakoda Tsuut'ina Tribal Council and is governed by a Board of Directors comprised of the Chiefs of the Sovereign Nations.

With a target population of approximately 8,300 people, G4 Health representatives serve on a number of health-related boards as part of their efforts to improve health outcomes for the Îyethka and and Tsuut'ina Peoples. Recognizing systemic improvement requires the efforts of many, G4 Health also works to develop their network of partners to promote

enhanced health and wellness for the Îyethka and and Tsuut'ina Peoples. Partnerships are foundational to their approach, with guiding principles that include:

- building on respectful and meaningful relationships based on their Treaty right to health,
- committing to a strategic, collaborative and meaningful environment to co-facilitate efforts towards impactful change, and
- engaging respectfully, safely, openly and transparently with internal and external stakeholders and partners.

About the partnership

G4 Health and the CPSA team have prepared a partnership commitment that:

- identifies mutual goals between the two organizations
- articulates a shared vision
- outlines principles for how we will approach their relationship and shared work
- defines collaborative commitments

This commitment describes *how* G4 Health and CPSA will work together. Honouring the principle of valuing relationships over outcomes, it sets a solid and sustainable foundation upon which an action plan (including an evaluation framework) will be built.

G4 Health's expectations

Partnerships are integral to the approach G4 Health takes towards achieving their goal of healthier and empowered Îyethka and and Tsuut'ina Peoples, and CPSA is one of the organizations they seek to partner with. G4 Health recognizes it takes collaboration across the health system to effect change and they honour the contributions each partner can make within their role and scope. G4 Health has expressed their expectation of CPSA is for us to work collaboratively in a way that aligns with our mission, particularly as it relates to contributing to the health and wellness of the Îyethka and and Tsuut'ina Peoples and guiding regulated members to provide safe, high-quality care.

While the partnership between G4 Health and CPSA as outlined in the commitment is rooted in *how* we will work together, some preliminary conversations have included areas for potential collaboration.

Patient liaison to improve access to CPSA

One potential opportunity is to create a link between G4 Health and CPSA on behalf of Îyethka and Tsuut'ina Peoples. While awareness of CPSA among the Îyethka and and Tsuut'ina Peoples is reportedly low, G4 Health is a known and trusted organization that may help connect their Peoples to CPSA's patient-facing teams, such as Customer Experience and Professional Conduct teams.

G4 Health is building a network of liaisons to help Îyethka and Tsuut'ina Peoples navigate the health system. G4 Health and CPSA have discussed trialling a process through which these liaisons may help a community member with concerns about the care they received from a regulated member navigate CPSA's processes. This could look like a liaison reaching into CPSA to describe a concern or facilitate a complaint, or, through working with the individual, helping identify that a physician was not the cause of the patient's concern. This

process would improve access to CPSA's services in a culturally safe way and help build trust.

Improved regulated member awareness of culturally safe practices

G4 Health has conducted research to learn about the healthcare experiences of the Îyethka and and Tsuut'ina Peoples. They have also been gifted the wisdom and guidance of Elders, whose voices shape and support their health strategies. From these sources of wisdom, G4 Health has begun developing tools, guidance and other resources specifically for healthcare providers working in and around the four First Nations. CPSA can identify the regulated members practising in this region and may be able to facilitate sharing G4 Health's resources with these regulated members, which may result in improved regulated member-patient experiences.

Connecting new-to-Alberta physicians to resources like those developed by G4 Health may also help improve the integration of these physicians into their chosen communities.

Impact on CPSA

Carrying out our mandate

CPSA's role in the health system is to protect the public by guiding the medical profession. Specifically, our mission is "to serve and protect all Albertans, contributing to their health and wellness by supporting and guiding regulated members to proudly provide safe, high-quality care, together with healthcare partners and patients."

CPSA's approach to this partnership commitment is rooted in our mission and provides a unique opportunity to collaborate towards safe, high-quality healthcare for the Îyethka and Tsuut'ina Peoples. Given the health disparities and the 19-year gap in life expectancy affecting First Nations Peoples in Alberta, CPSA has a responsibility to work in partnership with organizations like G4 Health who are focused on improving health outcomes for their Peoples. While this specific partnership focuses exclusively on the Îyethka and Tsuut'ina Peoples, the benefits will ultimately be felt by all Albertans CPSA serves and protects.

Learnings

CPSA will benefit from learnings gained through working collaboratively with G4 Health. Over time, we anticipate incorporating G4 Health's honest and ongoing feedback into our processes towards improve the patient experience for all—including Îyethka and Tsuut'ina Peoples, Indigenous peoples in Alberta, and all Albertans.

Improved credibility

The G4 Health team is a leader in Alberta and is influential in building health system partnerships, including through active involvement in many regional, provincial and national health boards, advocacy groups and tables. Doing good work with G4 Health may strengthen CPSA's credibility among the Îyethka and and Tsuut'ina Peoples as well as other First Nations or Indigenous-led organizations who may want to work with CPSA.

There is a reputational risk if the G4 Health and CPSA partnership is not supported and carried out by CPSA. It will impact trust in CPSA among G4 Health, First Nations and Indigenous Peoples across Alberta. It will also impact the CPSA team's perception of our commitment to reconciliation and our mandate.

G4 Health and CPSA:
Partnership Principles & Collaborative Commitments

Background

G4 Health represents Îyethka (Bearspaw, Chiniki, Goodstoney) and Tsuut'ina First Nations as an Advocate, Advisor, Collaborator and Capacity Builder. G4 Health is a department within the Stoney Nakoda Tsuut'ina Tribal Council Ltd. (SNTTC/G4) and is governed by a Board of Directors comprised of the Chiefs of the Sovereign Nations.

The College of Physicians & Surgeons of Alberta (CPSA) is the regulator for physicians and physician assistants in Alberta. CPSA plays an essential role in protecting the public, ensuring regulated members in Alberta are knowledgeable, professional and ethical in their professional practice.

G4 Health and CPSA share the following mutual goals:

- influence change in the health care system by advancing culturally safe, competent, ethical care provided by regulated members
- promote safe, high-quality and informed patient-centered care
- nurture sustainable, authentic connections between Îyethka (Bearspaw, Chiniki, Goodstoney) and Tsuut'ina Peoples and CPSA in the areas of health equity

Towards these goals, G4 Health and CPSA will co-develop joint reconciliation activities rooted in Îyethka and Tsuut'ina ways of knowing and values.

Vision

The Îyethka (Bearspaw, Chiniki, Goodstoney) and Tsuut'ina Peoples receive the highest quality, culturally safe, and ethical care from CPSA-regulated members.

Principles

The wellbeing of the Îyethka (Bearspaw, Chiniki, Goodstoney) and Tsuut'ina Peoples is supported through mutual respect and equal standing in a partnership between G4 Health and CPSA.

Towards this, we commit to a relationship that incorporates:

- applying a 2-Eyed Seeing approach to our shared work
- respecting each other's differences and honouring opportunities to learn from one another
- being authentic in our work together and rooting our interactions in integrity
- valuing relationships over outcomes
- having a patient-centered approach to our work
- developing measurable actions together and supporting each other's accountability
- updating all stakeholders with regular progress updates and annual check-ins
- acknowledging that anti-oppressive practices exist and embedding them into our partnership

Collaborative commitments

In our collaborative work, we acknowledge the strengths of the Îyethka (Bearspaw, Chiniki, Goodstoney) and Tsuut'ina Peoples and take actions to enhance their healthcare experiences with regulated members.

Anti-racism anti-discrimination

- incorporating anti-oppressive practices into our partnership work
- addressing racism and identifying actions to support both patients and regulated members towards better health care
- challenging stereotypes and promoting culturally safe care regulated members provide to Îyethka and Tsuut'ina Peoples
- ensuring accurate representations of Îyethka and Tsuut'ina Peoples
- identifying opportunities for the Îyethka and Tsuut'ina Peoples to participate in and contribute towards medical regulation and culturally safe, high-quality care

Cultural competency

- improving patient experiences through training and resources for regulated members
- ensuring guidance and resources are accessible to regulated members
- applying learnings and successes from this partnership to inform approaches for other related organizations

Patient-centered practices

- creating and strengthening a connection between G4 Health and CPSA on behalf of Îyethka and Tsuut'ina Peoples towards culturally safe patient services
- supporting regulated members in incorporating patient-centered, culturally competent practices
- collaborating on patient resources that are presented in the Îyethka and Tsuut'ina languages

Continuous quality improvement

- engaging with the Îyethka and Tsuut'ina Peoples to develop an evaluation framework that demonstrates progress toward shared goals, and evaluating the impact of joint actions towards improved patient experiences
- growing awareness of CPSA and its mandate to support patient safety and open feedback channels for continually improving culturally safe practices
- sharing research and learnings towards improving the healthcare experiences of Îyethka and Tsuut'ina Peoples, following the First Nations principles of ownership, control, access, and possession (OCAP ®)
- reflecting on wise practices, such as other partnerships towards culturally safe, equitable health care for the Îyethka and Tsuut'ina Peoples

cpsa
COLLEGE OF PHYSICIANS & SURGEONS OF ALBERTA

Submission to:	**Council**

Meeting Date:	Submitted by		
May 29, 2025	Jeremy Beach Assistant Registrar, Accreditation		
Agenda Item Title:	5.3 Accreditation - Diagnostic Imaging (DI) Accreditation Standards – Teleradiology Ultrasound		
Action Requested:	☒ The following items require approval by Council See below for details of the recommendation.	☐ The following item(s) are of particular interest to Choose an item. Feedback is sought on this matter.	☐ The attached is for information only. No action is required.
AGENDA ITEM DETAILS			
Recommendation (if applicable):	That Council retains the current prohibition on teleultrasound within 25 km of main urban centres and evaluates impact of change from 100km (V3) to 25km (v4) radius prohibition on teleultrasound.		
Background:	CPSA Bylaw 52.1 states that the accreditation standards for accreditation of all medical facilities required under this section (College Accredited Programs) and section 8.1(1) of Schedule 21 of the HPA (Requirement for Accreditation) are determined, and amended from time to time, by simple majority resolution of Council. Also, in accordance with the HPA and CPSA Bylaws, Council relies on subject matter experts on the Medical Facilities Accreditation Committee and its many advisory committees. These committees, working with the Registrar and others, undertake research or investigations, survey subject matter experts, and apply their own medical judgement to make recommendations to Council on periodic amendments to Accreditation standards. Based on this, Council's role is to decide if the due diligence that led to the recommendation is sufficient and whether the public interest is served. Council does not need to be subject matter experts themselves and would generally defer to the committee's recommendations unless they see a problem with the process that led to the recommendation. Accreditation Standards are reviewed for minor updates annually and undergo a more extensive revision approximately every four years. The V3 DI Accreditation standards review and revision was initiated in 2018.		

In 2021/2022, input on draft DI standards was gathered through broad provincial stakeholder consultation rounds. The subsequent drafting and approval of the standards occurs through multiple hierarchal CPSA committee levels, including the ACDI (recommendation only), Medical Facilities Accreditation Committee (MFAC) and Council.

Council approved the final V4 Diagnostic Imaging Accreditation Standard, including Appendix E.2.1 Teleradiology Ultrasound at its December 2023 meeting, requesting a third-party review of tele-ultrasound provision to occur in a year's time.

V4 DI Accreditation Standards came into effect October 1, 2024.

Timeline and related information:

2018-2023:

- A review of the remotely supervised imaging accreditation standards (teleradiology) started; substantive revisions throughout, however, most were administrative or purely clinical in nature. They did include a change in the provision of teleultrasound in major urban centres. In V3 of the DI standards teleultrasound had been prohibited '*within a 100 kilometre radius from the city centre of metropolitan areas of greater than 50,000…..*' In V4 this changed to teleultrasound '*is not permitted inside of a 25 kilometre (km) radius*' of the 6 main urban centres in Alberta.

Spring 2023:

- MFAC approved all the draft revised teleradiology standards with the exception of the draft teleradiology standard criteria regarding the prohibition of the provision of tele-ultrasound with 25km radius of 6 main urban centres in Alberta.
- Noted for continued discussion were the current limitations of V3 (provision of tele-ultrasound) and how V4 could be improved to support improved tele-ultrasound imaging access while maintaining equitable quality and safety for all Albertans

April 26, 2023

- After discussion the MFAC members agreed that it would be advantageous to invite the ACDI Chair to the next MFAC meeting to engage in further discussion regarding this change to standards prior to making a decision on this revision.

October 25, 2023

- At the request of MFAC, ACDI Chair and 2 ACDI members attended MFAC to engage in further discussion regarding this change to standards prior to MFAC deciding on this revision

- After discussion, MFAC members felt that the ACDI members did not provide sufficient evidence for the requested change to the standards. Members agreed that a recommendation be made to Council for the acceptance of the v4 standards, however, removing the time and geographical restrictions around the provision of tele-ultrasound which were proposed by ACDI.

- MFAC decided to also seek guidance from Council as to whether an additional stakeholder review was necessary for the teleultrasound provision and whom the review should be conducted by.

December 5/6, 2023

- Council approved the V4 standards with the caveat of revisiting the 25km criteria in one year.
- Accreditation Department engaged two reputable third-party organizations (University of Alberta {U of A}/ Canada's Drug Agency {CDA, formerly CADTH}) to perform a teleultrasound provision review.

February 2025

- CDA report received by CPSA, awaiting U of A School of Public Health report with expected delivery by end of February.

March 2025

- U of A School of Public Health report received
- On March 11, 2025, ACDI held a virtual ad-hoc meeting to review and discuss the two 3rd party external reports.
- ACDI Committee members recommended to maintain the 25km tele-ultrasound boundary in the current V4 Diagnostic Imaging Accreditation Standards.

April 2, 2025

- MFAC reviewed the ACDI's recommendation regarding Appendix E.2 Teleradiology Ultrasound (E.2.1) in the DI v4 Accreditation Standards. Dr. Sarah Coles, ACDI Interim

	Chair, attended to present the committee's position and respond to questions. • The Committee also considered the two third-party reports commissioned by CPSA Council following its December 2023 approval of the DI v4 standards with a one-year review caveat. • While the reports presented no conclusive evidence of harm or benefit, the Committee noted concerns around increased utilization and the potential impact on service quality. • Following discussion, MFAC recommended the retention of the 25km rule pending further research on the subject. MFAC also recommended that a process of data collection should be initiated over the next 24 months to evaluate the impact of reducing the tele-ultrasound geographic restriction from 100km to 25km, with the aim of informing future decisions.
Next Steps:	Council to consider recommendation from MFAC regarding amendment of Appendix E.2 Teleradiology Ultrasound (E.2.1) (i.e. 25 km rule for provision of teleultrasound within 6 main urban centres).
List of Attachments:	
1. MFAC dossier April 2nd, 2025 (inclusive of ACDI dossier March 11, 2025, Committee report form to MFAC, and the two third party external commissioned reports).	

COLLEGE OF PHYSICIANS & SURGEONS OF ALBERTA

Memorandum

To: Medical Facility Accreditation Committee (MFAC)

From: Advisory Committee on Diagnostic Imaging (ACDI)

Date: April 2, 2025

Subject: V4 Diagnostic Imaging Standards – Teleradiology {Appendix E.2 Teleradiology Ultrasound (E.2.1)}/ 25km criteria

Commissioned external party report review (x2):

- Canadian Journal of Health Technologies (Canada's Drug Agency)
- The Health Technology & Policy Unit, School of Public Health, University of Alberta
- ACDI Summary of Review and Recommendation

Background:

October 25, 2023:

- At the request of MFAC, ACDI Chair and 2 ACDI members attended MFAC to engage in further discussion regarding this change to standards prior to MFAC deciding on this revision
- After discussion, MFAC members felt that the ACDI members did not provide sufficient evidence for the requested change to the standards. Members agreed that a recommendation be made to Council for the acceptance of the v4 standards, however, removing the time and geographical restrictions around the provision of tele-ultrasound which were proposed by ACDI.
- MFAC decided to also seek guidance from Council as to whether an additional stakeholder review is necessary for the teleultrasound provision and whom the review should be conducted by.

December 5/6, 2023:

- Council approved the V4 standards with the caveat of revisiting the 25km criteria in one year.
- Accreditation Department engaged two reputable third-party organizations (University of Alberta {U of A}/ Canada's Drug Agency {CDA, formerly CADTH}) to perform a teleultrasound provision review.

V4 DI Accreditation Standards came into effect January 31, 2024, for new facilities / new modalities, and 4y accredited facilities were expected to be compliant as of October 1, 2024.

March 11, 2025:

- ACDI met on March 11, 2025, to review discuss the two commissioned external 3rd party reports.
- Committee recommended to continue supporting the current geographical restriction of 25km criteria related to the provision of tele-ultrasound.
- ACDI recommendation forwarded to MFAC for review and decision.

Committee Action: For review and decision

- MFAC to review both reports and ACDI summary / recommendation for further direction to ACDI or recommendation to Council regarding Appendix E.2 Teleradiology Ultrasound (E.2.1) / 25km criteria

Attachments:

1. ACDI Summary of Review and Recommendation ACDI Dossier March 11, 2025
2. V4 Diagnostic Imaging Accreditation Standards: {Appendix E.2 Teleradiology Ultrasound (E.2.1.)}/ 25km criteria
3. ACDI Dossier March 11, 2025

cpsa
COLLEGE OF PHYSICIANS & SURGEONS OF ALBERTA

Submission to:	**Medical Facility Accreditation Committee**

Meeting Date: April 2025	Submitted by: Adivsory Committee on Diagnostic Imaging		
Agenda Item Title:	Revised V4 Diagnostic Imaging (DI) Accreditation Standards Appendix E.2.1 – Teleradiology Ultrasound		
Action Requested:	☐ The following items require approval by the Registrar. See below for details of the recommendation.	☒ The following item is within MFAC purview for Standard review and recommendation / decision to Council Feedback is sought on this matter.	☐ The attached is for information only. No action is required.

AGENDA ITEM DETAIL	
Recommendation:	MFAC review and recommendation / decision
Background:	ACDI Committee members reviewed the two commissioned research reports regarding the provision of tele-ultrasound (tele-US): • Canadian Journal of Health Technologies (Canada's Drug Agency) • The Health Technology & Policy Unit, School of Public Health, University of Alberta Although the research concludes that tele-US is as safe and effective as US performed with on-site physicians, much of the included data in both reports is not relevant to the current standard of tele-US provision in Alberta. 1. Point of care US (POCUS) is performed by other physicians or medical professionals, not trained in diagnostic imaging. 2. Tele-US in Alberta refers to imaging performed by credentialled sonographers, diagnostic radiologists or imaging cardiologists; all specialty trained in diagnostic imaging.

3. Robotic supported imaging is not applicable or considered in current tele-US standard and currently not being performed in Alberta as far as we are aware.

ACDI recommends maintaining the 25 km tele-US boundary (current V4 Standards) for now.

Rationale:

a) Access: current V4 tele-US standards have facilitated improved access to US imaging for remote/rural patients and referring physicians while maintaining the high-quality imaging (improved access from 100 km/15min→ 25 km). Patients who live in the identified larger metropolitan centres have the benefit of adequate access to US imaging and on-site imaging physician expertise.
b) Exam quality is dependent on machine, sonographer experience and diagnostic imaging physician interpretation. Having on-site physicians in general prevents unnecessary callback studies (callbacks increase exam volume or sonographers not having timely diagnostic imaging physician support), it ensures sonographer oversight / mentoring and enables training of sonography students which can support sonographer and physician workforce / quality of health service delivery.
c) Unfortunately, users of the DI services cannot expect the same level of care in the rural vs urban setting (for example, there are no cardiac catheterization laboratories in rural settings, only urban). V4 Standards strive to ensure quality of care and expectations for all Albertans, striking a balance.
d) Utilization: tele-US studies not having an imaging physician on-site in urban areas may yield lower quality studies ultimately increasing system utilization, cost and unnecessary repeat imaging.
e) Patient care: diagnostic and cardiac imaging straddles a broad medical range from general studies to more detailed studies which require subspecialized interpretation. Current V4 tele-US standards support finding a balance between patient ease of access, best utilization of diagnostic imaging manpower/resources and benefit of subspecialized reads.

f) V4 tele-US standards have only been in place for the 4y CPSA DI accredited facilities since October 2024; still determining adequacy/efficacy. To date, no issue with the change as facilities were used to the 100km/15min V3 criteria. There has been a marked increase in new facilities for tele-US since the release of V4.

g) CPSA Accreditation Dept: Increased workload to manage potential increased number of tele-US facilities, revision of current facility imaging provision information in database of urban DI facilities providing US imaging, etc. (review of imaging service provision, etc.)

h) Image quality with tele-ultrasound is not the issue (acquired image quality is the same {resolution, pixel}) - the image quality views (adequate demonstrated anatomy / view) is a matter of the sonographer experience and the level of training and feedback the sonographer receives from the imaging specialist on-site, when required. Without these important feedback loops (on-site imaging specialist) / lack of timely communication or imaging specialist not available in a timely fashion (e.g. batch reporting/asynchronous) - sonographer imaging quality diminishes and diagnostic ultrasound could potentially turn to screening ultrasound and which would lead to increase of utilization / resources / duplicate imaging / call backs.

i) There was a point made about tele-US with live reporting (synchronous) vs. batch (asynchronous) reporting. With batch reporting, the negative spin-offs are as indicated earlier.

j) Political/system overutilization detrimental impact if removing the 25km criteria – negative impact to diagnostic imaging profession and service provision to Albertans.

k) Committee realizes that budgetary or system issues is not purview of the CPSA / however, other provinces have legislative parameters to monitor the volume and type of imaging facilities in their province (BC), regulatory body does type of peer review (imaging specialists/SK).

l) Committee reinforces that tele-US does have great value in rural, and V4 tele-US standards did increase access.

	m) ACDI is a panel of experts working in the current DI environment for Albertans and has a pulse on the imaging practice, pitfalls, shortcomings, and value of having imaging specialists on-site for patient safety, quality imaging and supporting sonographers. There is value in tele-ultrasound within rural areas that are geographically, or resource challenged, current standards support n) Committee's purview and mandate is to support safe and quality imaging medical practice in diagnostic imaging facilities for all Albertans by offering content expertise from all Zone areas/rural and urban experiences/environments.
Next Steps:	MFAC review and decision and then either back to ACDI for revision or taken to Council by the Registrar to be reviewed by Council for approval and implementation.

E.2 Teleradiology Ultrasound (Standard Reference: US.2.1.2)

In addition to E.1:

1. Tele-Ultrasound is not permitted inside of a 25 kilometer (km)** radius city central point (census tract)* coordinate for the below. If the proposed imaging facility address (decimal degree) lands directly **on** the defined 25km radius line, it will be considered inside the radius and therefore be ineligible to provide tele-ultrasound imaging services.

   - Grande Prairie (WGS84: 55.173038, -118.788224)
   - Edmonton (WGS84: 53.54399, -113.489804)
   - Red Deer (WGS84: 52.268819, -113.809235)
   - Calgary (WGS84: 51.045644, -114.05646)
   - Lethbridge (WGS84: 49.694394, -112.837759)
   - Medicine Hat (WGS84: 50.041492, -110.678366)

   **Census Tract (CT): city hall address of the central municipality/Statistics Canada*
   ***CPSA adopts and utilizes Statistics Canada trusted data and statistical insights; refer to glossary and definitions*

2. Sonographers are registered with Sonography Canada, certified in their specialty (ies) and:

   - have a minimum of one year of full-time post-certification ultrasound experience and will receive documented yearly training to a minimum total of 5 face to face days per calendar with an ultrasound imaging specialist (employed by the group / Zone that is responsible for supervision and reporting of ultrasound examinations, ***or***

   - have a minimum of 6 months full-time post certification ultrasound experience (acquired within same group/Zone), would be deployed only to that same imaging group/Zone's tele-ultrasound facility and will receive documented yearly training to a minimum total of 5 face to face days per calendar year with an ultrasound imaging specialist (employed by the group / Zone) that is responsible for supervision and reporting of ultrasound examinations

3. As a quality assurance measure, CPSA may conduct ad-hoc tele-ultrasound image reviews

COLLEGE OF PHYSICIANS & SURGEONS OF ALBERTA

Memorandum

To: Advisory Committee on Diagnostic Imaging (ACDI)
From: Dr. Jeremy Beach, Assistant Registrar, Accreditation
Date: March 11, 2025
Subject: V4 Diagnostic Imaging Standards – Teleradiology
Commissioned external party report review (x2):

- Canadian Journal of Health Technologies (Canada's Drug Agency)
- The Health Technology & Policy Unit, School of Public Health, University of Alberta

Background:

Accreditation Standards are reviewed for minor updates annually and undergo a more extensive revision roughly every four years. The V3 DI Accreditation standards review and revision was initiated in 2018. The Advisory Committee on Diagnostic Imaging (ACDI) lead the review and proposed revisions of the standards.

In 2021/2022, input on draft DI standards was gathered through broad provincial stakeholder consultation rounds. The subsequent drafting and approval of the standards occurs through multiple hierarchal CPSA committee levels, including the ACDI (recommendation only), Medical Facilities Accreditation Committee (MFAC) and Council.

Council approved the final V4 Diagnostic Imaging Accreditation Standard, including Appendix E.2.1 Teleradiology Ultrasound at its December 2023 meeting, requesting a third-party review of tele-ultrasound provision to occur in a year's time.

V4 DI Accreditation Standards came into effect October 1, 2024.

Timeline and related information:

2018:

- A review of the remotely supervised imaging accreditation standards (teleradiology) started; substantive revisions throughout, however, most were administrative or purely clinical in nature.

Spring 2023:

- MFAC approved all the draft revised teleradiology standards for the exception of the draft teleradiology standard criteria: 25km radius (provision of tele-ultrasound).
- Noted for continued discussion were the current limitations of V3 (provision of tele-ultrasound) and how V4 could be improved to support improved tele-ultrasound

cpsa
COLLEGE OF PHYSICIANS & SURGEONS OF ALBERTA

imaging access while maintaining equitable quality and safety for all Albertans

April 26, 2023:

- After discussion the MFAC members agreed that it would be advantageous to invite the ACDI Chair to the next MFAC meeting to engage in further discussion regarding this change to standards prior to deciding on this revision.

October 25, 2023:

- At the request of MFAC, ACDI Chair and 2 ACDI members attended MFAC to engage in further discussion regarding this change to standards prior to MFAC deciding on this revision
- After discussion, MFAC members felt that the ACDI members did not provide sufficient evidence for the requested change to the standards. Members agreed that a recommendation be made to Council for the acceptance of the v4 standards, however, removing the time and geographical restrictions around the provision of tele-ultrasound which were proposed by ACDI.
- MFAC decided to also seek guidance from Council as to whether an additional stakeholder review is necessary for the teleultrasound provision and whom the review should be conducted by.

December 5/6, 2023:

- Council approved the V4 standards with the caveat of revisiting the 25km criteria in one year.
- Accreditation Department engaged two reputable third-party organizations (University of Alberta {U of A}/ Canada's Drug Agency {CDA, formerly CADTH}) to perform a teleultrasound provision review.

February 2025:

- Both reports to be delivered to CPSA by month's end

Committee Action: For review and recommendation

- ACDI to review and provide a recommendation to MFAC on tele-ultrasound provision; 25km radius
- MFAC will review the report and recommendation from ACDI at its next scheduled meeting for further direction to ACDI or a recommendation to Council regarding Appendix E.2 Teleradiology Ultrasound (E.2.1).

Canadian Journal of Health Technologies

Canada's Drug Agency
L'Agence des médicaments du Canada

3

February 2025 Volume 5 Issue 2

Drugs Health Technologies Health Systems

Health Technology Review

Comparative Effectiveness of Real-Time Teleultrasound Versus In-Person Ultrasound

Key Messages

What Is the Issue?

- Ultrasound imaging requires highly trained professionals for accurate diagnostic exams and interpretation.[1,2]
- Ultrasound is more affordable and portable than CT and MRI and does not expose patients to radiation. This makes ultrasound the preferred method for real-time assessment and soft tissue imaging. For more detailed or complex imaging, or when clinically indicated, CT and MRI may be more appropriate.[3]
- In Canada, less than 28% of rural hospitals have in-house access to ultrasound, leading to patient transfers.[4]
- Ultrasound exams are often conducted by sonographers, and there is a notable shortage of sonographers both in Canada and worldwide.[5,6]
- Limited access to skilled ultrasound professionals has led to the development of teleultrasound (TUS), which supports remote clinical decision-making.[2,5]
- TUS can be delivered in real time with remote guidance from a sonographic expert.
- TUS can be used by a variety of health care professionals with minimal ultrasound training. However, as the use of real-time TUS continues to expand to different clinical areas, its clinical effectiveness compared with traditional in-person ultrasound remains unclear.

What Did We Do?

- We received a request related to the use of real-time TUS to support policy decision-making.
- A literature search was conducted to identify studies examining the clinical effectiveness of real-time TUS compared with conventional in-person ultrasound and any evidence-based guidelines for TUS use in clinical practice.
- We also report some of the advantages and challenges of TUS as described in the literature.

What Did We Find?

- Real-time TUS was comparable to conventional in-person ultrasound for exam image quality and diagnostic consistency.
- Exams took, on average, more than 25% (or 6 minutes) longer to complete compared with in-person ultrasound.

Key Messages

- Real-time TUS was associated with high clinician satisfaction for comfortability, telecommunication quality, exam duration and quality, and accessibility.
- Several studies reported transient safety-related complications (e.g., increased pressure, pain), patient discomfort or fear, and technical difficulties during 10% of robotic-assisted TUS exams.
- Real-time TUS was studied in a wide range of clinical indications in various settings, highlighting its growing role and potential for expanded application in clinical practice.
- No evidence-based guidelines were identified for the use of TUS in clinical practice.

Abbreviations

ECG	electrocardiogram
SR	systematic review
TUS	teleultrasound

Background

Ultrasonography is a portable and noninvasive imaging method that uses soundwaves to visualize internal organs, structures, and systems within the body in real time. According to the WHO, ultrasound and/or X-ray is sufficient for 80% to 90% of patients that require medical imaging for diagnosis.[5] WHO considers ultrasound an essential diagnostic imaging technology, and access to ultrasound has been declared a minimal global standard. However, two-thirds of the world's population lack access to medical imaging services.[1]

Ultrasound imaging is a highly operator-dependent imaging modality that requires well-trained professionals to provide accurate diagnostic exams and interpretation of exam images.[1,2] The quality of an ultrasound exam varies depending on the sonographer's experience with operating the equipment, whereas the image quality of CT or MRI exams are less dependent on the operator's performance.[2] As well, ultrasound is much more affordable and portable than CT and MRI and, unlike CT, does not expose patients to radiation.[3] As a result, ultrasound is the preferred method for soft tissue imaging in cases in which the higher image quality of CT and MRI is not crucial.[3]

Access to ultrasound services in rural or underserved regions is often limited by the lack of qualified professionals, appropriate equipment, and insufficient infrastructure or resources.[1,5,9] In Canada, less than 28% of rural emergency departments have in-house access to ultrasound, requiring patient transfers to facilities with capacity.[4]

Ultrasound exams are conducted by imaging professionals, and a shortage of these professionals both in Canada and in many countries worldwide has been reported.[10,11] Poor job satisfaction is cited as 1 reason for high turnover rates of these health care professionals.[10] As well, recruitment and retention challenges have exacerbated existing staff shortages and contribute to wait times.[10,11]

Limited access to ultrasound professional expertise has led to the development of TUS, an imaging technique that utilizes advances in information technology and ultrasound to support remote clinical decision-making.[2,7] TUS allows for the electronic transmission of ultrasound images from 1 location to another, so images are obtained at a distance from where the interpreting ultrasound professional is located.[2,9]

TUS is intended to enhance patient care by offering access to specialized expertise, either to complement existing services or to provide care in resource-limited settings. By expanding access to these services, TUS has the potential to improve time to diagnosis, reduce costs for both patients and the health care system, and decrease patient travel time.[1,12-14]

How Is TUS Delivered?

TUS involves either real-time (synchronous) or asynchronous ("store and forward") video transmission.[5,15]

Real-time "supervised" transmission: The ultrasound exam occurs with real-time supervision by an imaging expert, often a radiologist or sonographer. The imaging expert is located in a remote location and provides guidance to an onsite ultrasound operator. In some cases, the imaging expert will remotely perform the exam using robotic ultrasound technology with the assistance of an in-person assistant to help position

the equipment. Real-time TUS is often used in emergency settings, where valuable contextual information is needed to aid interpretation and the operator may have limited ultrasound experience.[2,16]

Asynchronous transmission: The ultrasound images are captured locally, stored, and sent to the remote expert later for review and interpretation. Using this method, individuals with limited or no imaging experience (e.g., medical students, nonimaging health care professionals) can be trained to obtain images of the body using basic scanning protocols, which are sent to the expert without degradation in image quality.[2,5,15,17]

Purpose of This Review

With rapid advances in diagnostic imaging technology, various TUS systems exist, such as robotic-assisted ultrasound, portable pocket-sized hand-held ultrasound scanners (i.e., point-of-care ultrasound), and AI-integrated solutions.[2,14,18,19] TUS systems support decision-making across a wide range of clinical settings, and examinations can be conducted at point-of-care, in emergency or community settings, or in dedicated imaging facilities.

Real-time TUS, which allows the remote expert to be virtually present during the ultrasound scan, has gained greater use with the changing health care landscape, access to new technologies, and its utility for mentoring and training. More recently, the unprecedented demand on the health care system during the COVID-19 pandemic led to the rapid development and use of innovative tools to provide urgently needed ultrasound services in a minimal-contact setting for screening and diagnosing symptoms.[35]

Real-time TUS can be used by a variety of health care professionals with minimal to no ultrasound training when guided by an imaging professional. However, as the use of real-time TUS continues to expand to different clinical areas, the clinical effectiveness of real-time TUS compared with traditional in-person ultrasound remains uncertain.[7,8]

The current report aims to provide a summary of the clinical effectiveness of real-time TUS (i.e., synchronous remotely supervised ultrasound) compared with ultrasound delivered using the traditional in-person model. This report also aims to summarize the relevant recommendations from evidence-based guidelines relating to TUS.

Research Questions

1. What is the comparative effectiveness of real-time TUS (remotely supervised ultrasound) compared with the traditional service model of ultrasound with an in-person imaging specialist insofar as patient care quality, service quality, and access to care are concerned?
2. What are the evidence-based guidelines regarding the use of TUS in clinical practice?
3. What are some reported perceived strengths and challenges associated with the use of TUS in clinical practice?

Methods

Literature Search Methods

An information specialist conducted a literature search on key resources including MEDLINE, the Cumulative Index to Nursing and Allied Health Literature (CINAHL), the Cochrane Database of Systematic Reviews, the International HTA Database, the websites of Canadian and major international health technology agencies, as well as a focused internet search. The search approach was customized to retrieve a limited set of results, balancing comprehensiveness with relevancy. The search strategy comprised both controlled vocabulary, such as the National Library of Medicine's MeSH (Medical Subject Headings), and keywords. Search concepts were developed based on the elements of the research questions and selection criteria. The main search concepts were telemedicine or remote supervision and ultrasound. The search was completed on August 27, 2024, and was limited to English-language documents published since January 1, 2019.

Selection Criteria

One reviewer screened citations and selected studies. In the first level of screening, the titles and abstracts were reviewed, and potentially relevant articles were retrieved and assessed for inclusion. The final selection of full-text articles was based on the inclusion criteria presented in Table 1. Articles published before 2019 were excluded due to the rapid timelines for this report and focus on current literature.

Table 1: Selection Criteria

Criteria	Description
Population	Patients seeking ultrasound exams, of any age
Intervention	Real-time TUS (remotely supervised ultrasound)
Comparator	Traditional service model (standard ultrasound delivered in-person by an imaging specialist)
Outcomes	Q1: Clinical effectiveness (e.g., patient care quality, service quality, access to care) Q2: Recommendations related to the appropriate use of TUS in clinical practice Q3: Strengths and challenges associated with the use of TUS in clinical practice
Study designs	Health technology assessments, systematic reviews, randomized controlled trials, nonrandomized studies with a control group, evidence-based guidelines
Exclusion criteria	• **Interventions:** Asynchronous TUS or any intervention without real-time expert supervision, guidance, or feedback • **Comparators:** Standard in-person ultrasound delivered by a nonspecialist (e.g., student, nonclinician, patient) • Articles published before 2019 • Simulation setting • Duplicate publications • Case reports

TUS = teleultrasound.

Critical Appraisal of Individual Studies

The included publications were critically appraised by 1 reviewer using the following tools as a guide: The Downs and Black checklist[20] for primary studies, the A Measurement Tool to Assess Systematic Review 2 (AMSTAR 2)[21] for systematic reviews (SRs), and the Appraisal of Guidelines for Research and Evaluation (AGREE) II instrument[22] for guidelines. The strengths and limitations of each included publication were described narratively.

Summary of Evidence

Quantity of Research Available

A total of 555 citations from the literature search were identified. Following screening of titles and abstracts, 453 citations were excluded and 102 potentially relevant reports from the electronic search were retrieved for full-text review. Fifty-two potentially relevant publications from the grey literature search were also retrieved. Of these potentially relevant articles, 143 were excluded for various reasons. Overall, 11 publications met the inclusion criteria. These comprised 6 prospective nonrandomized studies, 1 nonrandomized controlled trial, 1 randomized noninferiority trial, and 3 SRs. Appendix 1, Figure 3 presents the Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA)[23] flow chart of the study selection.

Additional references of potential interest are provided in Appendix 5.

Study Characteristics

- Eight primary studies and 3 SRs were included in this report, totalling 1,591 participants across 7 countries who underwent TUS or traditional in-person ultrasound.
- No relevant evidence-based guidelines for TUS were identified.

Detailed characteristics of the 11 included studies are presented in Table 4 and Table 5 in Appendix 2.

Study Design

Primary Studies and Systematic Reviews

- Eight primary studies[24-31] (6 prospective nonrandomized studies;1 randomized noninferiority trial; 1 prospective, parallel, nonrandomized controlled trial) were published between 2019 and 2024.
- Three SRs[9,32,33] were published between 2020 and 2024 and included 4 relevant primary studies published between 1996 and 2017. Only results of the relevant studies from the following SRs are included in the present report:
  - the SR by Alhussein et al. (2024)[32] included 9 publications, of which 1 validation study was relevant to the present report
  - the SR by Duarte et al. (2021)[9] included 10 publications, of which 1 prospective nonrandomized controlled trial was relevant to the present report

- the SR by Salerno et al. (2020)[33] included 15 publications, of which 2 feasibility studies were relevant to the present report.

Evidence-Based Guidelines

No relevant evidence-based guidelines were identified for TUS.

Country of Origin

The included primary studies were conducted by authors in China, France, Poland, and the US.[24-31] The SRs[9,32,33] were conducted by authors in Brazil and the US, and the 4 studies included in the SRs originated from France, Norway, and 2 from Korea.

Patient Population

A summary of the patient population and clinical setting are provided in Table 4 (primary studies) and Table 5 (SRs).

- The 8 primary studies included 1,337 adult and pediatric participants. All studies compared real-time TUS with conventional ultrasound.
- A total of 254 participants from the relevant studies included in the 3 SRs comprised of both adult or pediatric populations who were referred for an electrocardiogram (ECG) or abdominal exam for various reasons.

Interventions and Comparators

The intervention used in all studies included in this report was real-time TUS delivered through various methods:

- 6 primary[24-27,30,31] studies and 1 SR[32] reported the use of robotic-assisted TUS
- 1 study[29] reported on the use of a hand-held pocket-sized ECG
- 1 primary study[28] and 2 SRs[9,33] reported on the use of real-time telementored ECG.

In all cases, the comparator was the use of conventional in-person ultrasound delivered by a trained imaging professional.

A summary of the intervention, comparator, and operator characteristics are provided in Table 4 (primary studies) and Table 5 (SRs).

Outcomes

The relevant outcomes reported by the included studies are summarized in Table 2.

Table 2: Outcomes Reported by the Included Studies

Type of outcome	Description
Procedural effectiveness outcomes	• Image quality[23,24,26,27,29-31] • Scan duration[23-27,29,30] • Diagnostic consistency[8,23-32]
Care and service quality outcomes	• Patient satisfaction:[23,24,26,28-30] ○ comfortability ○ fear ○ acceptance of TUS and telecommunications ○ exam duration • Clinician satisfaction:[24,26,29,30] ○ comfortability ○ exam satisfaction ○ exam duration ○ technical performance and telecommunications • Accessibility[24,26,28-30,32]

TUS = teleultrasound.

Summary of Findings

- Real-time TUS was comparable to conventional in-person ultrasound in relation to exam image quality and diagnostic consistency for various types of exams, as determined by expert review. However, real-time TUS exams took significantly longer to complete in most studies, averaging 6 minutes longer.
- Patients expressed a high level of satisfaction with real-time TUS regarding comfortability, telecommunication quality, exam duration, and accessibility for various types of exams. However, in some studies where robotic-assisted TUS systems were used, up 10% of patients reported feeling discomfort, pain, or fear, although no serious adverse events were reported.
- Clinicians and operators expressed a high level of satisfaction with real-time TUS in terms of the quality of exam images, telecommunication quality, and scan duration. However, some clinicians and operators reported that they experienced physical discomfort with using the system and technical difficulties for a subset of exams.
- Three evidence-based guidelines were included in this review to provide clinical guidance on the use of point-of-care ultrasound for central venous catheter insertion in the acute care setting (i.e., emergency department and intensive care unit).

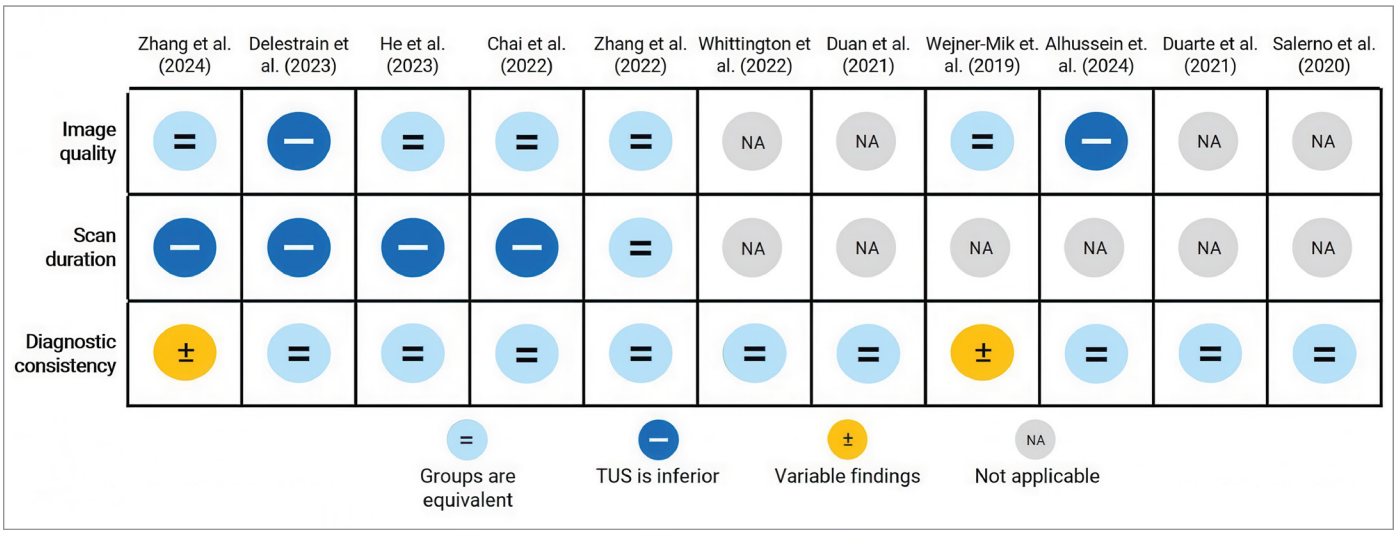
Appendix 3 presents the main study findings by outcome.

Summaries of the outcomes related to procedural effectiveness (i.e., image quality, scan duration, diagnostic consistency) are presented in Figure 1 and Table 6.

Summaries of outcomes related to care and service quality (i.e., safety and complications, patient satisfaction, clinician satisfaction, accessibility) are presented in Figure 2 and Table 7.

Real-Time TUS in Clinical Practice: Procedural Effectiveness

Figure 1: Summary of Findings Related to Procedural Effectiveness



NA = not applicable; TUS = teleultrasound.

Notes: The coloured circles and symbols represent the findings from studies that compared procedure-related outcomes between real-time TUS and conventional ultrasound groups.

Light blue with equal sign = Real-time TUS and conventional ultrasound findings were equivalent or not significantly different (P ≥ 0.05).

Blue with minus sign = TUS was inferior to conventional ultrasound.

Orange with ± sign = Variable findings were reported for the outcome (equivalence and differences between groups).

Grey with NA = The study did not report on this outcome or no comparisons were made between groups.

Exam Image Quality

Overall, the image quality of the ultrasound exams was not statistically significantly different between TUS and conventional ultrasound groups (Table 6). Seven of the 11 studies reported this outcome:

- Five[24,27,28,30,31] of the 8 primary studies reported that the quality of images obtained for real-time TUS were comparable to images obtained using conventional ultrasound, with no statistically significant differences between groups (P > 0.05).
- Delestrain et al. (2023)[25] and Alhussein et al. (2024)[32] reported that the image quality was significantly higher for the conventional ultrasound group than the TUS group (P < 0.05).
- The remaining 2 primary studies[26,29] and 2 SRs[9,33] either did not report on this outcome or did not report on image quality for the conventional ultrasound group.

Scan Duration

Overall, the mean length of time to complete the ultrasound was statistically significantly longer for the TUS group compared with the conventional ultrasound group (Table 6). Five primary studies[24,25,27,30,31] reported this outcome:

- The average scan time ranged from 5.6 minutes to 26 minutes for the TUS group, and 5.2 minutes to 13.9 minutes for the conventional ultrasound group. Four studies[24,25,27,30] reported significantly longer average scan times for the TUS group compared to the conventional ultrasound group ($P < 0.05$), while 1 study[31] did not find significant differences between groups.
- The remaining 3 primary studies[26,28,29] and all 3 SRs[9,32,33] either did not report on this outcome or did not report on scan duration for the conventional ultrasound group.

Diagnostic Consistency

Overall, TUS and the conventional ultrasound groups did not show statistically significant differences in diagnostic consistency (e.g., agreement, correlation), although the results were mixed (Table 6). This outcome was reported by all 11 studies:

- Six primary studies[24-27,29,31] and all 3 SRs[9,32,33] reported "good" to "excellent" agreement, with similar diagnostic values and no statistically significant differences between the TUS and conventional ultrasound groups.
- Two primary studies reported variable findings for diagnostic consistency.[28,30] Zhang et al. (2024)[30] reported "very good" consistency in the diagnosis of 29 types of disease and most structural measurements between the 2 ultrasound methods. Zhang reported that TUS underestimated the transverse diameter of the kidney compared with conventional ultrasound ($P = 0.024$ to 0.006). Similarly, Wejner-Mik et al. (2019)[28] reported good correlation for cardiac anatomical dimensions and agreement on cardiac abnormalities between groups but reported weaker correlation on the measurement of the right ventricle's systolic function ($r = 0.52$; $P = 0.0037$).

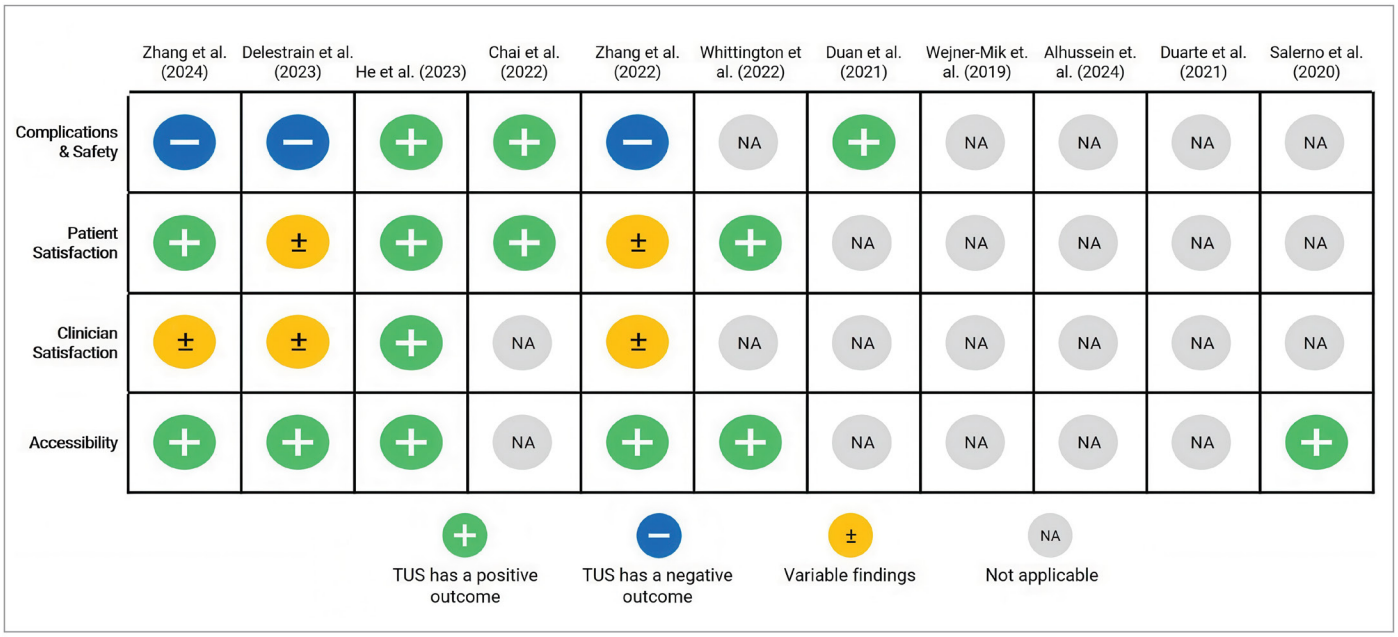
Complications and Safety

Findings related to patient-reported complications and safety were mixed across the 6 primary studies that reported this outcome (Table 7). Reported complications included temporary pain and discomfort during the exam.

- Three primary studies reported no injuries,[24,27] complications,[26] or significant changes in vital signs[26] for patients who underwent TUS.
- Three other studies[25,30,31] reported complications or adverse events relating to robotic-assisted TUS:
  - Zhang et al. (2024)[30] reported that 8.4% of patients experienced mild pain during the abdominal exam.
  - Zhang et al. (2022)[31] reported that 7.2% of patients experienced neck discomfort or temporary suffocation during the thyroid exam.
  - Delestrain et al. (2023)[25] reported that 5.3% of patients reported temporary pain during the exam, although no severe adverse events occurred.

Real-Time TUS in Clinical Practice: Care and Service Quality

Figure 2: Summary of Findings Related to Care and Service Quality



NA = not applicable; TUS = teleultrasound.

Notes: The coloured circles and symbols represent the findings from studies that examined care and service quality–related outcomes for real-time TUS.

Green with plus sign = A positive experience with TUS relating to the outcome of interest was reported.

Blue with minus sign = A negative experience with TUS relating to the outcome of interest was reported.

Orange with ± sign = Variable findings were reported for the outcome of interest.

Grey with NA = The study did not report this outcome.

Patient Satisfaction

Overall, patients indicated a high level of satisfaction with TUS according to several domains captured in self-reported questionnaires, although there were variable findings relating to comfort with TUS (Table 7). Six[24,25,27,29-31] of the 11 studies reported this outcome.

Acceptance

- In 3 studies[27,30,31] that assessed patient acceptance, 85.6% to 95.3% of patients indicated acceptance of the TUS system.

Comfort

- In 5 studies[24,25,27,30,31] that assessed patient comfort, 90% to 100% of patients indicated no discomfort during the TUS exam or indicated comfort in knowing the robotic TUS device was controlled from elsewhere.
- In a study[25] that used robotic TUS in a pediatric population, 45% of parents reported that the child felt less pressure with the system compared with conventional ultrasound. Conversely, 16% of parents reported that their child felt increased pressure from the robotic system.

Fear

- In 3 studies[27,30,31] that assessed patient fear, 89.2% to 96% of patients reported no fear of the robotic TUS system.

Telecommunications

- Three studies[25,29,30] assessed patient satisfaction with communicating with the TUS sonographer during the TUS exam or during remote consultation or image interpretation after the TUS exam. For each of the 3 studies, more than 90% of patients and parents were either satisfied or comfortable with the remote procedure and consultation.

Scan Duration

- In 3 studies[27,30,31] that assessed patient satisfaction with TUS exam duration, 85.8% to 94.3% of patients indicated acceptance or satisfaction with the length of time.

Clinician Satisfaction

Overall, both teleclinicians (i.e., teleradiologists, telesonographers) and patient site assistants indicated a high level of satisfaction with real-time TUS, although there were variable findings relating to comfort and technical performance (Table 7). Four[25,27,30,31] of the 11 studies reported this outcome.

Comfort

- Delestrain et al. (2023)[25] assessed comfort levels in the telesonographers' handling of the remote robotic ultrasound probe and patient site assistants holding the robotic system. The authors reported that 34% of telesonographers experienced more physical strain than conventional ultrasound, and 16% of site assistants experienced significant physical strain.

Exam Satisfaction

- In 2 studies[30,31] that assessed overall satisfaction with exam quality, 83.3% to 98.6% of exams were considered satisfactory and accepted by the teleclinicians.

Technical Performance

- In 3 studies[27,30,31] that assessed satisfaction with the technical performance of the TUS system, teleclinicians reported difficulty during 11.8% to 18.1% of exams. Additionally, some telesonologists (a sonographer that provides remote ultrasound services) expressed concern in the scope of scanning of study participants with large breasts.

Telecommunications

- In 3 studies[27,30,31] that assessed communication quality between the remote and patient sites, telesonographers reported no obvious transmission delays in 84.3% to 97.6% of exams.
- In the study by Delestrain et al. (2023),[25] 98% of telesonographers felt the audio was sufficient to communicate with the site assistants. Similarly, all patient site assistants reported feeling comfortable communicating with the remote sonographer using the TUS system.

Scan Duration

- In 3 studies[27,30,31] that assessed clinician satisfaction with TUS scan duration, on average, 85.7% of exams (range, 84.9% to 86.7%) were reported as satisfactory in duration by the teleclinicians.

Accessibility

The accessibility of TUS was assessed most frequently by studies that used patient- and clinician-completed questionnaires to examine the following areas: patient willingness to pay for TUS as a service, patient willingness to undergo TUS in the future, and the use of TUS in routine clinical practice (Table 7). Six of the 11 studies reported this outcome:

- In 3 studies,[27,30,31] 87.1% to 90% of patients were willing to pay a certain amount of extra money to undergo TUS by an expert compared with conventional ultrasound.
- In the same 3 studies, 88.3% to 100% of teledoctors accepted TUS as a routine ultrasound tool in clinical practice.
- Delestrain et al. (2023)[25] reported that 87% of parents agreed to the use of TUS in the future for their child.
- Whittington et al. (2022)[29] found that patient satisfaction with TUS was not significantly associated with age, race, parity, body mass index, rurality, or external referral practice. However, the patient satisfaction analysis was focused on remote exam interpretation following the real-time TUS procedure.
- The relevant study included in the SR by Alhussein et al. (2024)[32] reported that successful clinical application of TUS used social network video call technology, indicating a free and widely available telecommunication tool can be used for TUS application in clinical practice.

Advantages and Challenges of Teleultrasonography

Some potential advantages and challenges associated with TUS application in clinical practice, as reported and perceived by various authors that reviewed the current literature are summarized in Table 3.[12,14,34]

Table 3: Potential Strengths and Challenges Associated With Teleultrasonography

Potential strengths	Potential challenges
Health care system and clinical practice	
• Reduced health care system spending because of lower costs of dedicated imaging centres • Increased diagnostic imaging capacity and variety of exams offered in underserved, rural, or remote regions • Increased equitable access to ultrasound services and specialists • Enhanced ability to deploy in emergency situations • Reduced cost of transporting or temporarily relocating trained clinicians to geographically distant areas • Cost savings associated with transporting patients to health facilities that have ultrasound capacity	• The acquisition costs (including imaging equipment, video conferencing technology, piloting, and troubleshooting) may be high for individual practitioners or small communities using TUS technology, particularly robotic-assisted TUS • Uncertainty around image quality and diagnostic quality compared with conventional ultrasound • Regulations for telehealth practice may be underdeveloped in many countries • No standardized regulatory guidelines regarding patient care responsibilities (e.g., obtaining consent, patient preparation, examination, safety) and professional liability

Potential strengths	Potential challenges
• Lower out-of-pocket costs for patients requiring travel for ultrasound exams • Flexibility in training and supervision of ultrasound operator • Multiple expert opinions are available for consultation and exam review, including for specialty or complex exams • With access to experts, TUS may expand the variety of examinations offered to include more complex or specialty scans • Quicker time to diagnosis and consultation with patients	• Special considerations may be required for transmission and progression of personal data across jurisdictions • Legal regulations may restrict sharing of patient data and images between medical professionals and facilities across jurisdictions • Lack of standardized training and technical protocols, guidelines, and regulations as relates to TUS operation and patient engagement and communication • Complex ultrasound examinations may not be possible without technological advancements and/or the use of AI assistance
Technical implementation	
• Internet bandwidth requirements are low for satisfactory image quality • International standard quality assessment tools exist to grade images • Hand-held portable devices can be used both standalone (without requiring additional hardware) or compatible with Android and iOS devices • Mobile applications may be more user-friendly than traditional ultrasound software (relevant for point-of-care or patient end use) • Certain devices allow immediate sharing and storing of images to a cloud system	• Internet network connectivity is a requirement for both real-time and asynchronous TUS • Software requires regular updates and compatibility is not guaranteed • Subscription and storage fees may increase costs • Devices that require USB power may experience significant battery drain • Hand-held portable devices may have limited diagnostic functionality to be used as a standalone imaging tool, depending on the scope of the requested exam or protocol • Android/iOS based hand-held ultrasound devices require sophisticated mobile devices for application compatibility • The screen size is smaller for TUS devices that connect to mobile devices or tablets • Smaller devices may be susceptible to loss or theft

TUS = teleultrasound.

Summary of Critical Appraisal

Appendix 4 provides details regarding the strengths and limitations of the included primary studies[24-31] (Table 8) and SRs[9,32,33] (Table 9).

Primary Studies

The included studies were explicit in terms of reporting the methodological characteristics required for critical appraisal but had several limitations related to the external and internal validity that may reduce the certainty and generalizability of the findings.

For reporting, the authors of all included studies[24-31] clearly described the objective of the study, the main outcomes to be measured, the intervention of interest, and the main findings. Most authors reported on the characteristics of the participants,[24,26,27,29-31] and the randomized controlled trial compared group differences (i.e., potential confounders) in demographics of the randomized participants. Of the 8 studies, 7 reported adverse events of the intervention and 6 reported patient-related experiences.[24,25,27,29-31] The actual P values

for the main outcomes were reported in all studies. All the predefined outcomes were relevant and valid and adequately reported.

For external validity, the studies were conducted in both inpatient and outpatient hospital or clinic settings (i.e., hospital, disability care centre, mobile car) located in urban and rural or remote areas, representing high ecological validity. However, TUS can require technological (e.g., 5G internet connectivity, robotic system) and human-related resources that may not be widely accessible and, therefore, not representative of the imaging mode received by most patients in rural or remote settings. Furthermore, the patients included in the studies may not be representative of the entire population from which they were selected, which may limit the generalizability of findings to different settings or patient groups outside the study settings; 7 of the 8 primary studies[24-28,30,31] recruited patients from a single centre, and half of the studies[24-26,28] had small sample sizes of less than 50 patients.

For internal validity related to bias, there were potential risks of selection, performance, and detection biases because 7 of the 8 studies were not randomized controlled trials by design.[24-28,30,31] Four studies reported a lack of operator masking (an unawareness of group assignment).[26,28-30] Additionally, 2 studies[26,30] that used robotic TUS excluded certain exams due to limitations with the robotic arm, which may have increased the risk of performance and detection bias to favour TUS. Similarly, robotic-assisted TUS was limited to scanning specific organs due to limitations of the robotic probe, which may have resulted in selection and performance bias.[24-27,30,31] However, statistical tests were used appropriately, and the main outcome measures were valid and reliable.

For internal validity related to confounding, there were some differences between groups in recruitment strategies and in the experience of operators who performed the procedures. The work experience and clinical expertise of the various teleclinicians and TUS operators differed across the studies, and often the exact level of experience was not reported.[24-31] It is possible that lower-skilled teleclinicians and operators could negatively impact procedure-related outcomes. Similarly, each study used a different protocol and length of time to train the teleclinician and operators, particularly with the use of robotic-assisted TUS. Individual differences in learning and mastering the technology may have significantly influenced the interpretation of ultrasound findings.

None of the authors of the included studies identified and adjusted for potential confounding factors in the analyses. None of the authors of the included studies reported whether sample size calculations were performed, leaving it unclear whether any nonsignificant differences in certain outcomes were due to insufficient power in the studies. Similarly, clinical and patient satisfaction assessments were collected only for patients who underwent real-time TUS.[25,27,30,31] Satisfaction with service and care quality was not assessed in the conventional ultrasound group; therefore, no direct or statistical comparisons could be made for these outcomes.

Systematic Reviews

Overall, the 3 SRs met a limited number of the AMSTAR 2 criteria, indicating low to moderate quality of the evidence.

The authors of all 3 SRs[9,32,33] included components of the PICO (population, intervention, comparison, outcome) process that were clearly defined in research questions and inclusion criteria. The reviews were comprehensive in their search strategies, clearly defined their inclusion criteria and objectives, and included a variety of study designs. The literature search strategy was comprehensive and clearly described in all SRs and it used multiple combinations of keywords, enhancing the reproducibility of the reviews. The authors of 1 SR[9] searched the reference lists of the included studies for additional potentially relevant studies. All review authors disclosed the funding sources and potential conflicts of interest but did not report the funding sources or conflicts of interest for the included studies.

One of the 3 SRs[33] reported that study selection was performed in duplicate, and it is unclear if data extraction and quality assessment were also conducted in duplicate for any of the SRs. The SRs did not include a list of excluded studies or reasons for study exclusion.

The review authors of all 3 SRs narratively summarized the findings from the included studies, with limited numerical results, thereby reducing the clarity of findings. Alhussein et al. (2024)[32] noted that a meta-analysis was not conducted due to the heterogeneity of included study designs. None of the SRs included an assessment of methodological quality or heterogeneity among the included studies.

Limitations

This report is limited by the quantity and quality of research identified that met our inclusion criteria. First, the primary studies and SRs identified are at risk of bias due to several important limitations outlined in the Summary of Critical Appraisal section. Only 4 of the 32 studies in the included SRs were relevant to this report, and all showed low to moderate quality of evidence. Additionally, no evidence-based guidelines concerning the use of TUS in clinical practice were identified.

Second, the literature search was limited to English-language articles and articles published within the past 5 years. Therefore, the strength of the conclusions in this report may be limited by the exclusion of relevant articles published before 2019.

Third, this report was limited by clinical scope, which focused on real-time TUS. Although real-time and asynchronous (“store and forward”) methods of TUS are both widely used, this report did not examine the use of asynchronous TUS and its effectiveness compared with in-person ultrasound.

Finally, 6 of the 8 primary studies examined robotic-assisted real-time TUS, which may limit the generalizability of findings to other types of TUS systems. However, this report includes studies published through the height of the COVID-19 pandemic when remote robotic-assisted TUS systems were proposed for screening or diagnosing COVID-19 symptoms.[25] The unprecedented demand on the health care system during that time led to the rapid development and clinical expansion of innovative tools to provide urgently needed ultrasound services in a minimal-contact setting.[35] Therefore, it is possible that the high representation of robotic-assisted TUS systems in this report is reflective of the changing landscape of real-time TUS.

Conclusions and Implications for Decision- or Policy-Making

We reviewed the clinical evidence from 8 primary studies (6 prospective nonrandomized controlled trials;1 randomized noninferiority trial; 1 prospective, parallel, controlled nonrandomized trial) and 3 SRs, all comparing real-time TUS systems (i.e., robotic-assisted, pocket hand-held ECG, general) with conventional in-person ultrasound. The role of ultrasound imaging specialists and the scope of practice varies globally, and this review included various imaging professionals (i.e., sonographer, sonologist, radiologist, specialist physician) that reflect the practices relevant to each study's setting.

The 8 primary studies identified in this report showed high-quality evidence, although most were limited by a single-centre nonrandomized controlled study design and small sample size. The 3 SRs met a limited number of the AMSTAR 2 criteria, showing low to moderate methodological rigour.

Overall, real-time TUS was found to be comparable to conventional in-person ultrasound with regards to diagnostic consistency and exam image quality, and it was well tolerated and accepted by patients and clinicians. However, real-time TUS took, on average, more than 25% (or 6 minutes) longer to complete than in-person ultrasound. For some studies that used robotic-assisted TUS, temporary safety-related complications or discomfort was reported by up to 10% of patients, and technical difficulties occurred in up to 20% of exams. Notably, the included studies performed a wide range of exam types (i.e., abdominal, thyroid, obstetrics, renal, cardiac, pulmonary, and breast exams) and included both comprehensive and point-of-care exams, highlighting the growing role and expanding application of TUS in clinical practice.

To date, most studies report outcomes relating to the technical feasibility and image interpretation of real-time TUS. When there is acceptable variability in population and intervention characteristics, conducting a systematic review with network meta-analysis, when appropriate, may be helpful to understand the relevant differences between real-time TUS and conventional in-person ultrasound.

Considering the current limitations of the body of evidence, future well-controlled larger studies are needed to evaluate care quality beyond feasibility and safety of TUS. This includes examining patient perspectives relating to accessibility (equitable access to services, financial burden) and personal preference and expectations. This may include designing studies that incorporate surveys into both study arms or into the preintervention and postintervention design. Studies that examine the real-world community and health system impact of real-time TUS are also needed to determine the benefit of TUS for increasing access to services and providing timely and accurate diagnoses, particularly in resource-limited settings.

As many real-time TUS devices are more portable and reportedly less expensive and easier to use than traditional ultrasound, they are increasingly available globally. Real-time TUS has been shown to be an effective, accessible, and safe method of imaging patients, which may lead to improved patient outcomes. Other studies have found that TUS is associated with reduced wait times, patient care load, and system-level costs, as well as improved treatment planning and intervention.[1,12-14] Studies that evaluate current clinical unmet needs and training programs with well-defined procedural competencies are needed.[1,12] Finally, regulations supporting the adoption of real-time TUS in clinical practice and development of data-sharing agreements across different legislative spaces are also needed.[12,36]

References

1. Adams SJ, Burbridge B, Obaid H, Stoneham G, Babyn P, Mendez I. Telerobotic Sonography for Remote Diagnostic Imaging: Narrative Review of Current Developments and Clinical Applications. *J Ultrasound Med.* 2021;40(7):1287-1306. PubMed
2. Pian L, Gillman LM, McBeth PB, et al. Potential Use of Remote Telesonography as a Transformational Technology in Underresourced and/or Remote Settings. *Emerg Med Int.* 2013;2013(1):986160. PubMed
3. Bhide A, Datar S, Stebbins K. Ultrasound Imaging - Cheap, Versatile, and Safe (Working Paper 20-003). *Case Histories of Transformational Advances*. Boston (MA): Harvard Business School; 2020: https://www.hbs.edu/ris/Publication%20Files/20-003_8157a0c0-71c9-4f6a-88c7-98cba5294123.pdf. Accessed 2024 Oct 17.
4. Micks T, Sue K, Rogers P. Barriers to point-of-care ultrasound use in rural emergency departments. *CJEM.* 2016;18(6):475-479. PubMed
5. Dowdy DL, Harris RD. Tele-Ultrasound: Meeting Global Imaging Challenges. *Applied Radiology.* 2024;53(1):38-41.
6. Canada Go. Canadian Occupation Projection System (2022-2031). 2022; https://occupations.esdc.gc.ca/sppc-cops/.4cc.5p.1t.3onsummaryd.2tail@-eng.jsp?tid=116, 2024 Nov 26.
7. Dearing E, Boniface K. Tele-Ultrasound. In: Sikka N, ed. *A Practical Guide to Emergency Telehealth.* New York (NY): Oxford University Press; 2021.
8. Li XL, Sun YK, Wang Q, et al. Synchronous tele-ultrasonography is helpful for a naive operator to perform high-quality thyroid ultrasound examinations. *Ultrasonography.* 2022;41(4):650-660. PubMed
9. Duarte ML, Dos Santos LR, Iared W, Peccin MS. Telementored ultrasonography: a narrative review. *Sao Paulo Med J.* 2022;140(2):310-319. PubMed
10. Executive Summary. *Recommendation Report: Diagnostic Medical Sonographers – August 31, 2016*. New Westminster (BC): Health Sciences Association of British Columbia; 2016: https://www.hsabc.org/sites/default/files/uploads/Executive%20Summary_1.pdf. Accessed 2024 Oct 8.
11. Strategic Plan 2023-2025. Ottawa (ON): Sonography Canada; 2022: https://sonographycanada.ca/app/uploads/2022/11/Sonography-Canada-Strategic-Plan-2023-2025-Member-version.pdf. Accessed 2024 Oct 8.
12. Barberato SH, Lopes M. Echoes of Telecardiology Guideline. *Arq Bras Cardiol.* 2020;114(1):130-132. PubMed
13. Hanna TN, Steenburg SD, Rosenkrantz AB, Pyatt RS, Jr., Duszak R, Jr., Friedberg EB. Emerging Challenges and Opportunities in the Evolution of Teleradiology. *AJR Am J Roentgenol.* 2020;215(6):1411-1416. PubMed
14. Uschnig C, Recker F, Blaivas M, Dong Y, Dietrich CF. Tele-ultrasound in the Era of COVID-19: A Practical Guide. *Ultrasound Med Biol.* 2022;48(6):965-974. PubMed
15. Chen RJ. Teleultrasound in Remote and Austere Environments. *Journal of Mobile Technology in Medicine.* 2023;9(1):43-47.
16. Marsh-Feiley G, Eadie L, Wilson P. Telesonography in emergency medicine: A systematic review. *PLoS ONE.* 2018;13(5):e0194840. PubMed
17. Salerno A, Tupchong K, Verceles AC, McCurdy MT. Point-of-Care Teleultrasound: A Systematic Review. *Telemed J E Health.* 2020;26(11):1314-1321. PubMed
18. Constantinescu EC, Nicolau C, Săftoiu A. Recent Developments in Tele-Ultrasonography. *Curr Health Sci J.* 2018;44(2):101-106. PubMed
19. Tenajas R, Miraut D, Illana CI, Alonso-Gonzalez R, Arias-Valcayo F, Herraiz JL. Recent Advances in Artificial Intelligence-Assisted Ultrasound Scanning. *Applied Sciences.* 2023;13(6):3693.
20. Downs SH, Black N. The feasibility of creating a checklist for the assessment of the methodological quality both of randomised and non-randomised studies of health care interventions. *J Epidemiol Community Health.* 1998;52(6):377-384. PubMed
21. Shea BJ, Reeves BC, Wells G, et al. AMSTAR 2: a critical appraisal tool for systematic reviews that include randomised or non-randomised studies of healthcare interventions, or both. *BMJ.* 2017;358:j4008. PubMed

22. Agree Next Steps Consortium. The AGREE II Instrument. Hamilton (ON): AGREE Enterprise; 2017: https://www.agreetrust.org/wp-content/uploads/2017/12/AGREE-II-Users-Manual-and-23-item-Instrument-2009-Update-2017.pdf. Accessed 2024 Oct 8.

23. Liberati A, Altman DG, Tetzlaff J, et al. The PRISMA statement for reporting systematic reviews and meta-analyses of studies that evaluate health care interventions: explanation and elaboration. *J Clin Epidemiol.* 2009;62(10):e1-e34. PubMed

24. Chai HH, Ye RZ, Xiong LF, et al. Successful Use of a 5G-Based Robot-Assisted Remote Ultrasound System in a Care Center for Disabled Patients in Rural China. *Front Public Health.* 2022;10:915071. PubMed

25. Delestrain C, Jung C, Malterre A, et al. Comparison of telerobotic and conventional ultrasonography in children: a crossover bicentric pilot study. *Transl Pediatr.* 2023;12(5):816-826. PubMed

26. Duan S, Liu L, Chen Y, et al. A 5G-powered robot-assisted teleultrasound diagnostic system in an intensive care unit. *Crit Care.* 2021;25(1):134. PubMed

27. He T, Pu YY, Zhang YQ, et al. 5G-Based Telerobotic Ultrasound System Improves Access to Breast Examination in Rural and Remote Areas: A Prospective and Two-Scenario Study. *Diagnostics (Basel).* 2023;13(3):18. PubMed

28. Wejner-Mik P, Teneta A, Jankowski M, et al. Feasibility and clinical utility of real-time tele-echocardiography using personal mobile device-based pocket echocardiograph. *Arch Med Sci.* 2019;18(4):998-1003. PubMed

29. Whittington JR, Hughes DS, Rabie NZ, et al. Detection of Fetal Anomalies by Remotely Directed and Interpreted Ultrasound (Teleultrasound): A Randomized Noninferiority Trial. *Am J Perinatol.* 2022;39(2):113-119. PubMed

30. Zhang YQ, Sun LP, He T, et al. A 5G-based telerobotic ultrasound system provides qualified abdominal ultrasound services for patients on a rural island: a prospective and comparative study of 401 patients. *Abdom Radiol.* 2024;49(3):942-957. PubMed

31. Zhang YQ, Yin HH, He T, Guo LH, Zhao CK, Xu HX. Clinical application of a 5G-based telerobotic ultrasound system for thyroid examination on a rural island: a prospective study. *Endocrine.* 2022;76(3):620-634. PubMed

32. Alhussein M. Use of Real-Time Remote Tele-mentored Ultrasound Echocardiography for Cardiovascular Disease Diagnosis in Adults: A Systematic Review. *Ultrasound Med Biol.* 2024;50(6):779-787. PubMed

33. Salerno A, Kuhn D, El Sibai R, Levine AR, McCurdy MT. Real-Time Remote Tele-Mentored Echocardiography: A Systematic Review. *Medicina (Kaunas).* 2020;56(12):02.

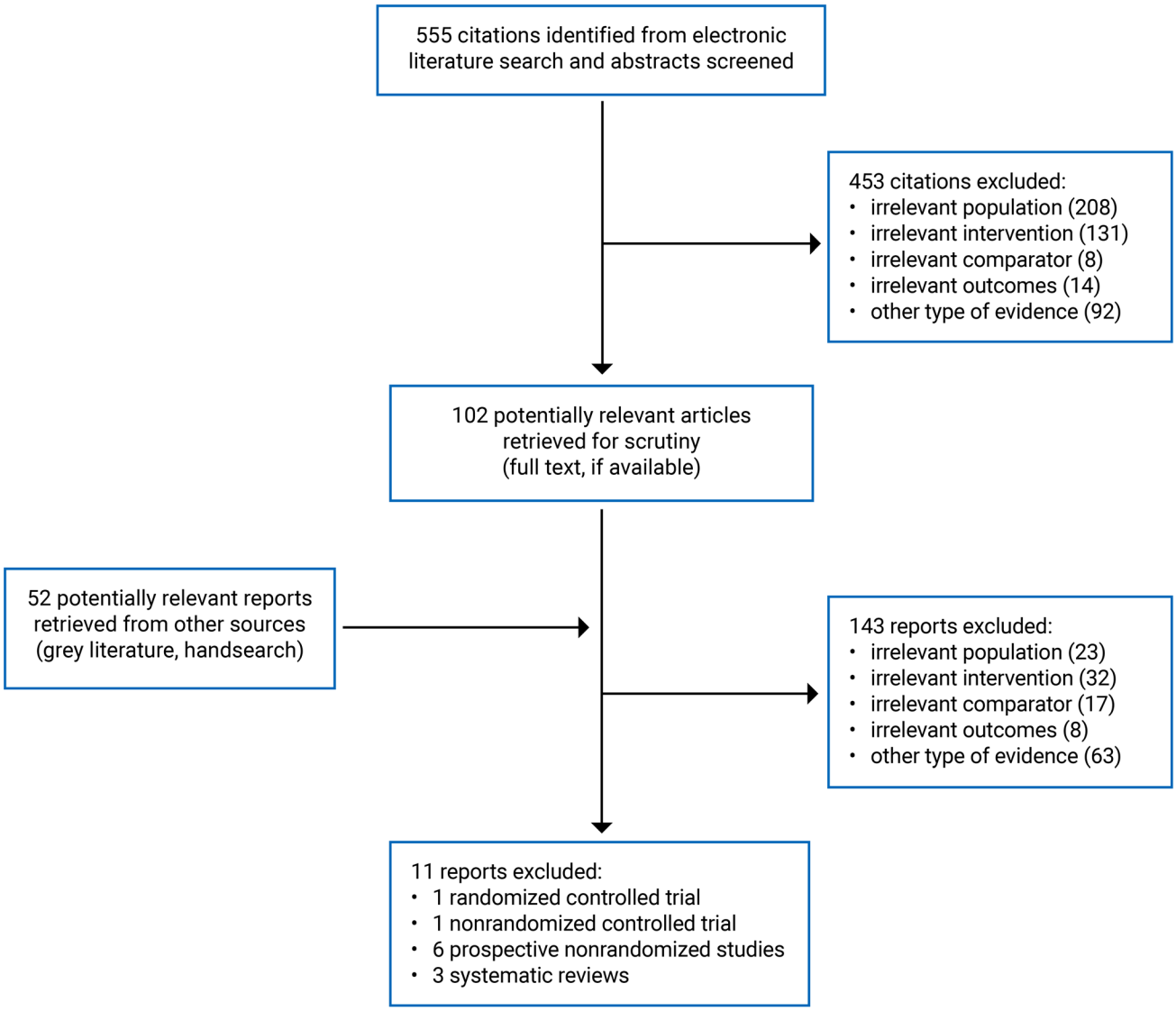
34. Recker F, Höhne E, Damjanovic D, Schäfer VS. Ultrasound in Telemedicine: A Brief Overview. *Applied Sciences.* 2022;12(3):958.

35. Adams SJ, Burbridge B, Chatterson L, McKinney V, Babyn P, Mendez I. Telerobotic ultrasound to provide obstetrical ultrasound services remotely during the COVID-19 pandemic. *J Telemed Telecare.* 2022;28(8):568-576. PubMed

36. Villani S, Pana J, Madubuobi H, Browne IL, Kimbrow LA, Reece SCM. Telerobotic Sonography for Remote Diagnostic Imaging. *J Ultrasound Med.* 2023;42(6):1375-1376. PubMed

Appendix 1: Selection of Included Studies

Figure 3: Selection of Included Studies



Appendix 2: Characteristics of Included Publications

Please note that this appendix has not been copy-edited.

Table 4: Characteristics of Included Primary Studies

Study citation, country, funding source	Study design, outcomes	Population characteristics	Intervention and comparator(s)
Zhang et al. (2024)[30] **Country:** China **Funding source:** Various	Prospective non-RCT design **Type of ultrasound:** Robotic **Sample size**: 401 **Relevant Outcomes:** • diagnostic consistency • image quality • safety • scan duration • patient acceptance	Patients scheduled for an abdominal ultrasound examination. **Mean age, years ± SD:** 54.96 ± 15.43 (range: 12 to 88 years) **Sex, %:** • Female: 54.1 • Male: 45.9	**Intervention:** 5G-based telerobotic abdominal ultrasound (MGIUS-R3, MGI Tech Co., Ltd., Shenzhen, China). Teleultrasound Operator: Onsite assistant who received training session; tele-radiologist guided. **Comparator:** Conventional in-person ultrasound with the Wisconic Clover 60. Conventional ultrasound operator: Onsite radiologist with 5 to 15 years of clinical experience in abdominal ultrasound.
Delestrain et al. (2023)[25] **Country:** France **Funding source:** Grant from European Space Agency	Prospective interventional crossover design **Type of ultrasound:** Robotic **Sample size**: 38 **Relevant Outcomes:** • diagnosis agreement • patient satisfaction • safety • scan duration	Children aged 1 to 10 years in 2 regional hospitals in the pediatric department, requiring lung, abdominal, or cardiac ultrasound **Mean age, years ± SD:** 5.7 ± 2.7	**Intervention:** MELODY telerobotic ultrasound system Teleultrasound Operator: Pediatric caregivers with specific skills in using the MELODY system with children; expert sonographer guided. **Comparator:** Conventional in-person ultrasound with the Mindray TE7 system. Traditional ultrasound operator: Senior expert sonographers
He et al. (2023)[27] **Country:** China **Funding source:** Various	Prospective non-RCT design **Type of ultrasound:** Robotic **Scenario A:** Teleultrasound exam and conventional exam conducted at a rural hospital **Scenario B:** Teleultrasound exam conducted in mobile car setting in remote setting. **Sample size**: 83 (Scenario 1: 63; Scenario 2: 20) **Relevant Outcomes:** • diagnostic agreement • image quality	Patients referred for breast examinations. **Mean age, years ± SD:** • Scenario 1: 53.5 ± 13 • Scenario 2: 41.8 ± 8.7 **Sex, %:** • Scenario 1: ◦ Female: 96.8 ◦ Male: 3.2 • Scenario 2: ◦ Female: 100 ◦ Male: 0	**Intervention:** 5G based telerobotic ultrasound-MGIUS-R3; MGI Tech Co., Ltd., Shenzhen, China Teleultrasound Operator: Onsite assistant- hospital auxiliary personnel with 1 year experience; expert sonographer guided. **Comparator:** Conventional in-person ultrasound onsite sonologist with 15 years of experience. Traditional ultrasound operator: Sonologist with 15 years of experience.

Study citation, country, funding source	Study design, outcomes	Population characteristics	Intervention and comparator(s)
	• safety • scan duration		
Chai et al. (2022)[24] **Country:** UK **Funding source:** Zhejiang Medicine Scientific and Technology Project	Prospective non-RCT **Type of ultrasound:** Robotic **Sample size**: 49 **Relevant Outcomes:** • diagnosis agreement • image quality • scan duration • safety (complications: pain, skin lesions, swelling, bleeding, crush injuries)	Adult patients located at a remote long-term care centre requiring abdominal ultrasound. **Mean age, years (range):** 61 (19 to 91) **Sex, %:** • Female: 0 • Male: 100	**Intervention:** 5G-base robot-assisted remote ultrasound Teleultrasound Operator: Sonographers with 5-year experience **Comparator:** Conventional bedside ultrasound Traditional ultrasound operator: Sonographers with 5 years of experience
Zhang et al. (2022)[31] **Country:** China **Funding source:** Various	Prospective, parallel, and controlled study non-RCT design **Type of ultrasound:** Robotic **Sample size**: 139 **Relevant Outcomes:** • diagnostic consistency • image quality • patient acceptance • safety • scan duration	Patients undergoing thyroid ultrasound. **Mean age, years ± SD:** 58.6 ± 12.7 **Sex, %:** • Female: 76.3 • Male: 23.7	**Intervention:** 5G-based telerobotic ultrasound (MGIUS-R3, MGI Tech Co., Ltd., Shenzhen, China) Teleultrasound Operator: Onsite assistant who received systematic training session; expert sonographer guided. **Comparator:** Conventional ultrasound examination with the Wisonic Clover 60 system. Traditional ultrasound operator: Doctor with 15 years of clinical experience in thyroid ultrasound
Whittington et al. (2022)[29] **Country:** US **Funding source:** Centers for Disease Control and Prevention National Center on Birth Defects and Developmental Disabilities	Randomized noninferiority study design **Type of ultrasound:** General **Sample size**: 585 **Relevant Outcomes:** • patient satisfaction • sensitivity	Women referred to a maternal-fetal medicine clinic to assess fetal abnormalities. **Mean age, years ± SD:** • Intervention: 30.4 ± 6.7 • Comparator: 29.5 ± 6.6 **Race, %:** • Intervention: ◦ Black: 24.2 ◦ White: 70.1 ◦ Other: 5.8 • Control group: ◦ Black: 22.7 ◦ White: 69.1 ◦ Other: 8.3 No significant differences	**Intervention:** Teleultrasound and telemedicine counselling; remotely directed and interpreted ultrasound (n = 294) Teleultrasound Operator: Registered diagnostic medical sonographers. **Comparator:** Conventional in-person ultrasound and counselling (n = 291) Traditional ultrasound operator: Registered diagnostic medical sonographers.

Study citation, country, funding source	Study design, outcomes	Population characteristics	Intervention and comparator(s)
		in demographics between groups.	
Duan et al. (2021)[26] **Country:** China **Funding source:** Medical Research Council	Prospective non RCT **Type of ultrasound:** Robotic **Sample size**: 32 **Relevant Outcomes:** • diagnosis agreement • image quality • scan duration • safety	Patients in the intensive care unit with stable conditions requiring ultrasound to assess for pleural and abdominal effusion. **Mean age, years (range):** 61 ± 20 (13 to 94) • Sex, %: ◦ Female: 37.5 ◦ Male: 62.5	**Intervention:** 5G powered robot-assisted teleultrasound (MGIUS-R3) Teleultrasound operator: Ultrasound physician **Comparator:** conventional in-person ultrasound Teleultrasound operator: Ultrasound physician
Wejner-Mik et al. (2019)[28] **Country:** UK **Funding source:** Medical Research Council	Prospective non RCT **Type of ultrasound:** Pocket-sized hand-held ECG **Sample size**: 30 **Relevant Outcomes:** • diagnosis agreement • diagnostic correlation • image quality	Patients admitted to various hospital departments (i.e., infectious diseases, internal medicine, and cardiology) for TTE. **Mean age, years (range):** 54 ± 14 (24 to 74) **Sex, %:** • Female: 40 • Male: 60 BMI, kg/m^2: 27 ± 6	**Intervention:** Inexperienced operator performed focused TTE using Lumify with real-time collaboration with an experienced cardiologist Teleultrasound operator: Either a nurse or 2 students trained in using the device **Comparator:** Conventional bedside TTE Traditional ultrasound operator: Experienced cardiologist

BMI = body mass index; ICU = intensive care unit; RCT = randomized controlled trial; RTMUS = real-time telementored echocardiography; SD = standard deviation; SR = systematic review; TTE = transthoracic echocardiographic examination.

Table 5: Characteristics of Included Systematic Reviews

Study citation, country, funding source	Study design, outcomes	Population characteristics	Intervention and comparator(s)	Included studies
Systematic reviews				
Alhussein et al. (2024)[32] **Country:** US **Funding source:** None	SR of various study designs (i.e., feasibility, evaluation, pilot, experimental) **Type of ultrasound:** RTMUS **Sample size**: 30 (from relevant study included) **Relevant Outcomes:**	Use of RTMUS in adult population.	**Intervention:** Various RTMUS modalities **Comparator:** Various	1 of 9 studies relevant to present report. Arbille et al. (2014) **Intervention:** Robotic ultrasound Teleultrasound Operator: Nonsonographer operator; sonographer guided **Comparator:** Conventional TTE.

Study citation, country, funding source	Study design, outcomes	Population characteristics	Intervention and comparator(s)	Included studies
	• diagnosis accuracy • image quality			Traditional ultrasound operator: Sonographer
Duarte et al. (2021)[9] **Country:** Brazil **Funding source:** None	SR of various study designs (e.g., prospective, RCT, cohort, cross-sectional) **Type of ultrasound:** Various but all requiring synchronous transmission and real-time oversight. **Sample size:** 115 (from relevant study included) **Relevant Outcomes:** Diagnostic confidence	Use of teleultrasound in various settings with experience ultrasound physician as distant mentor.	**Intervention:** Various teleultrasound methods **Comparator:** Various	1 of 10 studies relevant to present report. Kim et al. (2015) **Population:** Pediatric cases with suspected acute appendicitis in the emergency department **Intervention:** Telementored real-time ultrasound with a resident and expert sonographer Teleultrasound operator: Emergency medicine residents; sonographer guided **Comparator:** Expert-performed conventional ultrasound. Traditional ultrasound operator: Expert
Salerno et al. (2020)[33] **Country:** US **Funding source:** None	SR of various study designs (e.g., prospective, RCT, cohort, cross-sectional) **Type of ultrasound:** Various but all requiring synchronous transmission and real-time oversight. **Sample size**: 98 (from relevant study included) **Relevant Outcomes:** Diagnostic confidence	Use of RTMUS in various settings in adults	**Intervention:** Various teleultrasound methods **Comparator:** Various	2 of 15 studies relevant to present report. **#1.# Afset et al. (1996)** **Country:** Norway **Population:** Patients with known or suspected heart disease (n = 38) **Intervention:** Learner's measurement with real-time remote telementored echocardiography Teleultrasound Operator: learner (inexperienced doctor); sonographer guided **Comparator:** Expert-performed conventional ultrasound. Traditional ultrasound operator: expert sonographer **#2.# Kim et al. (2017)** **Population:** Patients presenting to the ICU and requiring an ECG exam

Study citation, country, funding source	Study design, outcomes	Population characteristics	Intervention and comparator(s)	Included studies
				(n = 60). **Intervention:** Novice sonographer performing ECG with a remote offsite expert. Teleultrasound operator: Novice sonographer; sonographer guided **Comparator:** Expert-performed conventional ultrasound. Traditional ultrasound operator: onsite cardiologist

RTMUS = real-time telementored echocardiography; SR = systematic review; TTE = transthoracic echocardiographic examination.

Appendix 3: Main Study Findings

Table 6: Summary of Findings — Procedural Effectiveness–Related Outcomes

Citation study	Primary study	Image quality, score		Mean scan duration, minutes		Diagnostic consistency
		TUS	Conventional ultrasound	TUS	Conventional ultrasound	
Primary studies						
—	**Zhang et al. (2024)**[30]	4.54 ± 0.63 Each scanned organ was visible in 97.9% of the ultrasound exams using TUS.	4.57 ± 0.61 **P = 0.112** Image quality scores were similar between groups.[a]	12.54 ± 3.20[b] (range 6 to 25)	7.23 ± 2.10 (range 5 to 16) **P = 0.001** TUS took significantly longer than conventional ultrasound.[b]	• Good consistency in the diagnosis of 29 types of disease between the 2 methods: κ = 0.773 to 1.000 • General consistency was achieved in diagnosing renal masses and bladder calculi: κ = 0.664 and 0.661 • No significant group differences in measurements for the aorta, portal vein, gallbladder, kidney (longitudinal diameter), prostate, and uterus. • Small but statistically significant differences were found in the transverse diameters of the kidney (P < 0.05).
—	**Delestrain et al. (2023)**[25]	18.9 ± 3.6	23.1 ± 10.5 **P = 0.011** Image quality score was significantly higher for the conventional ultrasound group.[c]	26 ± 12.5 (range 18 to 30)	13.9 ± 11.2 (range 9 to 15) **P < 0.0001** TUS took significantly longer than conventional ultrasound.	• Substantial agreement between the telerobotic and conventional ultrasound (κ = 0.74, 95% CI, 0.53 to 0.94; P < 0.005). • Abdominal organs and abnormalities were similarly visualized except for the spleen (95%) and pancreas (79%). • Visualization and total lung score were similar between telerobotic and conventional ultrasound.[d] • Cardiac reliable diagnoses with both and nonsignificant differences in measurements were identified. • TUS was able to detect 2 anatomic features, atrial septal defect and patent

Citation study	Primary study	Image quality, score		Mean scan duration, minutes		Diagnostic consistency
		TUS	Conventional ultrasound	TUS	Conventional ultrasound	
						foramen oval, while the conventional ultrasound did not.
—	**He et al. (2023)**[27]	4.86	4.90 **P = 0.159** Image quality did not differ significantly between groups.[e]	10.3 +/− 3.3 (range 5 to 22)	7.6 +/− 3.0 (range 4 to 16) **P = 0.017** TUS took significantly longer than conventional ultrasound.	• 32 of the 34 breast nodules identified using TUS were consistent with those detected using conventional ultrasound (n = 35). • No significant differences between the TUS and conventional ultrasound examinations in the transverse and anteroposterior diameter measurements of the same breast nodules and axillary lymph nodes • Good interobserver agreement between groups for features of the same breast nodules for shape, orientation, margin, echo pattern, posterior features, calcifications, and Bi-RADS[f] category: ICC = 0.893, 0.795, 0.874, 1.000, 0.963, 0.882, and 0.984, respectively)
—	**Chai et al. (2022)**[24]	4.7[g] (IQR 4.5 to 5.0) 68.7% images were scored 5/5	5[g] (IQR 4.7 to 5.0) **P = 0.176** 73.1% of images were scored 5/5 Image quality did not differ significantly between groups.[a]	12.2 ± 4.5 (range: 5 to 26)	7.5 ± 1.8 (range: 5 to 13) **P < 0.001** TUS took significantly longer than conventional ultrasound.	• Overall diagnosis results similar with no significant differences between ultrasound methods (McNemar value = 0.727, kappa value = 0.601 P < 0.001) • 62 and 64 lesions out of 67 lesions were detected by TUS and conventional ultrasound, respectively.
—	**Zhang et al. (2022)**[31]	4.63 ± 0.60 69.8% images were scored 5/5	4.65 ± 0.61 **P = 0.102** Image quality did not differ significantly between groups.[h]	5.57 ± 2.20 (range 2 to 13)	5.23 ± 2.1 (range 2 to 15) **P = 0.164** No significant difference in scan	• Diameter measurement of the thyroid, cervical lymph nodes, and thyroid nodules were not significantly different between methods (P > 0.05) • 124 and 127 thyroid nodules were detected by TUS and conventional

Citation study	Primary study	Image quality, score		Mean scan duration, minutes		Diagnostic consistency
		TUS	Conventional ultrasound	TUS	Conventional ultrasound	
					duration between groups.	ultrasound, respectively; 122 were the same nodules. • Good agreement achieved in the ultrasound features (component, echogenicity, shape, and calcification) and ACR TI-RADS category of the same thyroid nodules between groups (ICC = 0.788 to 0.863).
—	**Whittington et al. (2022)**[29]	—	—	—	—	• TUS is not inferior to conventional ultrasound for the detection of fetal anomalies: ◦ **TUS:** Sensitivity = 85% (63.1% to 93.9% CI) ◦ **Conventional ultrasound:** Sensitivity = 82.14% (63.1% to 93.9% CI) • Specificity, NPV, PPV, and accuracy were than 94% for both groups. • Near perfect agreement with reference standard for anomaly detection: ◦ **TUS:** k[i] = 0.89; Conventional ultrasound: k = 0.87.
—	**Duan et al. (2021)**[26]	4.73[a] (Expert 1: 4.75 Expert 2: 4.71) 70% images were scored 5/5	NR	17 +/− 7[b] (range 9 to 37)	NR	• The overall diagnosis results were basically the same, and there was no significant difference in the level of diagnosis (McNemar value near 1, k[j] = 0.711, P < 0.001) • No significant difference in the diagnosis of 14 disease types and the level of consistency was high (k = 1) • 5 cases of inconsistent diagnoses between the 2 groups: ◦ 3 cases where a positive diagnosis

Citation study	Primary study	Image quality, score		Mean scan duration, minutes		Diagnostic consistency
		TUS	Conventional ultrasound	TUS	Conventional ultrasound	
						was missed by the TUS group ◦ 2 cases where a positive diagnosis was missed by the conventional ultrasound group.
—	**Wejner-Mik et al. (2019)**[28]	Acceptable image quality sufficient for diagnostic use was obtained in over 70% of patients for all the basic views and showed good correlation with conventional ultrasound.[k]	—	12 ± 4	—	• fTTE (TUS) was feasible in all patients: • The dimensions of left ventricle left atrium, and the aorta obtained during fTTE showed good correlation with TTE (conventional ultrasound): r = 0.89, r = 0.82, r = 0.92 respectively (P < 0.0001). • Very good agreement between groups on morphological and functional valvular abnormalities (k = 0.648 to 0.823). • The correlation for TAPSE[l] measurements was less pronounced (r = 0.52; P = 0.0037).
Systematic reviews						
Alhussein et al. (2024)[32]	Arbeille et al. (2014)	Quality of cardiac views was lower than that of the reference	—	—	—	• TUS generated similar measurements to the conventional ultrasound group in 93% to 100% of cases without significant differences (P > 0.05). • TUS detected 86% of the valve leaks or aortic stenoses • TUS provided reliable and acceptable measurements in 86% and 93% of cases respectively, with no false-positive diagnoses.
Duarte et al. (2021)[9]	Kim et al. (2015)	—	—	—	—	• Diagnostic values were similar between TUS and conventional ultrasound groups: ◦ **TUS:** sensitivity: 1.000, specificity: 0.975, PPV: 0.947, NPV: 1.000

Citation study	Primary study	Image quality, score		Mean scan duration, minutes		Diagnostic consistency
		TUS	Conventional ultrasound	TUS	Conventional ultrasound	
						◦ **Conventional ultrasound:** sensitivity: 1.000, specificity: 0.987, PPV: 0.973, NPV: 1.000
Salerno et al. (2020)[33]	Afset et al. (1996)	—	—	—	—	• No difference between TUS and conventional ultrasound of mean M-mode and Doppler variables.
	Kim et al. (2017)	—	—	—	—	• There was excellent agreement between the 2 methods, with a correlation coefficient of 0.94 (P < 0.001)

ACR TI-RADS = American College of Radiology Thyroid Imaging Reporting and Data System; Bi-RADS = Breast Imaging Reporting and Data System, fTTE = focused transthoracic echocardiographic examination; NPV = negative predictive value; NR = not reported; PPV = positive predictive value; TAPSE = tricuspid annular plane systolic excursion; TTE = transthoracic echocardiographic examination; TUS = teleultrasonography.

Note: This table has not been copy-edited.

[a]The subjective quality scoring method (MOS: Mean Opinion Score) was used to score the quality of the transmitted ultrasound images on the basis of an internationally prescribed 5-level absolute evaluation scale (5 points: No deterioration in the image quality is observed at all, very good; 4 points: a change in image quality can be seen but viewing is unhindered, good; 3 points: it can be clearly seen that the image quality has deteriorated, which hinders viewing slightly, fair; 2 points: viewing is hindered, poor; 1 point: viewing is severely hindered, very poor.

[b]Scan duration included diagnosis consultation time.

[c]The image quality was qualitatively scored from 1 (very poor) to 5 (excellent), and a visualization score, expressed as a percentage, was calculated with respect to the reference ECG.

[d]A total lung ultrasound (LUS) score was calculated: 6 lung regions of interest, delineated by a parasternal line, anterior axillary line, posterior axillary line, and paravertebral line, were examined on each side. All regions were characterized, and a score based on aeration from normal (0 score) to complete loss of lung aeration (3 scores) was calculated. The LUS score was calculated as the sum of the 12 regional scores.

[e]The scoring was as follows: 1 point: very poor (image quality is severely impaired); 2 points: poor (image quality is impaired); 3 points: fair (image quality hinders viewing slightly but acceptable for interpretation); 4 points: excellent (minor suggestions for improvement but viewing is unhindered); 5 points: perfect (no suggestion for improvement).

[f]The ultrasound characteristics and categories of the breast nodules were assessed based on the BI-RADS of the American College of Radiology.

[g]Medians were reported for image quality scores.

[h]The quality of the ultrasound images was scored using a five-point Likert scale (5 points: perfect, no suggestions for improvement of ultrasound image quality; 4 points: excellent, minor suggestions for improvement of ultrasound image quality; 3 points: fair, ultrasound image quality is acceptable for interpretation; 2 points: poor, ultrasound image quality may affect the interpretation; 1 point: meaningless, ultrasound images were not meaningful or undiagnosable).

[i]The levels of agreement (kappa) are characterized by Landis and Koch (1977) as slight agreement (0 to 0.20), fair (0.21 to 0.40), moderate (0.41 to 0.60), substantial (0.61 to 0.80), and almost perfect agreement (0.81 to 1.00).

[j]Kappa ≥ 0.75 indicated there was good consistency between the 2; 0.75 > kappa ≥ 0.4 indicated there was general consistency between the 2; kappa < 0.4 indicated poor consistency.

[k]Quality (the possibility of interpretation) of acquired images was graded as acceptable or unacceptable.

[l]Right ventricular function was assessed using TAPSE.

Table 7: Summary of Findings — Care and Service Quality–Related Outcomes

Citation study	Primary study	Complications/safety	Patient satisfaction	Clinician satisfaction	Accessibility
Primary studies					
—	**Zhang et al. (2024)**[30]	• 8.4% of patients reported pain during the examination. • Overall, the TUS provided a high level of safety.	• 90.1% indicated no discomfort with ultrasound robotic arm. • 96% of patients were not afraid of the robotic arm. • 85.8% of patients were entirely or somewhat satisfied with the duration of TUS. • 95.3% of patients accepted the telerobotic ultrasound exam. • More than 90% and were satisfied with the remote consultation.	• Tele-radiologists reported: • 83.3% satisfaction with TUS exams. • 85.5% satisfaction of the duration. • 11.8% of the examinations were difficult. • 15.7% of exams were felt to have transmission delays.	• 90% of patients were willing to pay a certain amount of extra money for TUS by an expert. • 88.3% of tele-radiologists accepted TUS as a routine ultrasound tool in clinical practice.
—	**Delestrain et al. (2023)**[25]	• Two patients experienced pain with the telerobotic exam. • No severe adverse events were reported.	• 95% of parents felt comfortable communicating with the TUS-sonographer remotely. • 45% of parent reported their children felt less pressure with the telerobotic system vs the conventional system. • Conversely, 16% of parents reported that their children felt more pressure with the tele robotic system vs the conventional system. • 92% of parents felt comfortable knowing someone elsewhere was controlling the TUS probe.	• 98% of TUS-sonographers felt the audio was sufficient to communicate with site assistant. • 34% of TUS-sonographers reported the handling of the remote ultrasound probe resulted in more physical strain than conventional ultrasound. • 100% of patient site assistants felt comfortable communicating with the remote expert. • 16% of patient site assistants felt that holding the robotic system caused significant physical strain.	• 87% of parents agreed to the use of TUS in the future for their child.

Citation study	Primary study	Complications/safety	Patient satisfaction	Clinician satisfaction	Accessibility
—	**He et al. (2023)**[27]	• No injuries reported during TUS	• 91.6% of patients reported no discomfort or uneasiness during TUS. • 94% of patients were not afraid of the robotic arm (TUS). • 92.7% of patients considered the duration of the TUS exam acceptable. • 90.4% of patients indicated acceptance of the TUS system for future exams.	• Tele-sonologists survey: • 97.6% reported no obvious delay during the TUS exam. • 81.9% reported no difficulty during the TUS exam. • 86.7% were satisfied with the exam duration. • Some expressed concern in the scope of scanning of patients with large breasts.	• 89.2% of patients were willing to pay an extra fee for it in the future • 84.3% of tele-sonologists were willing to use the TUS system as a routine exam tool.
—	**Chai et al. (2022)**[24]	• No patient hurt by robot arm • All patients completed the TUS exam.	• No patient complained of discomfort	—	—
—	**Zhang et al. (2022)**[31]	• 7.2% patients reported neck discomfort or suffocation at the trachea.	• 92.8% patients felt comfortable during the TUS exam. • 85.6% patients accepted the telerobotic ultrasound. • 89.2% of patients reported no fear of the robotic arm. • 94.3% of patients were completely or somewhat satisfied with the duration of the telerobotic ultrasound exam. • 10.8% patients felt nervous when robotic arm was moved around neck.	• Tele-doctors reported that: ◦ 85.6% of exams did not have significant TUS transmission delays. ◦ 98.6% of exams were accepted. ◦ 90.6% of the telerobotic system exams were performed without difficulty. ◦ 9.4% of exams were difficult to perform. ◦ 84.9% were satisfied with the duration of the TUS exam.	• 87.1% of patients were willing to pay an extra fee for the telerobotic ultrasound. • 100% of tele-doctors believed that the TUS system could be used as a routine tool.

Citation study	Primary study	Complications/safety	Patient satisfaction	Clinician satisfaction	Accessibility
—	**Whittington et al. (2022)**[29]	—	• Patient satisfaction was more than 95% on all measuring relating to remote interpretation following TUS.	—	• Patient satisfaction was not significantly associated with age, race, parity, BMI, gestational age, rurality, or referral practice.
—	**Duan et al. (2021)**[26]	• No reported complications related to the TUS exam. • All vital signs of the patients showed no significant changes.	—	—	—
—	**Wejner-Mik et al. (2019)**[28]	—	—	—	—
Systematic Reviews					
Alhussein et al. (2024)[32]	Arbeille et al. (2014)	—	—	—	—
Duarte et al. (2021)[9]	Kim et al. (2015)	—	—	—	—
Salerno et al. (2020)[33]	Afset et al. (1996)	—	—	—	—
	Kim et al. (2017)	—	—	—	• The offsite expert was able to perform the exam remotely via a social network video call by mentoring the onsite novice sonographer.

TUS = teleultrasonography.

Note: This table has not been copy-edited.

Appendix 4: Critical Appraisal of Included Publications

Please note that this appendix has not been copy-edited.

Table 8: Strengths and Limitations of the Included Primary Studies Using the Downs and Black Checklist[20]

Strengths	Limitations
Zhang et al. (2024)[30]	
• The objective of the study, study design, the main outcomes to be measured, the characteristics of the participants included in the study, the interventions of interest, and the main findings were clearly described. • The training level of the operators and was described. • Actual probability values were reported for the main outcomes. • Data on patient discomfort was collected for the intervention arm. • Safety outcomes including adverse events of the intervention were reported. • Statistical tests were used appropriately, and the main outcome measures were accurate and reliable.	• The study has limited generalizability due to the single-centre design and limited number of patient with a high BMI. The analyses did not adjust for confounding factors. • The authors did not report on the use of masking. • The study has limited generalizability due to its focus on 5G, which may be limited to regions with access to this technology. • Certain exams were not carried out due to limitation with the robotic arm, which may have introduced bias. • The study did not report whether sample size was calculated. • The study did not report on patient discomfort in the comparator arm. • Safety outcomes were not directly measured.
Delestrain et al. (2023)[25]	
• The objective of the study, study design, the main outcomes to be measured, the interventions of interest, and the main findings were clearly described. • The study design included 2 hospitals which increases external validity. • The onsite sonographer was masked to the results of the intervention. • Actual probability values were reported for the main outcomes. • Patient caregivers, clinicians, and site assistants were asked to assess the intervention. • Safety outcomes including adverse events of the intervention were reported. • Statistical tests were used appropriately, and the main outcome measures were accurate and reliable. • Interobserver reproducibility was measured.	• The study has limited generalizability due the focused age group. • The characteristics of the participants included in the study and participant inclusion criteria were not well described. • The study did not report whether sample size was calculated.
He et al. (2023)[27]	
• The objective of the study, study design, the main outcomes to be measured, the characteristics of the participants included in the study, the interventions of interest, and the main findings were clearly described. • The intervention arm included 2 different scenarios in, increasing ecological and external validity.	• The study has limited generalizability due to the single-centre design and focuses on a single medical specialty. The analyses did not adjust for confounding factors. • The study has limited generalizability due to its focus on 5G, which may be limited to regions with access to this technology.

Strengths	Limitations
• The training level of the operators and was described. • The operators were masked to each other's results to minimize bias. • Actual probability values were reported for the main outcomes. • Patients and clinicians were asked to evaluate the clinical benefit of the intervention. • Safety outcomes including adverse events of the intervention were reported. • Statistical tests were used appropriately, and the main outcome measures were accurate and reliable.	• One of the intervention scenarios did not compare the intervention to the comparator. • The study did not report whether sample size was calculated. • Safety outcomes were not directly measured.
Chai et al. (2022)[24]	
• The objective of the study, study design, the main outcomes to be measured, the characteristics of the participants included in the study, the interventions of interest, and the main findings were clearly described. • Actual probability values were reported for the main outcomes. • The training level of the operators and was described. • Safety outcomes including adverse events of the intervention were reported. • Statistical tests were used appropriately, and the main outcome measures were accurate and reliable.	• The study was conducted in a disability care centre. The patients may not be representative of the entire population from which they were treated. • The study has limited generalizability due to its focus on 5G, which may be limited to regions with access to this technology. The analyses did not adjust for confounding factors. • The study did not report whether sample size was calculated. • The small sample size limits the generalizability of findings.
Zhang et al. (2022)[31]	
• The objective of the study, study design, the main outcomes to be measured, the characteristics of the participants included in the study, the interventions of interest, and the main findings were clearly described. • The experts and onsite doctors were masked to each other's diagnostic results to minimize bias. • A standardized exam protocol was used to minimize bias and confounding. • Actual probability values were reported for the main outcomes. • Patients and clinicians were asked to evaluate the clinical benefit of the intervention. • Statistical tests were used appropriately, and the main outcome measures were accurate and reliable. • Interobserver reproducibility was measured.	• The study was conducted at a hospital located on a remote island. The patients may not be representative of the entire population from which they were treated. • The study has limited generalizability due to the single-centre design and focuses on a single medical specialty. • The study did not report whether sample size was calculated. • Variability in the expert professional experience may introducing confounding. • Safety outcomes including adverse events of the intervention were not reported.
Whittington et al. (2022)[29]	
• The objective of the study, study design, the main outcomes to be measured, the characteristics of the participants included in the study, the interventions of interest, and the main findings were clearly described. • Demographic and clinical features of patients were	• The study was conducted at a single medical clinic. The patients may not be representative of the entire population from which they were treated. • The intervention protocol was not clearly described. • The study has limited generalizability due to the single-centre

Strengths	Limitations
compared. • The study included a substantial sample size to power the analysis. • Estimates of the random variability in the data was reported using median (IQR) for non-normality distributed data. • Actual probability values were reported for the main outcomes. • Patient satisfaction was a reported outcome. • Statistical tests were used appropriately, and the main outcome measures were accurate and reliable.	design and focuses on a single medical specialty. • The study did not report whether sample size was calculated. • The authors did not report on the use of masking. • Variability in the expert professional experience may introducing confounding. • Safety outcomes including adverse events of the intervention were not reported.
Duan et al. (2021)[26]	
• The objective of the study, study design, the main outcomes to be measured, the characteristics of the participants included in the study, the interventions of interest, and the main findings were clearly described. • Actual probability values were reported for the main outcomes. • Safety outcomes including adverse events of the intervention were reported. • Statistical tests were used appropriately, and the main outcome measures were accurate and reliable.	• The study was conducted at a single-centre hospital and recruited patients from the ICU department. The patients may not be representative of the entire population from which they were treated. • The study has limited generalizability due to its focus on 5G and highly controlled environment, which may be limited to regions with access to this technology. • Certain exams were not carried out due to limitation with the robotic arm, which may have introduced bias. • The training level of the operators and was not described. • The study did not report whether sample size was calculated. • The small sample size limits the generalizability of findings.
Wejner-Mik et al. (2019)[28]	
• The objective of the study, study design, the main outcomes to be measured, the characteristics of the participants included in the study, the interventions of interest, and the main findings were clearly described. • Patient from various departments were included in the study. • Actual probability values were reported for the main outcomes. • The training level of the operators and was described. • Safety outcomes including adverse events of the intervention were reported. • Statistical tests were used appropriately, and the main outcome measures were accurate and reliable.	• The study was conducted in a single-hospital setting. • The analyses did not adjust for confounding factors. • The study has limited generalizability due to its focus on pocket-sized imaging devices, which may be limited to regions with access to this technology. • The study did not report whether sample size was calculated. • The small sample size limits the generalizability of findings.

BMI = body mass index; ICU = intensive care unit; IQR = interquartile range.

Table 9: Strengths and Limitations of the Included Systematic Reviews Using AMSTAR 2[21]

Strengths	Limitations
Alhussein et al. (2024)[32]	
• The research question or objective and inclusion criteria included the components of the PICO table.	• The review authors did not use a tool for assessing the risk of bias in the include studies.

Strengths	Limitations
• The literature search strategy was comprehensive and multiple databases were searched. • The authors included the list of keywords used for the database search. • The review authors declared no conflict of interests.	• The authors did not explain their selection of eligible study designs, although the study type was included in the results. • It is unclear if the reviewers performed study selection, extraction, and quality assessment of the included studies in duplicate. • The review authors did not provide detailed summary of included study findings. • A review of bibliographies from included studies was not conducted. • The review authors did not measure the interstudy heterogeneity. • The review authors did not include evidence-based guidelines. • A list of excluded studies and reason for exclusion were not provided. • The review authors did not report the sources of funding for the study or the included studies.
Duarte et al. (2021)[9]	
• The research question or objective and inclusion criteria included the components of the PICO table. • The authors explained their selection of eligible study designs, which included any study design. • The literature search strategy was comprehensive and multiple database were searched and reviews of bibliographies of included studies were conducted. • The review authors declared that they did not have any competing interests. • The review authors declared that they did not receive any funding relevant to the SR.	• Selection and confound bias due to the inclusion of nonrandomized studies. • The authors did not report the patient sample size for included studies. • The review authors did not use a tool for assessing the risk of bias in the include studies. • The review authors included evidence-based guidelines. • The review authors did not discuss the interstudy heterogeneity. • It is unclear if the reviewers performed study selection, extraction, and quality assessment of the included studies in duplicate. • A list of excluded studies and reason for exclusion were not provided. • The review authors did not report the sources of funding for the included studies.
Salerno et al. (2022)[33]	
• The research question or objective and inclusion criteria included the components of the PICO table. • The authors explained their selection of eligible studies and extract and review process. • The reviewers performed study selection, extraction, and quality assessment of the included studies in duplicate. • The authors included the list of keywords used for the database search. • The review authors discussed the interstudy heterogeneity. • The review authors declared that they did not have any	• The literature search strategy was limited to 2 databases. • The authors did not report if a review of the bibliographies of included studies, grey literature, or other manual searches were conducted. • The review authors did not use a tool for assessing the risk of bias in the include studies. • The review authors included evidence-based guidelines. • A list of excluded studies and reason for exclusion were not provided.

Strengths	Limitations
competing interests. • The review authors declared that they did not receive any funding relevant to the SR.	• The review authors did not report the sources of funding for the included studies.

SR = systematic review.

Appendix 5: References of Potential Interest

Please note that this appendix has not been copy-edited.

This is a list of studies from the literature search that were excluded from this report but may be of interest to decision-makers working in the field of TUS.

Primary Articles

Jensen SH, Weile J, Aagaard R, et al. Remote real-time supervision via tele-ultrasound in focused cardiac ultrasound: A single-blinded cluster randomized controlled trial. *Acta Anaesthesiol Scand.* 2019;63(3):403-409. PubMed

Kaneko T, Kagiyama N, Nakamura Y, et al. Effectiveness of real-time tele-ultrasound for echocardiography in resource-limited medical teams. *J Echocardiogr.* 2022;20(1):16-23. PubMed

Kory PD, Pellecchia CM, Shiloh AL, Mayo PH, DiBello C, Koenig S. Accuracy of ultrasonography performed by critical care physicians for the diagnosis of DVT. *Chest.* 2011;139(3):538-542. PubMed

Li XL, Sun YK, Wang Q, et al. Synchronous tele-ultrasonography is helpful for a naive operator to perform high-quality thyroid ultrasound examinations. *Ultrasonography.* 2022;41(4):650-660. PubMed

Liu L, Duan S, Zhang Y, Wu Y, Zhang L. Initial Experience of the Synchronized, Real-Time, Interactive, Remote Transthoracic Echocardiogram Consultation System in Rural China: Longitudinal Observational Study. *JMIR Med Inform.* 2019;7(3):e14248. PubMed

Olivieri PP, Verceles AC, Hurley JM, Zubrow MT, Jeudy J, McCurdy MT. A Pilot Study of Ultrasonography-Naive Operators' Ability to Use Tele-Ultrasonography to Assess the Heart and Lung. *J Intensive Care Med.* 2020;35(7):672-678. PubMed

Siu M, Dan J, Cohen J, et al. Impact of Telemedicine on Extended Focused Assessment With Sonography for Trauma Performance and Workload by Critical Care Transport Personnel. *Air Med J.* 2023;42(2):105-109. PubMed

Sun YK, Li XL, Wang Q, et al. Improving the quality of breast ultrasound examination performed by inexperienced ultrasound doctors with synchronous tele-ultrasound: a prospective, parallel controlled trial. *Ultrasonography.* 2022;41(2):307-316. PubMed

Reviews

Adams SJ, Burbridge B, Obaid H, Stoneham G, Babyn P, Mendez I. Telerobotic Sonography for Remote Diagnostic Imaging: Narrative Review of Current Developments and Clinical Applications. *J Ultrasound Med.* 2021;40(7):1287-1306. PubMed

Salerno A, Tupchong K, Verceles AC, McCurdy MT. Point-of-Care Teleultrasound: A Systematic Review. *Telemed J E Health.* 2020;26(11):1314-1321. PubMed

Shi R, Rosario J. Paramedic-Performed Prehospital Tele-Ultrasound: A Powerful Technology or an Impractical Endeavor? A Scoping Review. *Prehospital Disaster Med.* 2023;38(5):645-653. PubMed

ISSN: 2563-6596

Canada's Drug Agency (CDA-AMC) is a pan-Canadian health organization. Created and funded by Canada's federal, provincial, and territorial governments, we're responsible for driving better coordination, alignment, and public value within Canada's drug and health technology landscape. We provide Canada's health system leaders with independent evidence and advice so they can make informed drug, health technology, and health system decisions, and we collaborate with national and international partners to enhance our collective impact.

Questions or requests for information about this report can be directed to Requests@CDA-AMC.ca.

UNIVERSITY OF ALBERTA

HEALTH TECHNOLOGY & POLICY UNIT,

SCHOOL OF PUBLIC HEALTH

TELE-ULTRASOUND
HEALTH EVIDENCE REVIEW

Report prepared for the

College of Physicians and Surgeons of Alberta

March 17, 2025

Authors:

Thy Lai, MD, MPH (Cand.)

Devidas Menon, PhD, MHSA

Tania Stafinski, MSc, PhD

Tables of Contents

ABBREVIATIONS AND GLOSSARY:

Abbreviations

AA = aortic root or proximal ascending aorta
AP = Anterior - posterior
A-P = anterior-posterior
AR = aortic regurgitation
AS = aortic stenosis
HCM = hypertrophic cardiomyopathy
HCU= hand-held cardiac ultrasound
HfmrEF = heart failure with mid-range ejection fraction
HfpEF = heart failure with preserved ejection fraction
HfrEF = heart failure with reduced ejection fraction
LA = left atrial
LAD = left atrial diameter
LV = left ventricle
LVD dysf = left ventricular dysfunction
LVDIs = left ventricular end-systolic diameter
LVH = left ventricle hypertrophy
LVIDd = left ventricular end-diastolic
MR = mitral regurgitation
MS= mitral stenosis
NA = Not applicable
NR = Not reported
Per = pericardial
RA = right atrial
RHD = rheumatic heart disease
RV = right ventricle
TAPSE = tricuspid annular plane systolic excursion
VSI = Volume sweep imaging

Glossary

Breast nodule ultrasound features and measurements: Shape, orientation, margin, echo pattern, posterior features, calcifications, vascularity, internal characteristics, transverse diameter, anteroposterior diameter, and longitudinal diameter

Cardiovascular diagnoses: Aortic valve stenosis, Aortic valve regurgitation, Mitral valve stenosis, Mitral valve regurgitation, Tricuspid valve stenosis, Tricuspid valve regurgitation, Rheumatic valve disease, LV enlargement, LVEF, LV regional wall motion abnormalities, RV enlargement, RV regional wall motion abnormalities, LA enlargement, RA enlargement, Pericardial effusion, Thrombus, and Tachycardia

Echocardiographic indices (cardiac structure and function): left ventricular end-diastolic diameter, left ventricular end-systolic diameter, left atrial diameter, tricuspid annular plane systolic excursion, left ventricular ejection fraction, left ventricle (LV), left atrium (LA), LA end-diastolic volume, LV internal end-diastolic diameter, LA end-systolic volume index, mitral early diastolic velocity, mitral annular early diastolic velocity, mitral annular systolic velocity, mitral E/A ratio, E/e' ratio, tricuspid regurgitation peak velocity, LV end-diastolic length, LA end-systolic length, IVS end-diastolic thickness, LV posterior wall end-diastolic thickness, and pleural effusion

Fetal biometry: Biparietal diameter, head circumference, abdominal circumference, femur length, and estimated gestational age

Thyroid lobe diameters: right lobe anterior-posterior (AP), right lobe transverse, left lobe AP, left lobe transverse, and isthmus lobe AP

Thyroid nodule ultrasound features and measurements: composition, echogenicity, shape, margin, echogenic foci, vascularity, transverse diameter, anterior-posterior diameter, longitudinal diameter

EXECUTIVE SUMMARY

Background: The Health Technology & Policy Unit, School of Public Health, University of Alberta (UA), was approached by the College of Physicians and Surgeons of Alberta (CPSA) to conduct a health evidence review of tele-ultrasound. The review officially began in October 2024 after a research agreement was finalised between UA and CPSA.

Objective: The objective of this health evidence review was to determine whether remotely supervised ultrasound (tele-ultrasound) is inferior to the traditional service model of ultrasound with an in-person imaging specialist insofar as patient care quality, service quality, and access to care are concerned. In addition, there was the question of whether the evidence addressed any effect of geographical distance between the tele-ultrasound site and the location of the reviewing expert on the interpretation of the tele-ultrasound images.

Methods: The review involved (1) A systematic search, critical appraisal and a synthesis of relevant peer-reviewed published literature and (2) A jurisdictional scan of relevant regulations and standards in other Canadian jurisdictions.

Results: Of the original 6,051 discrete records identified through the search, 115 were retrieved for full-text review. This resulted in the exclusion of a further 97, leaving 18 studies for inclusion in the review. They originated from 11 countries, and the patient populations spanned infants, children, adults, and pregnant women. The medical applications were echocardiography (including fetal), obstetrical ultrasound, breast ultrasound, thyroid ultrasound, and abdominal ultrasound. With regards to the distance between the tele-ultrasound site and the reference site, across studies, they ranged from 23 to 365 km, or a 30 to 45-minute drive. In 3 studies, tele-ultrasound images were acquired in one country (India, Peru) and interpreted in another country (US, UK).

Of the 18 studies, the majority reported good outcomes in the various dimensions of diagnostic accuracy (proportion of agreement between tele-ultrasound and in-centre ultrasound, sensitivity and specificity of tele-ultrasound compared to in-centre ultrasound, positive and negative predictive values, etc.) There was little or no good evidence that tele-ultrasound is inferior to in-centre ultrasound.

There was limited evidence on patients' and providers' perspectives on tele-ultrasound. In the patient surveys, more than half felt that tele-ultrasound was acceptable. In the studies reporting on provider satisfaction, all comments received were positive, including their perspectives on the value of tele-ultrasound.

The image quality of tele-ultrasound was reported in 10 studies, and the results were mixed. Some studies found that image quality ranged from being at least of sufficient quality for diagnosis to excellent. However, there were other studies that reported inadequate image quality in up to 36.8% of cases. It could be speculated that this range of responses may be due

to the varying technical ability/capacity of the local tele-ultrasound systems to acquire and transmit images to a remote reader.

Cost savings due to tele-ultrasound were also reported, and these were mainly costs to patients who needed to travel to an in-centre ultrasound centre.

INTRODUCTION

The Health Technology & Policy Unit, School of Public Health, University of Alberta (UA), was approached by the College of Physicians and Surgeons of Alberta (CPSA) to conduct a review of tele-ultrasound. Approval for the study was granted by the University of Alberta Ethics Board 1 (Study no: Pro00144418). The research funding agreement between CPSA and UA was fully executed on 31 October 2024.

PURPOSE

The purpose of this review was to summarize what is known about the performance of tele-ultrasound. The research question more specifically was:

Is remotely supervised ultrasound (tele-ultrasound) inferior to the traditional service model of ultrasound with an in-person imaging specialist insofar as patient care quality, service quality, and access to care are concerned?

BACKGROUND

Tele-ultrasound has been defined as "the use of ultrasound with voice and video and an additional instructor, such as an ultrasound-certified physician, who is remotely connected to it" (1) Tele-ultrasound was first used in the 1960s, when scans were performed on US astronauts with guidance from Mission Control. Since then, there have been numerous efforts to further develop the technologies involved in tele-ultrasound, and it has found numerous applications. A review of published studies in 2022 identified numerous strengths and opportunities, including the practicality of performing tele-ultrasound (usability in rural and urban areas), cost efficiency and for medical education. Potential challenges included the ability of operators, image quality and safety of personal data (2).

METHODS

The methods comprised (a) a systematic search for and critical appraisal of relevant peer-reviewed published literature and a qualitative synthesis of findings, and (b) a jurisdictional scan of relevant regulations and standards in other Canadian jurisdictions.

Literature review

A systematic review of relevant scholarly work was conducted following internationally recognized published methodological guidelines. This comprised the following steps.

- *Identification of relevant papers*: A comprehensive, systematic search for relevant published literature was undertaken using structured search strategies applied to the following databases: PubMED, The Cochrane Library, Centre for Reviews and Dissemination (DARE, HTA and NHS EED), EMBASE, EMCARE, Web of Science, Scopus, Proquest, Econlit, JSTOR, and CINAHL. The structured search strategies were developed in collaboration with a health information specialist/research librarian and included relevant controlled vocabulary terms (Medical Subject Headings (MeSH)) and keywords. (The search strategy is attached as Appendix

A). The searches were restricted to English language literature. For completeness, a manual search of reference lists of all included papers was also undertaken. All of the search results were be entered into EndNote® reference management software, and duplicate citations removed.

- *Selection of included studies*: Two researchers independently screened all titles and abstracts of citations using the inclusion and exclusion criteria in Table 1. As needed, they met to compare results, resolve any discrepancies, and select potentially relevant citations for retrieval. They then independently reviewed the corresponding full papers using the same criteria and met to compare results. Disagreements were resolved through discussion and third party review, if necessary.

Table 1. Inclusion and exclusion criteria

Parameter	Inclusion criteria	Exclusion criteria
Population	• Patients of any age group (e.g., neonates, children, adults) who require diagnostic ultrasound services	• Populations who do not require ultrasound services as part of their care • Volunteer patients • Experimental or simulation-based tele-ultrasound without patient involvement
Intervention	• Tele-ultrasound	• Point-of-care ultrasound • Ultrasound as a screening tool
Comparator	• Traditional in-person ultrasound services	
Outcomes	• Diagnostic accuracy • Patient outcomes • Patient satisfaction • Provider satisfaction • Service delivery times	• Technical performance
Study design	• Studies comparing tele-ultrasound to traditional in-person ultrasound • Studies conducted in various healthcare settings, including hospitals, clinics, rural and remote areas, and low-resource settings	• Studies focusing solely on the technical development of tele-ultrasound without addressing clinical or service outcomes • Studies conducted in experimental, lab or simulated settings

The original searches yielded 6,051 discrete records. On screening titles and abstracts, 5936 were excluded, and the remaining 115 were retrieved for full-text review. This resulted in exclusion of a further 97, leaving 18 sources for data extraction. The PRISMA flow diagram is presented in Appendix B. This diagram also presents the reasons for the exclusion of the 97 papers. Of these, 23 were excluded because the application was point-of-care ultrasound (POCUS), the reference test was post-natal imaging, or tele-ultrasound was used for screening purposes, rather than diagnosis. POCUS is defined as an imaging technique conducted and analyzed in real-time by physicians (non-radiologists) at the bedside to inform rapid clinical decisions. The treatment decision can proceed without radiologists' interpretation. With regards to POCUS, remote interpretation was used solely to validate point-of-care ultrasound

rather than as a part of a tele-ultrasound workflow for clinical decision-making. By contrast, standard ultrasound is typically more comprehensive, conducted by a sonographer and/or radiologist and analyzed by a radiologist in a professional environment. This usually involves a thorough examination for diagnostic purposes. Additionally, 4 studies were excluded because they validated fetal tele-echocardiography using postnatal echocardiography on babies rather than in-person fetal echocardiography. Two studies using tele-ultrasound as a screening tool to detect the prevalence of heart diseases were also excluded.

- *Data extraction*: Systematic data extraction from the 18 included papers was done using a standardized data abstraction form/template. The form/template included the following elements: author(s), publication year, country of origin, study type, study quality, purpose, design, setting, interventions, study population, intended outcome (e.g., detection of fetal abnormalities), outcomes measured, findings, and limitations. One researcher extracted data from each paper, and a second reviewer verified the contents of the form. For quality assurance, data from 10% of the papers were extracted by both researchers and compared to identify and, if necessary, resolve any discrepancies. For the remaining papers, one researcher extracted the data, and the other independently verified the extracted information to ensure accuracy and consistency.

- *Quality assessment/critical appraisal*: The methodological quality of randomized studies and non-randomized studies was independently assessed by two reviewers using the QUADAS-C tool (3). Endorsed by the Cochrane Group, the QUADAS-C is a generic tool for appraising the quality of studies of diagnostic test accuracy. It contains four domains, each of which evaluates a different risk of bias: 1) Patient selection - whether patients were selected in a way that could have introduced bias, 2) Index test (the test being evaluated) – whether it was interpreted without knowledge of the reference standard (blinding) and applied consistently across participants, 3) Reference standard (the gold standard test used for comparison) – whether it was correctly applied and interpreted independently of the index test, and 4) Flow and timing - whether all patients received the same reference standard, any patients were excluded from analysis in a way that could have introduced bias, and the time interval between index and reference tests was appropriate. Individual studies are scored on each domain using the following 3 categories: high, low or unclear risk of bias.

Jurisdictional scan

Each medical regulatory college in the 10 Canadian provinces and 3 territories was contacted via email to request an interview to collect information on existing practices, guidelines or standards, and any geographic (i.e., distance) restrictions concerning the delivery of tele-ultrasound. Contacts were identified with the help of CPSA staff. Six organizations responded, with 4 of them stating that they had no information to offer pertaining to the project to offer (Nova Scotia, Ontario, Northwest Territories and Nunavut). The other two jurisdictions (Manitoba and Quebec) consented to an interview. Table 5 contains a summary of information from Manitoba and Quebec.

RESULTS

Description of included studies

The 18 studies were published between 1996 and 2022, and included 11 countries (China, Ethiopia, India, Japan, Norway, Peru, Spain, Switzerland, United Kingdom, and the United States). The patient groups across studies included infants, children, adults, and pregnant women. The number of patients across the studies ranged from 9 to 774. The study period varied between 2 months and 5 years. The medical applications were echocardiography (including fetal) (12 studies), obstetrical ultrasound (2 studies), breast ultrasound (1 study), thyroid ultrasound (2 studies), and abdominal ultrasound (1 study). Across studies, there were variations in the methods used and outcomes measured.

In this report and the table of studies (Table 6 – See Appendix C for details), the tele-ultrasound "arm" is labeled as "Index test 1". The "Reference test" is the gold standard and usually an on-site ultrasound by an expert. In some studies, there is an "Index test 2", e.g., videotapes of images or ultrasounds performed and interpreted by trainees/physicians who are not experienced in ultrasound. All comparisons described in this report are between the Index test 1 and the reference test.

With regards to the distance between the tele-ultrasound site and the reference site, individual studies reported distances between 23 to 365 km, 75 km, 100 km, 200 km, 120 km, and in one case, a 30 to 45-minute drive. In 3 studies, tele-ultrasound images were acquired in one country (India, Peru) and interpreted in another country (US, UK).

In studies reporting on tele-ultrasound image acquisition, personnel included experienced sonographers, obstetricians, or healthcare providers with limited ultrasound expertise, such as pediatricians, medical trainees, nurses, and resident physicians. While sonographers and obstetricians had formal training, other providers received targeted education to perform ultrasound examinations. Interpreters were radiologists or specialists with expertise in the relevant field, such as cardiologists or obstetricians. Most studies reported real-time expert guidance and image interpretation.

The most common outcomes reported were the proportion of agreement between tele-ultrasound and the reference test, diagnostic accuracy metrics (sensitivity, specificity, positive predicted value, and negative predicted value), intra-class correlation coefficients, change in diagnosis/treatment after tele-ultrasound was performed, and image quality of tele-ultrasound. Some studies also reported qualitative outcomes, such as patient's and health provider's considerations. These outcomes are summarized in Tables 2, 3, and 4.

Ten studies reported kappa (κ) scores to evaluate agreement between tele-ultrasound and in-person ultrasound by expert, using Cohen's kappa, κ (4). However, in all but one of these studies, the two interpreters did not examine the same ultrasound image (comparing interpretations of images obtained by different means). Although there are modified scores proposed by other authors, e.g., Nelson and Edwards (5) which would have been more

appropriate, there was no evidence that in the nine studies, such a modified approach was used. In the remaining study, the value of κ was calculated between the experts who interpreted the same tele-ultrasound images. Intra-class correlation coefficients (ICCs) were also used to evaluate the agreement on continuous variables (ultrasound indices). Only one of these studies reported using a two-way random-effects model for calculating ICCs.

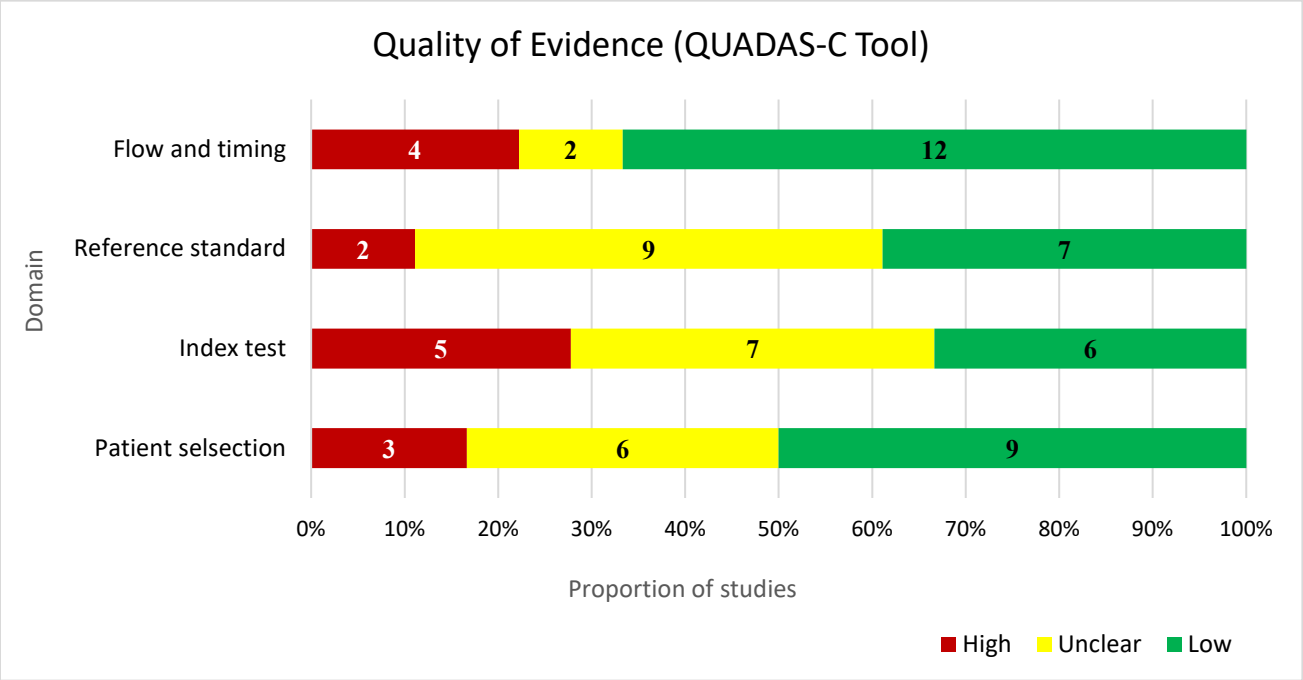
Critical appraisal of studies

The results of the critical appraisal of studies are described in Figures 1 and 2. **"Flow and timing"** had the highest proportion of low-risk studies, with 12 studies classified as low risk and only two as unclear. Conversely, **"Reference standard"** had the greatest number of unclear-risk studies (9 studies). Both **"Patient selection" and "Index test"** had a more balanced distribution between unclear and low-risk classifications; however, they also showed a notable number of studies with a high risk of bias. The **"Index test"** exhibited the greatest number of studies with a high risk of bias.

Figure 1. Summary of the quality of evidence of individual studies

	Papers	Patient Selection	Index test	Reference Standard	Flow and Timing
1	Lewin et al. (2006) (6)	Low	Unclear	Low	Unclear
2	Mulholland et al. (1999) (7)	Unclear	Low	Unclear	High
3	McCrossan et al. (2008) (8)	High	High	Unclear	High
4	Kaneko et al. (2021) (9)	Low	High	Low	Low
5	Hjorth-Hansen et al. (2020) (10)	Low	Low	Low	Low
6	Casey et al. (1996) (11)	Unclear	High	Unclear	Low
7	Widmer et al. (2003) (12)	Unclear	Unclear	Unclear	Low
8	Evangelista et al. (2016) (13)	Low	Low	Low	High
9	Sable et al. (2002) (14)	Unclear	Unclear	Unclear	Low
10	Grant et al. (2009) (15)	High	High	Unclear	Low
11	Alsharqi et al. (2022) (16)	High	Low	High	High
12	McCrossan et al. (2011) (17)	Unclear	High	Unclear	Unclear
13	Jemal et al. (2022) (18)	Low	Unclear	High	Low
14	Toscano et al. (2021) (19)	Low	Unclear	Low	Low
15	Sun et al. (2022) (20)	Low	Low	Unclear	Low
16	Li et al. (2022) (21)	Low	Low	Unclear	Low
17	Marini et al. (2021) (22)	Low	Unclear	Low	Low
18	Marini et al. (2021) (23)	Unclear	Unclear	Low	Low

Figure 2. Variation in proportion of studies with different risks of bias across domains



FINDINGS

Literature review

The findings from this review are presented in Tables 2 to 4, which summarize the results of included studies by outcome.

Table 2 contains the information on diagnostic accuracy measures in each study; these measures are: proportion of agreement between tele-ultrasound and the reference test, sensitivity (which refers to the ability of a test to identify an individual with the condition as positive), specificity (its ability to identify an individual without the condition as negative, positive predictive value (PPV), which is the likelihood that an individual who has a positive test result does have the condition, negative predictive value (NPV), which is the likelihood that an individual who has a negative test result does not have the condition, and the inter-observer agreement as measured by κ for one study and the ICC for other studies. Twelve of the 18 studies reported on at least one measure of diagnostic accuracy.

Table 2. Diagnostic accuracy

Study	Proportion of agreement	Sensitivity	Specificity	Positive predictive value	Negative predictive value	Interobserver agreement (Intraclass correlation coefficients/Kappa score)
Lewin et al. (2006) (6)	89.6%	NR	NR	NR	NR	NR
Mulholland et al. (1999)	93%	90.47%	100%	100%	82%	NR
McCrossan et al. (2008) (8)	97%	96.7%	96.2%	98.8%	89.3%	NR
Kaneko et al. (2021) (9)	NR	NR	NR	NR	NR	Echocardiographic indices • LVIDd: 0.76 • LVIDs: 0.84 • LVEF: 0.68 • LAD: 0.83 • TAPSE: 0.44
Hjorth-Hansen et al. (2020) (10)	NR	100%/43%	95%/97%	NR	NR	Echocardiographic indices • LVEF: 0.78 • LV end-diastolic volume: 0.85 • LV internal end-diastolic diameter: 0.8 • LA end-systolic volume index: 0.75 • Mitral early diastolic velocity: 0.94 • Mitral annular early diastolic velocity: 0.82 • Mitral annular systolic velocity: 0.8 • Mitral E/A ratio: 0.88 • E/e' ratio: 0.088 • Tricuspid regurgitation peak velocity: 0.71 • LV end-diastolic length: 0.74 • LA end-systolic length: 0.72 • IVS end-diastolic thickness: 0.62 • LV posterior wall end-diastolic thickness: 0.6 • Pleural effusion: 0.88
Casey et al. (1996) (11)	89%	NR	NR	NR	NR	NR
Widmer et al. (2003) (12)	98%	NR	NR	NR	NR	NR
Evangelista et al. (2016) (13)	NR	Cardiovascular diagnoses • AS: 98.4% (90.7 to 99.9) • AR: 96.8% (82.0 to 99.8) • MR: 96.0% (85.4 to 99.3) • MS: 100% (31.9 to 100) • TR: 80.9% (66.3 to 90.8) • HCM: 87.5% (44.7 to 99.3) • LV dysf: 90% (75.4 to 96.7) • LVH: 92.5% (86.3 to 96.1) • LA dilation: 62.5% (50.9 to 72.8) • AA dilation: 76% (61.5 to 86.5)	Cardiovascular diagnoses • AS: 92.1% (88.8 to 93.9) • AR: 98.6% (97.4 to 99.3) • MR: 98.6% (97.3 to 99.3) • MS: 98.9% (94.6 to 99.6) • TR: 98.6% (97.4 to 99.3) • HCM: 99.5% (98.6 to 99.8) • LV dysf: 97.1% (95.5 to 98.1) • LVH: 96.5% (94.7 to 97.8) • LA dilation: 93.9% (91.8 to 96.5) • AA dilation: 97.9% (96.5 to 98.7)	Cardiovascular diagnoses • AS: 53.7% (44.5 to 62.7 • AR: 75.6% (53.3 to 87.1) • MR: 83.5% (70.5 to 91.1) • MS: 27.3% (17.3 to 60.1) • TR: 77.2% (61.7 to 88.0) • HCM: 63.6% (31.6 to 87.6) • LV dysf: 63.1% (49.3 to 75.2) • LVH: 84.9% (77.8 to 90.1) • LA dilation: 54.4% (43.7 to 64.7) • AA dilation: 71.7% (57.4 to 81.8)	Cardiovascular diagnoses • AS: 99.8% (99.0 to 99.9) • AR: 99.8% (99.1 to 100) • MR: 99.7% (98.8 to 99.9) • MS: 100% (99.6 to 100) • TR: 98.9% (97.7 to 99.) • HCM: 99.9% (99.1 to 100) • LV dysf: 99.4% (98.4 to 99.8) • LVH: 98.4% (96.9 to 99.1) • LA dilation: 95.6% (93.7 to 96.9) • AA dilation: 98.5% (97.0 to 99.1)	NR
Sable et al. (2002) (14)	NR	NR	NR	NR	NR	NR

Study	Proportion of agreement	Sensitivity	Specificity	Positive predictive value	Negative predictive value	Interobserver agreement (Intraclass correlation coefficients/Kappa score)
Grant et al. (2009) (15)	96%	97%	96%	98.7%	88.9%	NR
Alsharqi et al. (2022) (16)	Cardiovascular diagnoses • Aortic valve stenosis: 100% • Aortic valve regurgitation: 100% • Mitral valve stenosis: 100% • Mitral valve regurgitation: 97.25% • Tricuspid valve stenosis: 100% • Tricuspid valve regurgitation: 95.37% • Rheumatic valve disease: 100% • LV enlargement: 97.25% • LVEF:93.58% • LV regional wall motion abnormalities: 96.33% • RV enlargement: 95.41% • RV regional wall motion abnormalities: 99.08% • LA enlargement: 94.5% • RA enlargement: 97.25% • Pericardial effusion: 97.25% • Thrombus: 100% • Tachycardia: 96.33%	NR	NR	NR	NR	Cardiovascular diagnoses (Kappa score) • Aortic valve stenosis: k=1 • Aortic valve regurgitation: k =1 • Mitral valve stenosis: k=1 • Mitral valve regurgitation: k=0.921 • Tricuspid valve stenosis: NA • Tricuspid valve regurgitation: k=0.852 • Rheumatic valve disease: k=1 • LV enlargement: k=0.809 • LVEF: k=0.839 • LV regional wall motion abnormalities: k=0.648 • RV enlargement: k=0.423 • RV regional wall motion abnormalities: NA • LA enlargement: k=0.683 • RA enlargement: k=0.386 • Pericardial effusion: k=0.932 • Thrombus: k=1 • Tachycardia: k=0.798
McCrossan et al. (2011) (17)	97%	91%	98%	91%	98%	NR
Jemal et al. (2022) (18)	• Placental grading (Grannum classification): 79% • Fetal cardiac activity 98% • Fetal congenital anomaly 98% • Placental location 97% • Intrauterine fetal demise: 100% • Intrauterine growth restriction: 100% • Placenta previa: 100% • Ventriculomegaly: 99%	NR	NR	NR	NR	NR

Study	Proportion of agreement	Sensitivity	Specificity	Positive predictive value	Negative predictive value	Interobserver agreement (Intraclass correlation coefficients/Kappa score)
	• Anencephaly: 100% • Spina bifida: 99% • Cephalocele: 99% • Fetal hydrops: 98% • Assessment of fetal presentation: 100% • Biophysical profile: 94% • Anatomic assessments: 100%					
Toscano et al. (2021) (19)	• Confirm live fetus (based on cardiac activity): 76.2% • Fetal number: 100% • Fetal presentation: 95.8% • Placental location 85.6% • Placenta Previa 96% • Placenta Previa (consensus read): 96.8% • Amniotic fluid volume 99.2% • Normal exam 95.2% • Normal exam (consensus read) 96% • Follow-up recommendation (% normal) 99.2%	NR	NR	NR	NR	Fetal biometry *Second trimester* • Biparietal diameter 0.84 (0.54-0.96) • Head circumference 0.84 (0.69-0.91) • Abdominal circumference 0.67 (0.45-0.8) • Femur length 0.83 (0.7-0.91) • Estimated gestational age 0.94 (0.65-0.98) *Third trimester:* • Biparietal diameter 0.33 (-0.1-0.64) • Head circumference 0.38 (0.06-0.62) • Abdominal circumference 0.28 (0.02-0.52) • Femur length 0.68 (0.32-0.87) • Estimated gestational age 0.64 (-0.02-0.86) *All exams:* • Biparietal diameter 0.89 (0.5-0.96) • Head circumference 0.86 (0.71-0.92) • Abdominal circumference 0.81 (0.69-0.88) • Femur length 0.93 (0.88-0.96) • Estimated gestational age 0.95 (0.69-0.98)
Sun et al. (2022) (20)	93.3%	NR	NR	NR	NR	BI-RAD categories: 0.89 (0.81-0.93) Ultrasound nodules features: • Shape 0.62 (0.39-0.77) • Orientation: 1 • Margin: 0.62 (0.43-0.76) • Echo pattern: 0.85 (0.76-0.91) • Posterior features: 0.57 (0.36-0.73) • Calcifications: 0.84 (0.74-0.90) • Vascularity: 0.69 (0.53-0.81) • Internal characteristics: 0.85 (0.75-0.91) Target nodules measurements: • Transverse diameter: 0.98 (0.96-0.99) • Anterior-posterior diameter: 0.96 (0.94-0.98) • Longitudinal diameter: 0.93 (0.86-0.96)
Li et al. (2022) (21)	89.4%	89.4%	77.4%	89.4%	77.4%	ACR TI-RAD categories: 0.791 (0.672-0.870)

Study	Proportion of agreement	Sensitivity	Specificity	Positive predictive value	Negative predictive value	Interobserver agreement (Intraclass correlation coefficients/Kappa score)
						Ultrasound nodules features: • Composition: 0.819 (0.714-0.889) • Echogenicity: 0.694 (0.524-0.806) • Shape: 0.788 (0.668-0.868) • Margin: 0.657 (0.484-0.781) • Echogenic foci: 0.801 (0.686-0.877) • Vascularity: 0.775 (0.649-0.840) Nodules measurements: • Transverse diameter: 0.979 (0.965-0.987) • Anterior-posterior diameter: 0.984 (0.9730.990) • Longitudinal diameter: 0.961 (0.935-0.976)
Marini et al. (2021) (22)	98.3%	NR	NR	NR	NR	Lobe diameters: • Right lobe AP: 0.37 (0.04-0.58) • Right lobe transverse: 0.57 (0.35-0.71) • Left lobe AP: 0.42 (0.02-0.64) • Left lobe transverse: 0.58 (0.01-0.79) • Isthmus lobe AP: 0.48 (-0.22 to 0.77)
Marini et al. (2021) (23)	*All exams* • Liver Echogenicity: 99.3% • Liver Abnormal: 86.1% • Gallbladder: 70.1% • Pancreas Abnormal: 43.4% • Right Kidney Abnormal: 65.2% • Exam Abnormal: 94% *Ignoring non-visualized cases* • Liver Echogenicity: 99.3% • Liver Abnormal: 99.2% • Gallbladder: 92.7% • Pancreas Abnormal: 100% • Right Kidney Abnormal: 98.9% • Exam Abnormal: 94%	• Cholelithiasis: 84.2% (60.4 - 96.6%) • Cholelithiasis after consensus read: 89.5% (66.9 - 98.7%)	• Cholelithiasis: 97.7% (91.9 - 99.7%) • Cholelithiasis after consensus read: 97.7% (91.9 - 99.7%)	NR	NR	NR

Diagnostic Accuracy

Proportion of agreement between tele-ultrasound and standard ultrasound refers to the proportion of cases in which both modalities yielded the same diagnostic results. In 11 of the 14 studies that reported this measure, agreement ranged from 86% to 100%. Of the remaining three studies, the first reported values that ranged from 43.4% to 94%, and agreement was considerably lower when visualising the gallbladder (70.1%), diagnosing an abnormal right

kidney (56.2%) or diagnosing an abnormal pancreas (43.4%) (23). The second study reported agreement rates ranging from 79% to 100% (18). Except for the 79% agreement in placental grading, all other 14 diagnoses had agreement rates of 94% or higher. The third study reported values ranging from 76.2% to 100%, with 76.2% for confirmation of a live fetus based on cardiac signs (19). In this study, the agreement was 85.6% or higher for the diagnoses reported.

Sensitivity was reported (or calculated from the data presented in the study) in 8 studies, with six demonstrating a sensitivity of 84% or higher. The other 2 studies reported lower values for sensitivity, including a sensitivity of 62.5% for tele-ultrasound in detecting left atrial dilation and 76% for identifying dilation of the aortic root of the proximal ascending aorta, and a sensitivity 43% for the detection of at least aortic stenosis (13),(10).

Specificity data were also available from 8 studies. The specificity was 92% to 100%, except in one of the studies, where it as 77.4% (21).

Positive predictive values (PPV) were reported (or calculated from the data in the study) in 5 studies, with four of them demonstrating PPV values of 89% or higher. In one study (13), the PPV was below 80% for 8 out of 10 diagnoses. However, for mitral regurgitation and hypertrophic cardiomyopathy, the PPV was 83.5% and 84.9%, respectively. All five studies reported negative predictive values (NPV) ranging from 82% to 100%.

Inter-observer agreement (Intraclass correlation coefficients (ICC)) in tele-ultrasound varied depending on the clinical application. For tele-echocardiography, most echocardiographic indices demonstrated good agreement, although variation was observed in specific measurements. Mitral early diastolic velocity showed excellent agreement (ICC = 0.94), while tricuspid annular plane systolic excursion (TAPSE) had a considerably lower agreement (ICC = 0.44) (10). Fetal biometry assessments in obstetrical ultrasound also exhibited differences in agreement depending on gestational age (19). In the second trimester, most measurements showed good agreement, but abdominal circumference only demonstrated moderated reliability (ICC=0.67) (22). In the third trimester, overall agreement declined, with ICC values ranging from 0.28 to 0.38 for most parameters. At the same time, estimated gestational age (ICC = 0.64) and femur length (ICC=0.68) maintained moderate agreement. Regarding all gestational periods, agreement was good to excellent, with that for abdominal circumference (ICC=0.81) at the lower end and that for gestational age (ICC=0.95) at the upper end. With respect to thyroid ultrasound, agreement varied across different aspects of assessment. Measurements of thyroid lobe diameters showed poor agreement, except for those relating to transverse diameters, which demonstrated moderate agreement (ICC = 0.57-0.58) (22). In another study on thyroid ultrasound, classification using the TI-RADS categories and evaluation of nodule features exhibited good agreement, while nodule measurements showed excellent agreement (21). Similar patterns were observed in breast ultrasound, where BI-RADS categories and target nodule measurement achieved excellent agreement. However, certain parameters on nodule features only showed moderate agreement (20).

Changes in medical management were examined by comparing tele-ultrasound interpretations to initial decisions made by physicians performing ultrasound without expert consultation. Changes in diagnosis resulting from the comparison of tele-ultrasound and in-person ultrasound by an expert (Reference test) address the diagnostic accuracy of tele-ultrasound; therefore, they are not reported here (see paragraph on *Proportion of agreement* above). Three studies on tele-echocardiography reported the impact of expert interpretation on treatment modifications and the necessity of urgent transfers to tertiary hospitals. The consultation with specialists significantly reduced unnecessary patient transfers, with one study reporting 72% of transfers were avoided due to expert interpretation (8). Another study also reported that 5% of cases were urgently transferred and 30.2% initial treatment plans were altered following expert review of tele-ultrasound images (14). The third study elaborated on the adjustments in family doctors' initial management strategies after consultation with cardiologists: 75% of patients did not require conventional echocardiography, 61% did not need referral to cardiology, 42% did not need clinical follow-up, and 48% should not have been discharged (13).

Patient and Provider perspectives

Table 3 presents a summary of information on the perspectives of patients and ultrasound providers on tele-ultrasound. Eight of the 14 studies provided varying amounts of data on these aspects of tele-ultrasound.

Table 3. Patient and provider perspectives

Study	Patient considerations	Provider considerations
Evangelista et al. (2016) (13)	NR	Time saved by cardiologist: 4.2 hours/week
Grant et al. (15)	NR	Performers' satisfaction: Telemedicine is useful: 4.5 ± 0.82 (out of 5), they felt reassured by the facility: 4.2 ± 1.09
McCrossan et al. (2011) (17)	NR	Performers' satisfaction rate at the start /end of the study: average of 2.7/3.8 (out of 5)
Jemal et al. (2022) (18)	Patients' satisfaction: 96 felt comfortable during the procedure, 99% agreed that they would recommend to others, 98% would undergo another tele-ultrasound, 72% were satisfied with the image quality, 77% were satisfied with the sound quality, 36% were not comfortable communicating with remote obstetrician, 98% agreed that the encounter was private and confidential, 49% disagreed that they had to wait long to receive healthcare, 30% were unsure or agreed that they had to wait long, 76% agreed that they were given enough information to prepare for the ultrasound, and 63% agreed that they had enough time to think about questions and to ask the remote obstetrician	100% of providers felt: they had received adequate training for image acquisition, confident in their ability to obtain images, enjoyed using the system, felt their patients were satisfied with the care provided, improves access to services
Toscano et al. (2021) (19)	NR	Providers' satisfaction: The confidence level of readers was 3 (out of 3) for all diagnoses)

Study	Patient considerations	Provider considerations
Sun et al. (2022) (20)	Acceptance: yes – 61.9%, uncertain – 5.2%, no – 33% Willing to pay: yes – 60.6%, uncertain – 11.1%, no – 28.3%	Providers' satisfaction: Value of tele-ultrasound in diagnosis - yes: 69.7%, uncertain: 1%, no- 29.3% Guidance had a training effect on the performer – yes - 68%), uncertain - 2%,, no- 29.3%
Li et al. (2022) (21)	Acceptance: yes – 63.6%, uncertain – 2%, no – 34.3% Willing to pay: yes – 59.8%, uncertain – 4.1%, no – 36.1%	Providers' satisfaction: Guidance is helpful - yes: 61 (62.9%), uncertain -2.1%, no -35.1% Guidance had a training effect on the performer: yes: 64.9%, uncertain - 1%, no - 34.0%

Patient considerations: Three studies sought patients' opinions using surveys. Overall, patients were relatively positive about tele-ultrasound. In two of these studies, approximately 60 % or more of patients found tele-ultrasound to be acceptable and the same amount were willing to pay for the test (20, 21). However, about a third of them did not find the test to be acceptable. It is important to note that these studies were conducted in China, where differences in the healthcare financing mechanism may have influenced the findings. In the third study, while privacy and confidentiality were widely acknowledged, some patients reported challenges with communication, image and sound quality, and perceived wait times (18).

Provider considerations: Seven studies reported on some aspects of providers' opinions (on utility and satisfaction) regarding tele-ultrasound. All the comments were positive, including confidence in using the system and the value of tele-ultrasound.

Image and Audio quality

Table 4 provides a summary of findings on image quality, which were reported in 10 of the 18 studies reviewed. Almost all of these studies concluded that images were "excellent" or at least of diagnosable quality. However, images in some studies were rated as "poor", "inconclusive", "unsatisfactory" or "undiagnosable" ranged from 0.4% to 36.8%. These variations are likely due to the variation in how each of these categories was defined in the different studies and in the technical capacity of the various systems that were used to acquire and transmit images.

Table 4. Image/audio quality

Studies	Quality measures
Lewin et al. (2006) (6)	Image quality: 94% excellent, 5% adequate, 0.4% unsatisfactory
Mulholland et al. (1999) (7)	Image quality: 97% of diagnostic quality
Evangelista et al. (2016) (13)	Image quality: 34% good, 45.4% acceptable, 19.2% poor, 8.7% inconclusive
McCrossan et al. (2011) (17)	Median video quality IQR 4/5, median audio quality 4/5, median overall quality 4/5
Toscano et al. (2021) (19)	Image quality: 61.1% excellent, 38.1 acceptable, 0.8% poor

Sun et et al. (2022) (20)	Image quality: 25.2% perfect, 50.1% minor improvement possible, 3% poor quality, 1% undiagnosable
Li et al. (2022) (21)	Image quality: 23.7% excellent, 46.4% good, 22.7% flawed but usable for diagnosis, 4% not good enough, 1% poor and cannot be used for diagnosis
Marini et al. (2021) (22)	Image quality: 87.6% excellent, 12.4% acceptable
Marini et al. (2021) (23)	Image quality: 24.3% excellent, 38.9% acceptable, 36.8% poor

Other findings

Time to perform tele-ultrasound varied depending on the type of ultrasound. With regards to echocardiography, two studies reported the mean performance time, including consultation time with the remote experts, to be approximately 70 minutes (range 60-79.2 minutes) (10, 14). Abdominal volume sweep imaging was reported to take approximately 10 minutes in another study of abdominal imaging (23). Two other studies reported the mean performance time for breast and thyroid ultrasound to be 6.6 and 4.6 minutes, respectively (20, 21).

Cost savings were reported in 3 studies. The first study, from 1999, estimated cost savings based on a 74% reduction in patient transfers, preventing 47 ambulance trips at approximately £300 ($480) each, resulting in a total savings of £14,100 ($22,560) over two years (7). The second study, which was published in 2009, compared tele-ultrasound with standard care, demonstrating per-patient cost reductions through decreased ambulance transfers and in-person specialist consultations (15). The total savings per patient were £1,822, £608, and £739 across the three regional hospitals assessed. The third study, from 2022, reported a cost savings of 9.2 Ethiopian Birr (ETB) in travel expenses for patients accessing telemedicine sites compared to traveling to central hospitals (18). Given that Ethiopia's Gross National Income (GNI) per capita (Atlas method) in Ethiopia was $1,010 US (130,492 ETB) in 2022 (24), the reduction in travel costs was relatively insignificant.

Impact of distance on performance of tele-ultrasound was addressed in 13 studies. However, they did not consistently report on temporal remoteness, providing information on distances (or traveling times) only between the tele-ultrasound and in-centre sites only. In six of these studies, the distance reported ranged from 30 to 346 km. In three, the tele-ultrasound and in-centre sites were named the same as in the first six studies, so the distance range would have been the same. In the remaining three studies, the tele-ultrasound site was in one country (India/Peru) and the expert was in another (US/UK). Again, the diagnostic accuracy was good or excellent (proportion of agreement in the 90% range, sensitivity and specificity in the 84% to 100% range). Overall, there was no good evidence of distance being a factor in diagnosis. There was one possible exception(8), where the study reported sensitivity for 2 measures (aortic root or proximal ascending aorta, and left atrium dilation) of 76% and 62.5%, respectively, while the values for the 8 other measures were 80% to 100%.

Jurisdictional scan

The jurisdictional scan of other jurisdictional colleges of physicians and surgeons yielded relatively scant information. Only 2 provinces, Manitoba and Quebec agree to provide information (Manitoba via a Zoom interview, Quebec via email). In neither case was the distance between a tele-ultrasound site and a central imaging centre mentioned as being a consideration in the permitted use of tele-ultrasound. Table 5 contains a brief summary of the information obtained from Manitoba and Quebec. There do not appear to be any geographical distance restrictions on tele-ultrasound.

Table 5. Jurisdictional scan

Jurisdiction	Geographical restrictions	Training requirements
Manitoba	No, as long as the remote sites have accredited ultrasound machines and trained operators	The person who acquires tele-ultrasound images must be a certified sonographer or have equivalent qualifications
Quebec	No	There are additional training and requirements for non-physician professionals (notably technologists) who perform ultrasound examinations without the immediate review of the radiologist

DISCUSSION

According to our findings, synchronous or asynchronous tele-ultrasound can achieve diagnostic accuracy comparable to conventional ultrasound across several clinical applications. Most studies reported acceptable to high image quality, with minimal impact from the geographic distance between sites. Although some concerns regarding audio-visual quality and training needs were noted, patient and provider satisfaction were generally high. These results suggest the feasibility of tele-ultrasound as an alternative to conventional ultrasound to improve access to diagnostic imaging in underserved settings, particularly with the support of remote experts.

Our review is different in scope and methodology from existing literature evaluating tele-ultrasound in Canadian and global contexts. Britton et al. (25) conducted a systematic review on tele-ultrasound in 2019 and also analyzed the clinical impact of tele-ultrasound. Their review was limited to low-resource areas in low-middle income countries (LMICs) (e.g., Togo, Uganda, Serbia) while our study included ones conducted in LMICs and also remote areas of resource-abundant countries (e.g., the UK). Additionally, they included feasibility studies, while in contrast, our review only focused on studies that assessed diagnostic accuracy, patient and provider satisfaction, and patient outcomes. While both reviews aimed to evaluate clinical utility, only our review synthesized diagnostic performance using standardized accuracy metrics (e.g., sensitivity, specificity, and ICCs), which results in a more robust evaluation of tele-ultrasound's equivalence to conventional imaging.

In addition to the systematic review, two recent Canadian studies explored tele-ultrasound in specific contexts (26, 27). Both studies reported patient and provider satisfaction, as well as

highlighted the potential of tele-ultrasound to improve access to care in underprivileged areas. Despite some shared findings, they differed from the studies included in our review in terms of design, focus, or population. One study in British Columbia evaluated the feasibility of a novel mixed-reality tele-ultrasound system in research environments with healthy volunteers, which limited clinical generalizability (26). The study focused on human-computer interaction, latency, and system usability, rather than diagnostic performance or clinical outcomes. Notably, both this study and our systematic review arrived at the conclusion that long geographic distance did not adversely affect image quality. Another study in Alberta implemented a maternal-fetal medicine tele-ultrasound program with an emphasis on training, triage, and patient experience (27). However, they lacked a comparator group (conventional ultrasound) for a formal assessment of diagnostic accuracy. Nonetheless, they pointed out similar benefits, such as improved access to ultrasound services and high patient and provider satisfaction, which aligned with our review's findings. Although these studies did not meet our inclusion criteria, both studies offer informative insights into the implementation of tele-ultrasound in Canadian healthcare settings.

Our study poses some limitations. Some studies were not deemed eligible due to the inclusion of solely English literature. While many included studies demonstrated comparable diagnostic performance between tele-ultrasound and conventional imaging, the heterogeneity of clinical applications and outcome measures precluded a formal meta-analysis. Thus, findings were synthesized narratively. Many studies have small sample sizes and non-randomized designs, which might reduce the overall strength of the evidence. Although including studies from different countries and settings enhances the generalizability of our review, it also generates variability in equipment, provider training, healthcare systems, and implementation strategies. Additionally, regarding the jurisdictional scan, only 2 out of 13 medical regulatory colleges (Manitoba and Quebec) consented to provide information.

CONCLUSIONS

The purpose of this review was to examine existing evidence to determine whether remotely supervised ultrasound (tele-ultrasound) has been shown to be inferior to the traditional service model of ultrasound with an in-person imaging specialist insofar as patient care quality, service quality, and access to care are concerned. In addition, it was to determine whether the geographical distance between the tele-ultrasound location and the in-centre ultrasound site impacted diagnosis.

This review concludes that overall, tele-ultrasound, with real-time guidance, is not inferior to conventional in-centre ultrasound. The evidence also demonstrates that the distance between the tele-ultrasound site and the expert in-centre interpreter of the images has no significant impact on the effectiveness of tele-ultrasound in diagnosis.

Reference list

1. Jost RG, Dwyer SJ, Society of Photo-optical Instrumentation Engineers., American Association of Physicists in Medicine. Medical imaging 1995. PACS design and evaluation : engineering and clinical issues : 28 February-2 March 1995, San Diego, California. Bellingham, Wash., USA: SPIE; 1995. xii, 582 p. p.
2. Recker F, Hoehne E, Damjanovic D, Schaefer VS. Ultrasound in Telemedicine: A Brief Overview. Appl Sci-Basel. 2022;12(3).
3. Yang B, Mallett S, Takwoingi Y, Davenport CF, Hyde CJ, Whiting PF, et al. QUADAS-C: A Tool for Assessing Risk of Bias in Comparative Diagnostic Accuracy Studies. Annals of Internal Medicine. 2021;174(11):1592-+.
4. Cohen J. A Coefficient of Agreement for Nominal Scales. Educ Psychol Meas. 1960;20(1):37-46.
5. Nelson KP, Edwards D. A paired kappa to compare binary ratings across two medical tests. Stat Med. 2019;38(17):3272-87.
6. Lewin M, Xu C, Jordan M, Borchers H, Ayton C, Wilbert D, Melzer S. Accuracy of paediatric echocardiographic transmission via telemedicine. Journal of Telemedicine and Telecare. 2006;12(8):416-21.
7. Mulholland HC, Casey F, Brown D, Corrigan N, Quinn M, McCord B, et al. Application of a low cost telemedicine link to the diagnosis of neonatal congenital heart defects by remote consultation. Heart. 1999;82(2):217-21.
8. McCrossan BA, Grant B, Morgan GJ, Sands AJ, Craig B, Casey FA. Diagnosis of congenital heart disease in neonates by videoconferencing: an eight-year experience. Journal of Telemedicine and Telecare. 2008;14(3):137-40.
9. Kaneko T, Kagiyama N, Nakamura Y, Hirasawa T, Murata A, Morimoto R, et al. Effectiveness of real-time tele-ultrasound for echocardiography in resource-limited medical teams. Journal of Echocardiography. 2022;20(1):16-23.
10. Hjorth-Hansen AK, Andersen GN, Graven T, Gundersen GH, Kleinau JO, Mjolstad OC, et al. Feasibility and Accuracy of Tele-Echocardiography, With Examinations by Nurses and Interpretation by an Expert via Telemedicine, in an Outpatient Heart Failure Clinic. J Ultrasound Med. 2020;39(12):2313-23.
11. Casey F, Brown D, Craig BG, Rogers J, Mulholland HC. Diagnosis of neonatal congenital heart defects by remote consultation using a low-cost telemedicine link. J Telemed Telecare. 1996;2(3):165-9.
12. Widmer S, Ghisla R, Ramelli GP, Taminelli F, Widmer B, Caoduro L, Gallino A. Tele-echocardiography in paediatrics. Eur J Pediatr. 2003;162(4):271-5.
13. Evangelista A, Galuppo V, Mendez J, Evangelista L, Arpal L, Rubio C, et al. Hand-held cardiac ultrasound screening performed by family doctors with remote expert support interpretation. Heart. 2016;102(5):376-82.
14. Sable CA, Cummings SD, Pearson GD, Schratz LM, Cross RC, Quivers ES, et al. Impact of telemedicine on the practice of pediatric cardiology in community hospitals. Pediatrics. 2002;109(1).
15. Grant B, Morgan GJ, McCrossan BA, Crealey GE, Sands AJ, Craig B, Casey FA. Remote diagnosis of congenital heart disease: the impact of telemedicine. Arch Dis Child. 2010;95(4):276-80.
16. Alsharqi M, Ismavel VA, Arnold L, Choudhury SS, Solomi VC, Rao SRS, et al. Focused Cardiac Ultrasound to Guide the Diagnosis of Heart Failure in Pregnant Women in India. Journal of the American Society of Echocardiography. 2022;35(12):1281-94.
17. McCrossan BA, Sands AJ, Kileen T, Cardwell CR, Casey FA. Fetal diagnosis of congenital heart disease by telemedicine. Arch Dis Child-Fetal. 2011;96(6):F394-F7.

18. Jemal K, Ayana D, Tadesse F, Adefris M, Awol M, Tesema M, et al. Implementation and evaluation of a pilot antenatal ultrasound imaging programme using tele-ultrasound in Ethiopia. J Telemed Telecare. 2022;30(6):1005-16.
19. Toscano M, Marini TJ, Drennan K, Baran TM, Kan J, Garra B, et al. Testing telediagnostic obstetric ultrasound in Peru: a new horizon in expanding access to prenatal ultrasound. BMC Pregnancy Childbirth. 2021;21(1):328.
20. Sun YK, Li XL, Wang Q, Zhou BY, Zhu AQ, Qin C, et al. Improving the quality of breast ultrasound examination performed by inexperienced ultrasound doctors with synchronous tele-ultrasound: a prospective, parallel controlled trial. Ultrasonography. 2022;41(2):307-16.
21. Li XL, Sun YK, Wang Q, Chen ZT, Qian ZB, Xu HX, Guo LH. Synchronous tele-ultrasonography is helpful for a naive operator to perform high-quality thyroid ultrasound examinations. Ultrasonography. 2022;41(4):650-60.
22. Marini TJ, Weiss SL, Gupta A, Zhao YT, Baran TM, Garra B, et al. Testing telediagnostic thyroid ultrasound in Peru: a new horizon in expanding access to imaging in rural and underserved areas. Journal of Endocrinological Investigation. 2021;44(12):2699-708.
23. Marini TJ, Oppenheimer DC, Baran TM, Rubens DJ, Dozier A, Garra B, et al. Testing telediagnostic right upper quadrant abdominal ultrasound in Peru: A new horizon in expanding access to imaging in rural and underserved areas. Plos One. 2021;16(8).
24. World Bank Open Data - Ethiopia: World Bank; 2025 [Available from: https://databank.worldbank.org/reports.aspx?source=2&country=ETH.
25. Britton N, Miller MA, Safadi S, Siegel A, Levine AR, McCurdy MT. Tele-Ultrasound in Resource-Limited Settings: A Systematic Review. Front Public Health. 2019;7:244.
26. Yeung R BD, Chen PB, Lessoway V, Reid J, Rangel-Suarez S, Chang SD, Salcudean S. Mixed reality tele-ultrasound over 750km: a clinical study2024.
27. Oluyomi T, Cooper S, Roggensack A, Birch C, Egege S, Kelly M, et al. Introduction of a Maternal-Fetal Medicine Tele-Ultrasound Program in Rural Alberta. J Obstet Gynaecol Can. 2023;45(7):503-5.

Appendix A

The search strategy

Ovid Multifile

Database: Ovid MEDLINE(R) ALL <1946 to May 14, 2024>, Embase <1974 to 2024 May 14>
Search Strategy:
---

1 Telemedicine/ and exp Ultrasonography/ (1232)
2 (teleultrason* or tele-ultrason* or tele-ultra-son* or teleultra-son* or teleultrasound* or tele-ultrasound* or tele-ultra-sound* or teleultra-sound* or "tele US" or "tele U/S").tw,kw,kf. (278)
3 (TUS adj10 tele*).tw,kw,kf. (14)
4 (teleechogra* or tele-echogra* or teleechocardiogra* or tele-echocardiogra* or tele-echo-cardiogra* or teleecho-cardiogra* or teleechotomogra* or tele-echotomogra* or tele-echo-tomogra* or teleecho-tomogra*).tw,kw,kf. (176)
5 (teleendosonogra* or tele-endosonogra* or tele-endo-sonogra* or teleendo-sonogra*).tw,kw,kf. (0)
6 (tele* ultrason* or tele* ultra-son* or tele* ultrasound* or tele* ultra-sound* or "tele* US" or "tele* U/S").tw,kw,kf. (329)
7 (telesonogra* or tele-sonogra*).tw,kw,kf. (127)
8 tele* sonogra*.tw,kw,kf. (20)
9 ((remote* or virtual*) adj3 (ultrason* or ultra-son* or ultrasound* or ultra-sound*)).tw,kw,kf. (2914)
10 ((remote* or virtual*) adj3 (echogra* or echocardiogra* or echo-cardiogra* or echo-cardio-gra* or echocardio-gra* or echotomogra* or echo-tomogra* or echo-tomo-gra* or echotomo-gra*)).tw,kw,kf. (267)
11 ((remote* or virtual*) adj3 sonogra*).tw,kw,kf. (436)
12 (RTMUS adj10 (ultraso* or ultra-so*)).tw,kw,kf. (15)
13 (POCUS adj10 (remote* or tele* or virtual*)).tw,kw,kf. (154)
14 or/1-13 [TELE-ULTRASOUND] (5091)
15 exp Animals/ not Humans/ (16986804)
16 14 not 15 [ANIMAL-ONLY REMOVED] (3942)
17 16 use medall [**MEDLINE RECORDS**] (1779)
18 exp telemedicine/ and exp echography/ (2178)
19 (teleultrason* or tele-ultrason* or tele-ultra-son* or teleultra-son* or teleultrasound* or tele-ultrasound* or tele-ultra-sound* or teleultra-sound* or "tele US" or "tele U/S").tw,kw,kf. (278)
20 (TUS adj10 tele*).tw,kw,kf. (14)
21 (teleechogra* or tele-echogra* or teleechocardiogra* or tele-echocardiogra* or tele-echo-cardiogra* or teleecho-cardiogra* or teleechotomogra* or tele-echotomogra* or tele-echo-tomogra* or teleecho-tomogra*).tw,kw,kf. (176)
22 (teleendosonogra* or tele-endosonogra* or tele-endo-sonogra* or teleendo-sonogra*).tw,kw,kf. (0)

23 (tele* ultrason* or tele* ultra-son* or tele* ultrasound* or tele* ultra-sound* or "tele* US" or "tele* U/S").tw,kw,kf. (329)
24 (telesonogra* or tele-sonogra*).tw,kw,kf. (127)
25 tele* sonogra*.tw,kw,kf. (20)
26 ((remote* or virtual*) adj3 (ultrason* or ultra-son* or ultrasound* or ultra-sound*)).tw,kw,kf. (2914)
27 ((remote* or virtual*) adj3 (echogra* or echocardiogra* or echo-cardiogra* or echo-cardio-gra* or echocardio-gra* or echotomogra* or echo-tomogra* or echo-tomo-gra* or echotomo-gra*)).tw,kw,kf. (267)
28 ((remote* or virtual*) adj3 sonogra*).tw,kw,kf. (436)
29 (RTMUS adj10 (ultraso* or ultra-so*)).tw,kw,kf. (15)
30 (POCUS adj10 (remote* or tele* or virtual*)).tw,kw,kf. (154)
31 or/18-30 [TELE-ULTRASOUND] (5854)
32 (exp animal/ or exp animal model/ or exp animal experiment/ or nonhuman/ or exp vertebrate/) not (exp human/ or exp human experiment/) (12660808)
33 31 not 32 [ANIMAL-ONLY REMOVED] (5744)
34 33 use oemezd [**EMBASE RECORDS**] (3846)
35 17 or 34 [**BOTH DATABASES**] (5625)
36 remove duplicates from 35 (4028) [**TOTAL UNIQUE RECORDS**]
37 36 use medall [MEDLINE UNIQUE RECORDS] (1772)
38 36 use oemezd [EMBASE UNIQUE RECORDS] (2256)

****

Web of Science

#	Search Query	Results
1	teleultrason* or (tele NEAR/0 ultrason*) or (tele NEAR/0 ultra NEAR/0 son*) or (teleultra NEAR/0 son*) or teleultrasound* or (tele NEAR/0 ultrasound*) or (tele NEAR/0 ultra NEAR/0 sound*) or (teleultra NEAR/0 sound*) or "tele US" or "tele U/S" (Topic)	176
2	TUS NEAR/10 tele* (Topic)	23
3	teleechogra* or (tele NEAR/0 echogra*) or teleechocardiogra* or (tele NEAR/0 echocardiogra*) or (tele NEAR/0 echo NEAR/0 cardiogra*) or (teleecho NEAR/0 cardiogra*) or teleechotomogra* or (tele NEAR/0 echotomogra*) or (tele NEAR/0 echo NEAR/0 tomogra*) or (teleecho NEAR/0 tomogra*) (Topic)	171
4	teleendosonogra* or (tele NEAR/0 endosonogra*) or (tele NEAR/0 endo NEAR/0 sonogra*) or (teleendo NEAR/0 sonogra*) (Topic)	0
5	(tele* NEAR/0 ultrason*) or (tele* NEAR/0 ultra NEAR/0 son*) or (tele* NEAR/0 ultrasound*) or (tele* NEAR/0 ultra NEAR/0 sound*) or (tele* NEAR/0 "US") or (tele* NEAR/0 "U/S") (Topic)	1150
6	telesonogra* or (tele NEAR/0 sonogra*) (Topic)	72

7	tele* NEAR/0 sonogra* (Topic)	14
8	(remote* or virtual*) NEAR/3 (ultrason* or (ultra NEAR/0 son*) or ultrasound* or (ultra NEAR/0 sound*)) (Topic)	1834
9	(remote* or virtual*) NEAR/3 (echogra* or echocardiogra* or (echo NEAR/0 cardiogra*) or (echo NEAR/0 cardio NEAR/0 gra*) or (echocardio NEAR/0 gra*) or echotomogra* or (echo NEAR/0 tomogra*) or (echo NEAR/0 tomo NEAR/0 gra*) or (echotomo NEAR/0 gra*)) (Topic)	132
10	(remote* or virtual*) NEAR/3 sonogra* (Topic)	243
11	RTMUS NEAR/10 (ultraso* or (ultra NEAR/0 son*) or (ultra NEAR/0 sound*)) (Topic)	5
12	POCUS NEAR/10 (remote* or tele* or virtual*) (Topic)	48
13	#12 OR #11 OR #10 OR #9 OR #8 OR #7 OR #6 OR #5 OR #4 OR #3 OR #2 OR #1	3488

Public Affairs Index

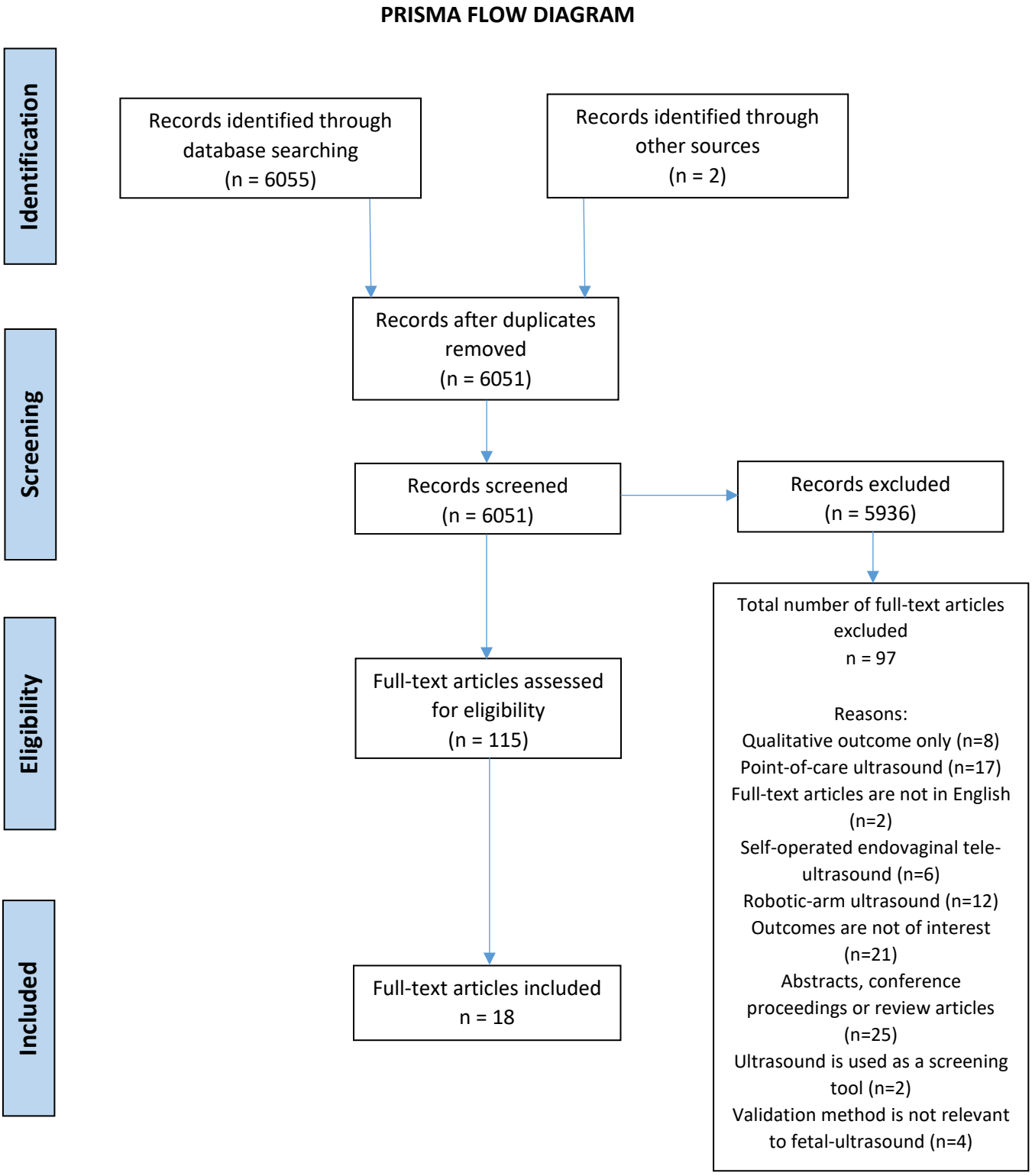
#	Query	Limiters/Expanders	Last Run Via	Results
S13	S1 OR S2 OR S3 OR S4 OR S5 OR S6 OR S7 OR S8 OR S9 OR S10 OR S11 OR S12	Search modes - Find all my search terms	Interface - EBSCOhost Research Databases Search Screen - Advanced Search Database - Public Affairs Index	5
S12	TI (POCUS N10 (remote* or tele* or virtual*)) OR AB (POCUS N10 (remote* or tele* or virtual*))	Search modes - Find all my search terms	Interface - EBSCOhost Research Databases Search Screen - Advanced Search Database - Public Affairs Index	0
S11	TI (RTMUS N10 (ultraso* or (ultra W0 son*) or (ultra W0 sound*))) OR AB (RTMUS N10	Search modes - Find all my search terms	Interface - EBSCOhost Research	0

	(ultraso* or (ultra W0 son*) or (ultra W0 sound*)))		Databases Search Screen - Advanced Search Database - Public Affairs Index	
S10	TI ((remote* or virtual*) N3 sonogra*) OR AB ((remote* or virtual*) N3 sonogra*)	Search modes - Find all my search terms	Interface - EBSCOhost Research Databases Search Screen - Advanced Search Database - Public Affairs Index	1
S9	TI ((remote* or virtual*) N3 (echogra* or echocardiogra* or (echo W0 cardiogra*) or (echo W0 cardio W0 gra*) or (echocardio W0 gra*) or echotomogra* or (echo W0 tomogra*) or (echo W0 tomo W0 gra*) or (echotomo W0 gra*))) OR AB ((remote* or virtual*) N3 (echogra* or echocardiogra* or (echo W0 cardiogra*) or (echo W0 cardio W0 gra*) or (echocardio W0 gra*) or echotomogra* or (echo W0 tomogra*) or (echo W0 tomo W0 gra*) or (echotomo W0 gra*)))	Search modes - Find all my search terms	Interface - EBSCOhost Research Databases Search Screen - Advanced Search Database - Public Affairs Index	1
S8	TI ((remote* or virtual*) N3 (ultrason* or (ultra W0 son*) or ultrasound* or (ultra W0 sound*))) OR AB ((remote* or virtual*) N3 (ultrason* or (ultra W0 son*) or ultrasound* or (ultra W0 sound*)))	Search modes - Find all my search terms	Interface - EBSCOhost Research Databases Search Screen - Advanced Search Database - Public Affairs Index	0

S7	TI tele* W0 sonogra* OR AB tele* W0 sonogra*	Search modes - Find all my search terms	Interface - EBSCOhost Research Databases Search Screen - Advanced Search Database - Public Affairs Index	0
S6	TI (telesonogra* or (tele W0 sonogra*)) OR AB (telesonogra* or (tele W0 sonogra*))	Search modes - Find all my search terms	Interface - EBSCOhost Research Databases Search Screen - Advanced Search Database - Public Affairs Index	0
S5	TI ((tele* W0 ultrason*) or (tele* W0 ultra W0 son*) or (tele* W0 ultrasound*) or (tele* W0 ultra W0 sound*) or (tele* W0 "US") or (tele* W0 "U/S")) OR AB ((tele* W0 ultrason*) or (tele* W0 ultra W0 son*) or (tele* W0 ultrasound*) or (tele* W0 ultra W0 sound*) or (tele* W0 "US") or (tele* W0 "U/S"))	Search modes - Find all my search terms	Interface - EBSCOhost Research Databases Search Screen - Advanced Search Database - Public Affairs Index	3
S4	TI (teleendosonogra* or (tele W0 endosonogra*) or (tele W0 endo W0 sonogra*) or (teleendo W0 sonogra*)) OR AB (teleendosonogra* or (tele W0 endosonogra*) or (tele W0 endo W0 sonogra*) or (teleendo W0 sonogra*))	Search modes - Find all my search terms	Interface - EBSCOhost Research Databases Search Screen - Advanced Search Database -	0

			Public Affairs Index	
S3	TI (teleechogra* or (tele W0 echogra*) or teleechocardiogra* or (tele W0 echocardiogra*) or (tele W0 echo W0 cardiogra*) or (teleecho W0 cardiogra*) or teleechotomogra* or (tele W0 echotomogra*) or (tele W0 echo W0 tomogra*) or (teleecho W0 tomogra*)) OR AB (teleechogra* or (tele W0 echogra*) or teleechocardiogra* or (tele W0 echocardiogra*) or (tele W0 echo W0 cardiogra*) or (teleecho W0 cardiogra*) or teleechotomogra* or (tele W0 echotomogra*) or (tele W0 echo W0 tomogra*) or (teleecho W0 tomogra*))	Search modes - Find all my search terms	Interface - EBSCOhost Research Databases Search Screen - Advanced Search Database - Public Affairs Index	0
S2	TI TUS W10 tele* OR AB TUS W10 tele*	Search modes - Find all my search terms	Interface - EBSCOhost Research Databases Search Screen - Advanced Search Database - Public Affairs Index	0
S1	TI (teleultrason* or (tele W0 ultrason*) or (tele W0 ultra W0 son*) or (teleultra W0 son*) or teleultrasound* or (tele W0 ultrasound*) or (tele W0 ultra W0 sound*) or (teleultra W0 sound*) or "tele US" or "tele U/S") OR AB (teleultrason* or (tele W0 ultrason*) or (tele W0 ultra W0 son*) or (teleultra W0 son*) or teleultrasound* or (tele W0 ultrasound*) or (tele W0 ultra W0 sound*) or (teleultra W0 sound*) or "tele US" or "tele U/S")	Search modes - Find all my search terms	Interface - EBSCOhost Research Databases Search Screen - Advanced Search Database - Public Affairs Index	0

Appendix B


PRISMA FLOW DIAGRAM
Identification
Screening
Eligibility
Included
Records identified through database searching (n = 6055)
Records identified through other sources (n = 2)
Records after duplicates removed (n = 6051)
Records screened (n = 6051)
Records excluded (n = 5936)
Full-text articles assessed for eligibility (n = 115)
Full-text articles included n = 18
Total number of full-text articles excluded n = 97
Reasons:
Qualitative outcome only (n=8)
Point-of-care ultrasound (n=17)
Full-text articles are not in English (n=2)
Self-operated endovaginal tele-ultrasound (n=6)
Robotic-arm ultrasound (n=12)
Outcomes are not of interest (n=21)
Abstracts, conference proceedings or review articles (n=25)
Ultrasound is used as a screening tool (n=2)
Validation method is not relevant to fetal-ultrasound (n=4)

Appendix C

Table 6. Table of Studies

Study authors, country and purpose	Study design, period and setting	Patient recruitment	Index test 1	Index test 2 (if available)	Reference test	Outcomes	Findings
Ultrasound indication: Echocardiography							
Author(s): • Lewin et al. (2006) Country(ies): • Washington, United States	Study design: • Non-randomized comparative accuracy study Setting: • Multi-center Study period: • February 2002 to December 2004 (35 months)	Recruitment: • Total number of patients recruited: 1421 • Excluded based on criteria: 0 • Declined to participate: 0 • Not approached: 0 • Attended: 1421 (1424 echocardiograms) *Index test 1* • Number of patients: 766 (769 echocardiograms) • Dropouts/Excluded: 3 • Analyzed: 766 echocardiograms *Index test 2* • Number of patients: 655 • Dropouts: 0 • Analyzed: 655 *Reference test* • Number of patients: 99 • Dropouts: 0 • Analyzed: 99	**Tele-ultrasound** Operator(s): • Local sonographers Real-time guidance: • Yes Mentors: • Expert Training: • Practice • Length: NR Transmission: • Real-time Interpreter(s) of the results: • A single paediatric cardiologist at CHRMC	**Video-taped echo studies** Operator(s): • NR Interpreter(s) of the results: • NR	**Subsequent follow-up in the CHRMC cardiology clinics** Operator(s): • NR Interpreter(s) of the results: • The same cardiologist involved in all tele-echo studies	• The **accuracy** of real-time echocardiography studies conducted via telemedicine and prerecorded video studies (Index test 1 & Reference test and Index test 2 & Reference test) • The **image quality** of tele-ultrasound	**<u>Patient care quality</u>** Proportion of agreement: *Index test 1 & Reference test:* 60/67 (89.6%) *Index test 2 & Reference test:* 20/32 (63%) Sensitivity: NR Specificity: NR Positive Predictive Value (PPV): NR Negative Predictive Value (NPV): NR Kappa score: NR Intraclass Correlation Coefficient (ICC): NR Change in diagnosis/treatment /referral: *Index test 1 & Reference test* • Total discrepancies: 7/67 (10%) • Change in diagnosis: 1/67 (1%) • Minor discrepancies: 6/67 (9%) *Index test 2 & Reference test* • Total discrepancies: 12/32 (38%) • Change in diagnosis: 10/32 (31%) • Minor discrepancies: 2/32 (6%) Patients' satisfaction rate: NR **<u>Service quality</u>** Time to perform ultrasound: NR Quality of images *Index test 1* • 726/769 (94%) were excellent quality • 40/769 (5%) were adequate quality • 3/769 (0.4%) of unsatisfactory quality Performers' satisfaction rate: NR **<u>Access to care</u>** • NR
Author(s): • Mulholland et al. (1999)	Study design: • Paired comparative	Recruitment: • Total number of patients recruited: 63	**Tele-echocardiography consulting with paediatric cardiologist**	**Echocardiography by attending paediatrician** Operator(s):	**Direct consultation by the paediatric cardiologist and echocardiography**	• **Accuracy** of diagnoses from tele-echocardiography and	**<u>Patient care quality</u>** Proportion of agreement *Index test 1 & Reference test:* 93%

Study authors, country and purpose	Study design, period and setting	Patient recruitment	Index test 1	Index test 2 (if available)	Reference test	Outcomes	Findings
Country(ies): • UK	accuracy study Setting: • Single center Study period: • September 1995 to September 1997 (25 months)	• Excluded based on criteria: 0 • Declined to participate: 0 • Not approached: 0 • Attended: 63 *Index test 1* • Number of patients: 63 • Dropouts: 0 • Analyzed: 61 (2 were inadequate quality for assessment) *Index test 2* • Number of patients: 63 • Dropouts: 0 • Analyzed: 63 *Reference test* • Number of patients: 61 • Dropouts: 0 • Analyzed: 61	Operator(s): • Attending paediatricians Real-time guidance: • Yes Mentors: • Paediatric cardiologist Training: • NR Transmission: • Real-time Interpreter(s) of the results: • Paediatric cardiologists	• Attending paediatricians Interpreter(s) of the results: • Attending paediatricians	Operator(s): • Paediatric cardiologists Interpreter(s) of the results: • Paediatric cardiologists 0	echocardiography by attending paediatrician (Index test 1 & Reference test and Index test 2 & Reference test)	*Index test 2 & Reference test:* 66% Sensitivity: *Index test 1 & Reference test:* 90.47% Specificity: *Index test 1 & Reference test:* 100% Positive Predictive Value (PPV): 100% Negative Predictive Value (NPV): 82% Kappa score: NR Intraclass Correlation Coefficient (ICC): NR Change in diagnosis/treatment /referral: • 47 infants (74%) avoided transferring (28 with minor congenital heart disease and 19 with no abnormality) Patients' satisfaction rate: NR ***Sub-population:*** NR **<u>Service quality</u>** Time to perform ultrasound: NR Quality of images: • 61/63 (97%) were diagnostic quality • 2/63 (3%) were not diagnostic quality ○ 1 poor echocardiographic window due to baby's skin condition ○ 1 poor arch view Performers' satisfaction rate: NR **<u>Access to care</u>** Transportation time: NR Transportation cost: • Saved 47 transfers with estimated £300 (US$480) per transfer • Total savings £14,100(US$22,560) - £6,500 (US$10,400 cost of equipment rental, telephone charges) = £7,600 (US$12,160)
Author(s): • McCrossan et al. (2008) Country(ies):	Study design: • Paired comparative accuracy study (partially)	Recruitment: • Total number of patients recruited: 132 • Excluded based on criteria: 0	**Tele-ultrasound interpreted by consultant paedatric cardiologist** Operator(s):	**In-person ultrasound by local paediatrician** Operator(s): • Local paediatricians	**Hand-on echocardiogram by paediatric cardiologist** Operator(s): • Paediatric cardiologist	• Diagnostic **accuracy** of tele-ultrasound (Index test 1 & Reference test • The **accuracy** of the initial echocardiogram by	**<u>Patient care quality</u>** Proportion of agreement *Index test 1 & Reference test:* 112/116 (97%) had CHD *Index test 2 & Reference test:* 66/116 (57%) had CHD

Study authors, country and purpose	Study design, period and setting	Patient recruitment	Index test 1	Index test 2 (if available)	Reference test	Outcomes	Findings
• United Kingdom	Setting: • Multi-center Study period: • 1999-2006	• Declined to participate: 0 • Not approached: 0 • Attended: 132 *Index test 1* • Number of patients: 132 • Dropouts: 0 • Analyzed: 132 *Index test 2* • Number of patients: 132 • Dropouts: 0 • Analyzed: 132 *Reference test* • Number of patients: 121 • Dropouts: 0 • Lost to follow-up: 11 • Analyzed: 116	• Local paediatricians Real-time guidance: • Yes Mentors: • Consultant paedatric cardiologist Training: • NR Transmission: • Real-time • Transmission bandwidth: ISDN at 384 kbit/s Interpreter(s) of the results: • Consultant paedatric cardiologist	Ultrasound machine: • NR Interpreter(s) of the results: • Local paediatrician	Interpreter(s) of the results: • Paediatric cardiologist	the paediatrician (Index test 2 & Reference test) • **Change in transfer decision** (Index test 1 & Index test 2)	Diagnostic accuracy: NR Sensitivity: 96.7% Specificity: 96.2% Positive Predictive Value (PPV): 98.8% Negative Predictive Value (NPV): 89.3% Kappa score *Index test 1 & Reference test:* k=0.69 (95% CI: 0.72-1.0) *Index test 2 & Reference test:* k=0.14 (95% CI: 0.-0.31) Intraclass Correlation Coefficient (ICC): NR Change in diagnosis/treatment /referral: *Index test 1 & Index test 2:* • 95/132 (72%) transfers were avoided • 15/132 (11.3%) were urgently transferred • 12/132 were electively transferred to regional unit within 84 hours Patients' satisfaction rate: NR **<u>Service quality</u>** • NR **<u>Access to care</u>** • NR
Author(s): • Kaneko et al. (2021) Country(ies): • Japan	Study design: • Paired comparative accuracy study Setting: • Singe-center Study period • NR	Recruitment: • Total number of patients recruited: 31 • Excluded based on criteria: 0 • Declined to participate: 0 • Not approached: 0 • Attended: 31 *Index test 1* • Number of patients: 31 • Dropouts: 0 • Analyzed: 31 *Index test 2* • Number of patients: 31 • Dropouts: 0 • Analyzed: 31	**Tele-ultrasound interpreted by a remote specialist** Site: • Remote site: Juntendo University Hospital • Interpretation site: Another building at Juntendo University Hospital Operator(s): • A trainee Real-time guidance: • Yes Mentors: • Remote	**In-person ultrasound interpreted by the trainee** Site: • Juntendo University Hospital Operator(s): • A trainee Experience in ultrasound: • Operator(s): NR Ultrasound machine: • Handheld ultrasound Interpreter(s) of the results: • The trainee	**In-person ultrasound by a blinded specialist** Operator(s): • A blinded specialist Interpreter(s) of the results: • The blinded specialist	• The **accuracy** of examinations under tele-advice (Index test 1 & Reference test • The **accuracy** of the examinations by trainees (Index test 2 & Reference test)	**<u>Patient care quality</u>** Proportion of agreement: NR Sensitivity: NR Specificity: NR Positive Predictive Value (PPV): NR Negative Predictive Value (NPV): NR Kappa score ***Severity of valvular heart diseases*** *Index test 1 & Reference test* • Aortic regurgitation: 0.9 • Aortic Stenosis: 0.85 • Mitral regurgitation: 0.85 • Tricuspid regurgitation: 1.00

Study authors, country and purpose	Study design, period and setting	Patient recruitment	Index test 1	Index test 2 (if available)	Reference test	Outcomes	Findings
		Reference test • Number of patients: 31 • Dropouts: 0 • Analyzed: 31	echocardiography specialist Training: • No training Transmission: • Real-time • Transmission bandwidth: NR Interpreter(s) of the results: • Remote echocardiography specialist				*Index test 2 & Reference test* • Aortic regurgitation: 0.38 • Aortic Stenosis: 0.21 • Mitral regurgitation: 0.51 • Tricuspid regurgitation: 0.55 ***Screening cardiac dysfunction*** *Index test 1 & Reference test* • HFpEF, HFmrEF vs HFrEF: 1.00 • LV regional wall motion abnormality: 0.87 • Valvular heart disease:1.00 • Abnormal TAPSE (<17mm): 0.773 *Index test 2 & Reference test* • HFpEF, HFmrEF vs HFrEF: 0.318 • LV regional wall motion abnormality: 0.585 • Valvular heart disease: 0.616 • Abnormal TAPSE (<17mm): 0.497 Intraclass Correlation Coefficient (ICC) *Index test 1 & Reference test* • LVIDd: 0.76 • LVIDs: 0.84 • LVEF: 0.68 • LAD: 0.83 • TAPSE: 0.44 *Index test 2 & Reference test* • LVIDd: 0.96 • LVIDs: 0.93 • LVEF: 0.99 • LAD: 0.89 • TAPSE: 0.90 Change in diagnosis/treatment /referral: NR Patients' satisfaction rate: NR **<u>Service quality</u>** • NR **<u>Access to care</u>** • NR
Author(s): • Hjorth-Hansen et al. (2020) Country(ies): • Norway	Study design: • Paired comparative accuracy study Setting: • Single center	Recruitment: • Total number of patients recruited: 50 • Excluded based on criteria: 0 • Declined to participate: 0 • Not approached: 0 • Attended: 50	**Tele-ultrasound** Operator(s): • Registered cardiac nurses Real-time guidance: • NR	**NA**	**Echocardiography by in-house physicians experienced in echocardiography** Operator(s): • In-house physicians experienced in echocardiography	• The **agreement** of the measurements and HF classification by the telemedical approach and reference test (Index test 1 & Reference test)	**<u>Patient care quality</u>** Proportion of agreement: NR Sensitivity: *For the detection of at least moderate mitral stenosis, mitral regurgitation, and tricuspid regurgitation:* 100%

Study authors, country and purpose	Study design, period and setting	Patient recruitment	Index test 1	Index test 2 (if available)	Reference test	Outcomes	Findings
	Study period: • October 2016 to February 2017 (4 months)	*Index test 1* • Number of patients: 50 • Dropouts: 0 • Analyzed: 50 *Index test 2* • NA *Reference test* • Number of patients: 50 • Dropouts: 0 • Analyzed: 50	Mentors: • NR Training: • Lecture and Practice • Length: NR Transmission: • Near Real-time Interpreter(s) of the results: • The out-of-hospital cardiologist who was blinded to previous echocardiogram and patient's histories		Interpreter(s) of the results: • In-house physicians experienced in echocardiography		*For the detection of at least moderate aortic stenosis:* 43% Specificity: *For the detection of at least moderate mitral stenosis, mitral regurgitation, and tricuspid regurgitation:* >95% *For the detection of at least moderate aortic stenosis*: 97% Kappa score *Classification of the category of HF* k = 0.73 (p<0.001) Correlation (P value) *Echocardiographic indices* • LVEF: 0.78 (0.002) • LV end-diastolic volume: 0.85 (<0.001) • LV internal end-diastolic diameter: 0.8 (0.01) • LA end-systolic volume index: 0.75 (0.004) • Mitral early diastolic velocity: 0.94 (<0.001) • Mitral annular early diastolic velocity: 0.82 (<0.001) • Mitral annular systolic velocity: 0.8 (0.001) • Mitral E/A ratio: 0.88 (0.001) • E/e' ratio: 0.088 (<0.001) • Tricuspid regurgitation peak velocity: 0.71 (0.007) • LV end-diastolic length: 0.74 (0.004) • LA end-systolic length: 0.72 (0.006) • IVS end-diastolic thickness: 0.62 (0.02) • LV posterior wall end-diastolic thickness: 0.6 (0.03) • Pleural effusion: 0.88 (<0.001) Change in diagnosis/treatment /referral: NR Patients' satisfaction rate: NR **<u>Service quality</u>** Time to perform ultrasound: • Time used from the start echocardiography to the finalized report: 1.32 ± 0.36 (1.58) hours • Time used for echocardiographic recordings by nurse: 0.48 ± 0.25 (0.93) hours • Time used for transfer of echocardiograms: 0.36 ± 0.26 (1.20) hours • Time used from echocardiograms uploaded to finalized report by cardiologist: 0.56 ± 0.16 (1.20) hours • Time used for analyses of echocardiograms by cardiologist: 0.20 ± 0.06 (0.27) hours

Study authors, country and purpose	Study design, period and setting	Patient recruitment	Index test 1	Index test 2 (if available)	Reference test	Outcomes	Findings
							Access to care • NR
Author(s): • Casey et al. (1996) Country(ies): • United Kingdom	Study design: • Paired comparative accuracy study Setting: • Single center Study period: • 4 months	Recruitment: • Total number of patients recruited: 10 • Excluded based on criteria: 0 • Declined to participate: 0 • Not approached: 0 • Attended: 10 *Index test 1* • Number of patients: 10 • Dropouts: 0 • Analyzed: 9 *Index test 2* • NA *Reference test* • Number of patients: 9 • Dropouts: 0 • Analyzed: 9	**Tele-echocardiography** Operator(s): • Pediatrician Real-time guidance: • Yes Mentors: • Pediatric cardiologist Training: NR Transmission: • Real-time • Transmission bandwidth: 128 kbit/s Interpreter(s) of the results: • Pediatric cardiologist	**In-person echocardiography by attending paediatrician** Operator(s): • Attending paediatrician Experience in ultrasound: • Operator(s): NR Ultrasound machine: • NR Interpreter(s) of the results: • Attending paediatrician	**In-person echocardiography by paediatric cardiologist** Operator(s): • Paediatric cardiologist Interpreter(s) of the results: • Paediatric cardiologist	• The **diagnostic accuracy** tele-echocardiography (Index test 1 & Reference test)	**Patient care quality** Proportion of agreement: *Index test 1 & Reference test* • 8/9 (89%) • 1 could not be diagnosed by tele-echocardiography because of poor echocardiographic image acquisition Sensitivity: NR Specificity: NR Positive Predictive Value (PPV): NR Negative Predictive Value (NPV): NR Kappa score: NR Intraclass Correlation Coefficient (ICC): NR Change in diagnosis/treatment /referral: • 8 cases avoided being transferred to the regional referral unit for diagnosis • 1 case required follow-up by paediatric cardiologist Patients' satisfaction rate: NR **Service quality** • NR **Access to care** • NR
Author(s): • Widmer et al. (2003) Country(ies): • Switzerland	Study design: • Paired comparative accuracy study Setting: • Singe-center Study period: • January 1998 to January 2002 (48 months)	Recruitment: • Total number of patients recruited: 194 • Excluded based on criteria: 0 • Declined to participate: 0 • Not approached: 0 • Attended: 194 *Index test 1* • Number of patients: 194 • Dropouts: 0 • Analyzed: 194 patients with 214 tele-echocardiograms	**Tele-ultrasound** Operator(s): • Local sonography technician Real-time guidance: • Yes Mentors: • Paediatric cardiologist Training: • Lecture and Practice • Length: 2 years	**NA**	**Paediatric cardiologist's interpretation** Number of References: 3 • Echocardiography videotapes were reviewed by the paediatric cardiologist if tele-echocardiography findings were normal • Re-examinations by the paediatric cardiologist in inconclusive cases • Face-to-face consultation and echocardiographic follow-up Operator(s):	• The diagnostic accuracy of tele-echocardiography (Index test 1 & Reference test)	**Patient care quality** Proportion of agreement • 191/194 (98%) patients had correct diagnosis • 3/194 (2%) patients had uncertain or incorrect diagnosis Sensitivity: NR Specificity: NR Positive Predictive Value (PPV): NR Negative Predictive Value (NPV): NR Kappa score: NR

Study authors, country and purpose	Study design, period and setting	Patient recruitment	Index test 1	Index test 2 (if available)	Reference test	Outcomes	Findings
		Index test 2 • NA *Reference test* • Number of patients: 194 • Dropouts: 0 • Analyzed: 194 *Subpopulation* • Children had subsequent face-to-face echocardiography • Number of patients: 129	Transmission: • Real-time and video-taped • Transmission bandwidth: telemedicine link across three ISDN lines with a total transmission rate of 384 kbit/s Interpreter(s) of the results: • Remote echocardiography specialist		• Local experienced sonography technician acquired echocardiography videotape • Paediatric cardiologist acquired in-person or re-examining echocardiography Interpreter(s) of the results: • Paediatric cardiologist		Intraclass Correlation Coefficient (ICC): NR Change in diagnosis/treatment /referral: • 6 cases avoided urgent transfer Patients' satisfaction rate: NR **<u>Service quality</u>** Time to perform ultrasound: NR Image quality: • All were sufficient for interpretation except for one patient with distally located coarctation Performers' satisfaction rate or confidence level: NR **<u>Access to care</u>** • NR
Author(s): • Evangelista et al. (2016) Country(ies): • Spain	Study design: • Paired comparative accuracy study Setting: • Multi-center Study period: • 6 months	Recruitment: • Total number of patients recruited: 1312 • Excluded based on criteria: 0 • Declined to participate: 0 • Not approached: 0 • Attended: 1312 *Index test 1* • Number of patients: 1312 • Dropouts: 0 • Analyzed: 1312 *Index test 2* • Number of patients: 1312 • Dropouts: 0 • Analyzed: 1312 *Reference test* • Number of patients: 859 • Dropouts: 85 • Analyzed: 774 Subpopulation: • NR	**HCU interpreted by remote experts** Operator(s): • FDs Real-time guidance: • No Mentors: • NA Training: • Lecture and Practice • Length: 7 hours per day for 4 days Transmission: • Storage • Transmission bandwidth: Broadband internet connection Interpreter(s) of the results: • Remote experts	**HCU interpreted by FDs** Operator(s): • FDs Interpreter(s) of the ultrasound: • FDs	**Conventional echocardiographic (CE) studies** Operator(s): • Blinded independent expert echocardiographers Interpreter(s) of the results: • Same blinded independent expert echocardiographers	• FDs and remote expert diagnosis concordance (Index test 1 & Index test 2) • Agreement and accuracy of HCU diagnosis by remote experts compared with CE (Index test 1 & Reference test) • Changes in FDs' management after remote experts' interpretation (Index test 1 & Index test 2)	**<u>Patient care quality</u>** Proportion of agreement: NR Sensitivity: *Index test 1 & Index test 2:* ranging from 41.4-72.7% • AS: 50.0 (0.39-0.63) • AR: 58.3 (43.3 to 73.3) • MR: 72.7 (61.2 to 84.2) • MS: 62.8 (22.7 to 100) • TR: 41.4 (21.7 to 61.0) • HCM: 44.4 (6.4 to 82.5) • LV dysf: 50 (30.4 to 69.6) • LVH: 71.4 (63.1 to 79.7) • LA dilation: 41.5 (25.2 to 57.8) • AA dilation: 54.1 (37.1 to 70.2) *Index test 1 & Reference test:* ranging from 62.5-100% • AS: 98.4 (90.7 to 99.9) • AR: 96.8 (82.0 to 99.8) • MR: 96.0 (85.4 to 99.3) • MS: 100 (31.9 to 100) • TR: 80.9 (66.3 to 90.8) • HCM: 87.5 (44.7 to 99.3) • LV dysf: 90 (75.4 to 96.7) • LVH: 92.5 (86.3 to 96.1) • LA dilation: 62.5 (50.9 to 72.8) • AA dilation: 76 (61.5 to 86.5) Specificity: *Index test 1 & Index test 2:* ranging from 92.7-99.8% • AS: 98.1 (97.0 to 99.1) • AR: 99.0 (98.3 to 99.6)

Study authors, country and purpose	Study design, period and setting	Patient recruitment	Index test 1	Index test 2 (if available)	Reference test	Outcomes	Findings
							• MR: 97.7 (96.8 to 98.6) • MS: 98.1 (97.3 to 98.9) • TR: 98.9 (98.3 to 99.5) • HCM: 99.8 (99.6 to 100) • LV dysf: 92.7 (91.3 to 94.2) • LVH: 97.4 (96.7 to 98.6) • LA dilation: 97.7 (96.8 to 98.6) • AA dilation: 99.1 (98.4 to 99.6) *Index test 1 & Reference test:* ranging from 92.1-99.5% • AS: 92.1 (88.8 to 93.9) • AR: 98.6 (97.4 to 99.3) • MR: 98.6 (97.3 to 99.3) • MS: 98.9 (94.6 to 99.6) • TR: 98.6 (97.4 to 99.3) • HCM: 99.5 (98.6 to 99.8) • LV dysf: 97.1 (95.5 to 98.1) • LVH: 96.5 (94.7 to 97.8) • LA dilation: 93.9 (91.8 to 96.5) • AA dilation: 97.9 (96.5 to 98.7) Positive Predictive Value (PPV): *Index test 1 & Index test 2:* ranging from 13.9-74.4% • AS: 49.2 (35.3 to 63.0) • AR: 68.3 (52.8 to 83.8) • MR: 62.3 (50.9 to 73.8) • MS: 18.7 (1.9 to 31.7) • TR: 46.2 (25.1 to 67.2) • HCM: 66.7 (20.6 to 100) • LV dysf: 13.9 (6.9 to 20.8) • LVH: 74.4 (66.2 to 82.6) • LA dilation: 37.0 (21.9 to 52.0) • AA dilation: 64.5 (45.4 to 80.2) *Index test 1 & Reference test:* ranging from 27.3-84.9% • AS: 53.7 (44.5 to 62.7 • AR: 75.6 (53.3 to 87.1) • MR: 83.5 (70.5 to 91.1) • MS: 27.3 (17.3 to 60.1) • TR: 77.2 (61.7 to 88.0) • HCM: 63.6 (31.6 to 87.6) • LV dysf: 63.1 (49.3 to 75.2) • LVH: 84.9 (77.8 to 90.1) • LA dilation: 54.4 (43.7 to 64.7) • AA dilation: 71.7 (57.4 to 81.8) Negative Predictive Value (NPV): *Index test 1 & Index test 2:* ranging from 97-99.8% • AS: 98.1 (97.2 to 99.0)

Study authors, country and purpose	Study design, period and setting	Patient recruitment	Index test 1	Index test 2 (if available)	Reference test	Outcomes	Findings
							• AR: 98.4 (97.7 to 99.1) • MR: 98.5 (97.8 to 99.3) • MS: 99.8 (99.5 to 100) • TR: 98.7 (98.0 to 99.3) • HCM: 99.6 (99.2 to 99.9) • LV dysf: 98.7 (98.1 to 99.4) • LVH: 97.0 (96.0 to 98.0) • LA dilation: 98.1 (97.3 to 98.9) • AA dilation: 98.7 (97.8 to 99.2) *Index test 1 & Reference test:* ranging from 95.6-100% • AS: 99.8 (99.0 to 99.9) • AR: 99.8 (99.1 to 100) • MR: 99.7 (98.8 to 99.9) • MS: 100 (99.6 to 100) • TR: 98.9 (97.7 to 99.) • HCM: 99.9 (99.1 to 100) • LV dysf: 99.4 (98.4 to 99.8) • LVH: 98.4 (96.9 to 99.1) • LA dilation: 95.6 (93.7 to 96.9) • AA dilation: 98.5 (97.0 to 99.1) Kappa score *Index test 1 & Index test 2* • AS: 0.53 (0.39–0.63) • AR: 0.61 (0.50 to 0.74) • MR: 0.65 (0.56 to 0.74) • MS: 0.29 (0.9 to 0.47) • TR: 0.42 (0.25 to 0.59) • HCM: 0.53 (0.23 to 0.83) • LV dysf: 0.51 (0.37 to 0.62) • LVH: 0.70 (0.60 to 0.78) • LA dilation: 0.38 (0.24 to 0.50) • AA dilation: 0.54 (0.43 to 0.71) *Index test 1 (Group A) & Reference test* • AS: 0.66 (0.57 to 0.74) • AR: 0.84 (0.75 to 0.93) • MR: 0.88 (0.81 to 0.94) • MS: 0.43 (0.13 to 0.82) • TR: 0.78 (0.68 to 0.88) • HCM: 0.73 (0.50 to 0.96) • LV dysf: 0.72 (0.62 to 0.83) • LVH: 0.77 (0.67 to 0.88) • LA dillation: 0.63 (0.53 to 0.73) • AA dilation: 0.71 (0.61 to 0.0.82) Intraclass Correlation Coefficient (ICC): NR Change in diagnosis/treatment /referral:

Study authors, country and purpose	Study design, period and setting	Patient recruitment	Index test 1	Index test 2 (if available)	Reference test	Outcomes	Findings
							Index test 1 & Index test 2 • Requested conventional echocardiography: 647/859 (859-212) (75%) • Referred to Cardiology: 25/41 (41-16) (61%) • Clinical follow-up: 105/247 (247-142) (42%) • Discharge: 80/165 (165-85) (48%) Patients' satisfaction rate: NR **<u>Service quality:</u>** Time to perform: ultrasound: NR Image quality: *Index test 1* • Good: 35.4% • Acceptable: 45.4% • Poor: 19.2% • Inconclusive: 8.7% Performer's satisfaction rate or confidence level: NR **<u>Access to care:</u>** • NR
Author(s): • Sable et al. (2002) Country(ies): • USA	Study design: • Paired comparative accuracy study Setting: • Multi-center Study period: • April 1998 to October 2000 (30 months)	Recruitment: • Total number of patients recruited: 364 • Excluded based on criteria: 0 • Declined to participate: 0 • Not approached: 0 • Attended: 364 *Index test 1* • Number of patients: 364 • Dropouts: 0 • Analyzed: 364 patients with 500 telemedicine transmissions *Index test 2* • NA *Reference test* • Number of patients: 364 • Dropouts: 0 • Analyzed: 364	**Tele-ultrasound** Operator(s): • Sonographers Real-time guidance: • Yes Mentors: • Pediatric cardiologists licensed in both the District of Columbia and Maryland Training: • Lecture and Practice • Length: NR Transmission: • Real-time and Storage • Transmission bandwidth: 3 ISDN (384 kilobits per second) Interpreter(s) of the results: • Pediatric imaging	**NA**	**Interpretation on video-taped echocardiogram or Subsequent follow-up echocardiogram** Number of reference tests: 2 Operator(s): • Sonographers Interpreter(s) of the results: • Physician who was covering the echocardiography laboratory when the tape arrived	• The **agreement** between remote-mentored echocardiography and the subsequent review (Index test 1 & Reference test) • **Examination time** of tele-echocardiography	**<u>Patient care quality</u>** Proportion of agreement: NR Sensitivity: NR Specificity: NR Positive Predictive Value (PPV): NR Negative Predictive Value (NPV): NR Kappa score: NR Intraclass Correlation Coefficient (ICC): NR Change in diagnosis/treatment /referral: *Diagnosis* • 1 diagnostic change after videotape interpretation • 3/264 diagnostic changes after subsequent follow-up *Treatment* • 151/500 (30%) studies had altered immediate patient management ○ 76/151 (50%) had indomethacin treatment for PDA ○ 45/151 (30%) had retraction of umbilical venous catheters from the left atrium

Study authors, country and purpose	Study design, period and setting	Patient recruitment	Index test 1	Index test 2 (if available)	Reference test	Outcomes	Findings
			cardiologists				○ 19/151 (13%) had inotropic or anticongestive therapy ○ 8/151 (5%) had prostaglandin infusion *Transfer/Transportation* • 19/364 (5%) were transported to central hospital • 14/364 (4%) avoided transportation Patients' satisfaction rate: NR **Service quality** Time to perform ultrasound • Time from request for echocardiogram to completion of the videoconference: 28 ± 14 minutes • Total video conference time: 20 ± 8 minutes • Waiting time: 8 ± 11 minutes • Time to send videotape: 12 ± 16 hours Quality of images: NR Performers' satisfaction rate: NR **Access to care** Transportation time: • Average time saving for cardiologist: 4.2 person-hours/week
Author(s): • Grant et al. (2009) Country(ies): • UK	Study design: • Paired comparative accuracy study Setting: • Multicenter Study period: • 1999 to 2006	Recruitment: • Total number of patients recruited: 124 • Excluded based on criteria: 0 • Declined to participate: 0 • Not approached: 0 • Attended: 124 *Index test 1* • Number of patients: 124 • Dropouts: 0 • Analyzed: 124 *Index test 2:* • Number of patients: 124 • Dropouts: 0 • Analyzed: 124 *Reference test:* • Number of patients: 114 • Dropouts: 5 • Analyzed: ○ For diagnostic accuracy:	**Tele-ultrasound** Operator(s): • Attending paediatrician Real-time guidance: • Yes Mentors: • Paediatric cardiologist Training: • NR Transmission: • Real-time • Transmission bandwidth: NR Interpreter(s) of the results: • An agreement between local pediatricians and	**On-site Echocardiogram** Operator(s): • Attending paediatrician Interpreter(s) of the results: • Attending paediatrician	**Hands-on consultation and echocardiogram** Operator(s): • Paediatric cardiologist at RPCU or at DGHs Interpreter(s) of the results: • Paediatric cardiologist at RPCU or DGHs	• **Diagnostic agreement** of tele-ultrasound, on-site echocardiogram, and hands-on echocardiogram (Index test 1 & Reference test and Index test 2 & Reference test)	**Patient care quality** Proportion of agreement *Index test 1 & Reference test:* 105/109 (96%) cases were accurately diagnosed *Index test 2 & Reference test:* 63/109 (58%) cases were accurately diagnosed Sensitivity: NR *Index test 1 & Reference test:* 97% *Index test 2 & Reference test:* 56% Specificity: NR *Index test 1 & Reference test:* 96% *Index test 2 & Reference test:* 64% Positive Predictive Value (PPV): *Index test 1 & Reference test:* 98.7% *Index test 2 & Reference test:* 83.9% Negative Predictive Value (NPV): *Index test 1 & Reference test:* 88.9% *Index test 2 & Reference test:* 30.2%

Study authors, country and purpose	Study design, period and setting	Patient recruitment	Index test 1	Index test 2 (if available)	Reference test	Outcomes	Findings
		109 ○ For patient transfers: 124	pediatric cardiologist at the RPCU				Kappa score (95% confidence interval) *Index test 1 & Reference test:* 0.89 (0.71-1.0) *Index test 2 & Reference test:* 0.14 (0-0.31) Intraclass Correlation Coefficient (ICC): NR Change in diagnosis/treatment /referral: • 93/124 (75%) patient transfers were avoided • 17 patients were urgently transferred • 14 patients were semi-urgently transferred within 48h Patients' satisfaction rate: NR **<u>Service quality</u>** Time to perform ultrasound *Index test 1* • 19.8 min (range 9 - 44 min) Quality of images: NR Performers' satisfaction rate (5-point Likert scale): • Telemedicine is useful: 4.5 ± 0.82 • They felt reassured by the facility: 4.2 ± 1.09 **<u>Access to care</u>** Cost saved per patient with telemedicine service for each district hospital • ALT: £1822 • CAH: £608 • AAH: £739
Author(s): • Alsharqi et al. (2022) Country(ies): • India + UK	Study design: • Paired comparative accuracy study Setting: • Multicenter Study period: • February 2019 to July 2021 (29 months)	Recruitment: • Total number of patients recruited: 301 • Excluded based on criteria: 0 • Declined to participate: 0 • Attended: 301 *Index test 1* • Number of patients: 301 • Dropouts: 0 • Analyzed: 109 *Index test 2* • NA *Reference test* • Number of patients: 36 • Dropouts: 0	**Tele focused echocardiography** Operator(s): • Trained obstetricians Real-time guidance: • No Mentors: • NA Training: • Lecture and Practice • Length: 2 days of lecture and multiple practice sessions Transmission: • Storage	**NA**	**Standard echocardiogram** Operator(s): • NR Interpreter(s) of the results: • NR	• The **diagnostic accuracy** of tele-FOCUS (Index test 1 & Reference test) • **Agreement** between two experts who read images of tele-FOCUS (Index test 1) • The ability of tele- FOCUS to detect echocardiographic abnormalities on scans in which the parameter could be assessed (Index test 1)	**<u>Patient care quality</u>** Proportion of agreement: ranging from 93.58% to 100% • Aortic valve stenosis: 100% • Aortic valve regurgitation: 100% • Mitral valve stenosis: 100% • Mitral valve regurgitation: 97.25% • Tricuspid valve stenosis: 100% • Tricuspid valve regurgitation: 95.37% • Rheumatic valve disease: 100% • LV enlargement: 97.25% • LVEF:93.58% • LV regional wall motion abnormalities: 96.33% • RV enlargement: 95.41% • RV regional wall motion abnormalities: 99.08% • LA enlargement: 94.5% • RA enlargement: 97.25% • Pericardial effusion: 97.25% • Thrombus: 100%

Study authors, country and purpose	Study design, period and setting	Patient recruitment	Index test 1	Index test 2 (if available)	Reference test	Outcomes	Findings
		• Analyzed: 36	• Transmission bandwidth: NR Interpreter(s) of the results: • Two experts				• Tachycardia: 96.33% Sensitivity: NR Specificity: NR Positive Predictive Value (PPV) Negative Predictive Value (NPV) Kappa score *Index test 1 (Between the experts)* • Aortic valve stenosis: k=1 • Aortic valve regurgitation: k =1 • Mitral valve stenosis: k=1 • Mitral valve regurgitation: k=0.921 • Tricuspid valve stenosis: NA • Tricuspid valve regurgitation: k=0.852 • Rheumatic valve disease: k=1 • LV enlargement: k=0.809 • LVEF: k=0.839 • LV regional wall motion abnormalities: k=0.648 • RV enlargement: k=0.423 • RV regional wall motion abnormalities: NA • LA enlargement: k=0.683 • RA enlargement: k=0.386 • Pericardial effusion: k=0.932 • Thrombus: k=1 • Tachycardia: k=0.798 *Index test 1 & Reference test*: NR Intraclass Correlation Coefficient (ICC): NR Change in diagnosis/treatment /referral: • No patients required additional medication or change in delivery plan Patients' satisfaction rate: NR **<u>Service quality</u>** Time to perform ultrasound: NR Quality of images: NR Performers' satisfaction rate: NR **<u>Access to care</u>** • NR
Ultrasound indication: Fetal echocardiography							
Author(s):	Study design:	Recruitment:	**Tele-ultrasound**	**In-person FE at a district**	**In-person FE at regional fetal**	• **Diagnostic accuracy** of	**<u>Patient care quality</u>**

Study authors, country and purpose	Study design, period and setting	Patient recruitment	Index test 1	Index test 2 (if available)	Reference test	Outcomes	Findings
• McCrossan et al. (2011) Country(ies): • UK	• Paired comparative accuracy study Setting: • Single center Study period: • 20 months	• Total number of patients recruited: 67 • Excluded based on criteria: 0 • Declined to participate: 0 • Not approached: 0 • Attended: 67 *Index test 1* • Number of patients: 67 • Dropouts: 0 • Analyzed: 69 (including one set of twin and a repeated tele-echocardiography) *Index test 2* • Number of patients: 67 • Dropouts: 0 • Analyzed: 69 including one set of twin and a repeated tele-echocardiography *Reference test* • Number of patients: 66 • Dropouts: 1 • Analyzed: 67 (with one set of twin)	Operator(s): • Sonographer Real-time guidance: • Yes Mentors: • Remote fetal cardiologist at the regional center Training: • NR Transmission: • Real-time • Transmission bandwidth: NR Interpreter(s) of the results: • Remote fetal cardiologist at the regional center	**general hospital (DGH)** Operator(s): • Radiographer Interpreter(s) of the results: • Radiographer	**cardiology unit** Operator(s): • Fetal cardiologist Interpreter(s) of the results: • Fetal cardiologist	remote fetal-tele echocardiograms (Index test 1 & Reference test) • **Performers' opinions** on fetal tele-echocardiogram • **Quality** of remote fetal tele-echocardiograms (Index test 1)	Proportion of agreement: *Index test 1 & Reference test:* 97% *Index test 2 & Reference test:* 68% Sensitivity *Index test 1 & Reference test:* 91% *Index test 2 & Reference test:* 72% Specificity *Index test 1 & Reference test:* 98% *Index test 2 & Reference test:* 67% Positive Predictive Value (PPV) *Index test 1 & Reference test:* 91% *Index test 2 & Reference test:* 28.5% Negative Predictive Value (NPV) *Index test 1 & Reference test:* 98% *Index test 2 & Reference test:* 92.7% Kappa score *Index test 1 & Reference test:* k=0.89 *Index test 2 & Reference test:* k=0.25 Intraclass Correlation Coefficient (ICC): NR Change in diagnosis/treatment /referral: NR Patients' satisfaction rate: NR **Service quality** Time to perform ultrasound: NR Quality of images: *Index test 1* • Median video quality (IQR) 4/5 (3.5-4.5) • Median audio quality (IQR) 4/5 (3.5-4.5) • Median ease of use (IQR) 4/5 (4-4.5) • Median overall quality (IQR) 4/5 (3.6-4.5) Performers' satisfaction rate at the start and end of the study (Likert score 1 – 5) *Confidence in FE technique* • Start 2/5 • End 3.8/5 *Confidence in detecting CHD* • Start 1.8/5 • End 4/5 *Telemedicine equipment was easy to use*

Study authors, country and purpose	Study design, period and setting	Patient recruitment	Index test 1	Index test 2 (if available)	Reference test	Outcomes	Findings
							• Start 3.4/5 • End 4.8/5 *Feedback from experts via tele-linked scan is beneficial* • Start 4.2/5 • End 4.8/5 *Felt awkward performing FE in front of paediatric cardiologist* • Start 2.6/5 • End 1.6/5 *Saved videos for interpretation were better than a "live telemedicine consultation* • Start 2/5 • End 1.4/5 **<u>Access to care</u>** • NR
Ultrasound indication: Obstetrical ultrasound							
Author(s): • Jemal et al. (2022) Country(ies): • Ethiopia	Study design: • Paired comparative accuracy study Setting: • Single center Study period: • July 1st, 2021 to August 30th, 2021 (2 months)	Recruitment: • Total number of patients recruited: 2795 • Excluded based on criteria: 0 • Declined to participate: 0 • Not approached: 0 • Attended: 2795 *Index test 1* • Number of patients: 2795 • Dropouts: 0 • Analyzed: 100 *Index test 2* • NA *Reference test* • Number of patients: 2795 • Dropouts: 0 • Analyzed: 100 *Subpopulation:* • Number of patients: 180 random participants surveyed for experience • Number of patients: 100 random participants	**Tele-ultrasound** Operator(s): • HCPs Real-time guidance: • Yes Mentors: • NR Training: • Lecture and Practice • Length: NR Transmission: • Real-time and store-and-forward • Transmission bandwidth: NR Interpreter(s) of the results: • HCPs	**NA**	**Obstetricians' interpretation on images acquired by HCPs** Operator(s): • HCPs Interpreter(s) of the results: • Obstetricians	• **Concordance in interpretations** between HCPs and obstetricians (Index test 1 & Reference test) • **Patient's experience** with and attitudes towards tele-ultrasound and access to antenatal care • **HCP's experience** with and attitudes towards tele-ultrasound	**<u>Patient care quality</u>** Proportion of agreement: ranging from 79-100% • Placental grading (Grannum classification): 79% • Fetal cardiac activity 98% • Fetal congenital anomaly 98% • Placental location 97% • Intrauterine fetal demise: 100% • Intrauterine growth restriction: 100% • Placenta previa: 100% • Ventriculomegaly: 99% • Anencephaly: 100% • Spina bifida: 99% • Cephalocele: 99% • Fetal hydrops: 98% • Assessment of fetal presentation: 100% • Biophysical profile: 94% • Anatomic assessments: 100% Sensitivity: NR Specificity: NR Positive Predictive Value (PPV): NR Negative Predictive Value (NPV): NR Kappa score: NR Intraclass Correlation Coefficient (ICC): NR

Study authors, country and purpose	Study design, period and setting	Patient recruitment	Index test 1	Index test 2 (if available)	Reference test	Outcomes	Findings
		surveyed for clinic experience on Saturday					Change in diagnosis/treatment /referral: NR *Referral* • 108/2795 (58 from Hambiso Health Centre and 50 from Fitche 1 Health Centre) o Multi gestation: 35 o Malpresentation: 29 o Missed/Incomplete abortion or intrauterine fetal demise: 18 o Ventriculomegaly: 8 o Anencephaly: 5 o Spina bifida: 2 o Oligohydramnios: 2 o Fetal hydrops: 1 o Ovarian cyst: 2 Patients' satisfaction rate: • 173/180 (96%) felt comfortable during the procedure • 179/180 (99%) agreed that they would recommend antenatal tele-ultrasound to friends and family • 176/180 (98%) were willing to undergo another antenatal ultrasound through telemedicine • 130/180 (72%) were satisfied with the picture quality • 139/180 (77%) were satisfied with the sound quality • 64/180 (36%) were not comfortable communicating with remote obstetrician • 177/180 (98%) agreed that the encounter was private and confidential • 89/180 (49%) disagreed that they had to wait long to receive healthcare • 54/180 (30%) were unsure or agreed that they had to wait long • 137/180 (76%) agreed that they were given enough information to prepare for the ultrasound • 113/180 (63%) agreed that they had enough time to think about questions and to ask the remote obstetrician **<u>Service quality</u>** Time to perform ultrasound: NR Image quality: NR Performers' satisfaction rate or confidence level: • 100% agreed that they received adequate training for image acquisition • 100% felt confident in their ability to acquire images

Study authors, country and purpose	Study design, period and setting	Patient recruitment	Index test 1	Index test 2 (if available)	Reference test	Outcomes	Findings
							• 100% enjoyed using telemedicine system • 100% felt that their patients was satisfied with the received level of care • 100% agreed telemedicine is an acceptable method of providing healthcare services • 100% agreed telemedicine improves access to needed healthcare services **<u>Access to care</u>** Transportation cost: • Traveling to health centers: 11.7 ± 12.7 Ethiopian Birr • Traveling to SIUCSH: 20.8 ± 20.9 Ethiopian Birr Transportation time: • Traveling to health centers: 44.1 ± 56.7 minutes • Traveling to SIUCSH: 54.2 ± 65.3 minutes Waiting time: NR
Author(s): • Toscano et al. (2021) Country(ies): • Peru + United States	Study design: • Paired comparative accuracy study Setting: • Single center Study period: • June 2018 to March 2019 (10 months)	Recruitment: • Total number of patients recruited: 126 • Excluded based on criteria: 0 • Declined to participate: 0 • Not approached: 0 • Attended: 126 *Index test 1* • Number of patients: 126 • Dropouts: 0 • Analyzed: 126 *Index test 2* • NA *Reference test* • Number of patients: 126 • Dropouts: 0 • Analyzed: 126	**Tele-ultrasound (Volume sweep imaging – VSI)** Operator(s): • A nurse and a care technician Real-time guidance: • No Mentors: • NA Training: • Lecture and Practice • Length: 4 hours of didactic sessions and 4 hours of hands-on training Transmission: • Storage • Transmission bandwidth: NR Interpreter(s) of the results: • a Maternal-Fetal Medicine fellow	**NA**	**Standard of care ultrasound** Operator(s): • Radiologists Interpreter(s) of the results: • Radiologists	• **Overall agreement** and Cohen's kappa on agreement on categorical variables between VSI and standard of care (SOC) ultrasound (Index test 1 & Reference test) • ICC values were calculated for biometry measurements acquired by VSI and SOC ultrasound	**<u>Patient care quality</u>** Proportion of agreement: ranging from 76.2-100% • Confirm live fetus (based on cardiac activity): 76.2% • Fetal number: 100% • Fetal presentation: 95.8% • Placental location 85.6% • Placenta Previa 96% • Placenta Previa (consensus read): 96.8% • Amniotic fluid volume 99.2% • Normal exam 95.2% • Normal exam (consensus read) 96% • Follow-up recommendation (% normal) 99.2% Sensitivity: NR Specificity: NR Positive Predictive Value (PPV): NR Negative Predictive Value (NPV): NR Kappa score • Confirm live fetus (based on cardiac activity): κ not defined • Fetal number: κ not defined • Fetal presentation: κ = 0.78 (0.53-1.0; p< 0.0001) • Placental location κ = 0.74 (0.63-0.85, p< 0.0001) • Placenta Previa: κ not defined • Placenta Previa (consensus read): κ not defined • Amniotic fluid volume: κ not defined • Normal exam: κ = 0.55 (0.2-0.9, p<0.0001)

Study authors, country and purpose	Study design, period and setting	Patient recruitment	Index test 1	Index test 2 (if available)	Reference test	Outcomes	Findings
							• Normal exam (consensus read): κ = 0.6 (0.25-0.94, p<0.0001) • Follow-up recommendation (% normal): κ not defined Intraclass Correlation Coefficient (ICC) (Fetal biometry): *Second trimester exams* • Biparietal diameter 0.84 (0.54-0.96, p<0.0001) • Head circumference 0.84 (0.69-0.91, p<0.0001) • Abdominal circumference 0.67 (0.45-0.8, p<0.0001) • Femur length 0.83 (0.7-0.91, p<0.0001) • Estimated gestational age 0.94 (0.65-0.98, p<0.0001) *Third trimester exams* • Biparietal diameter 0.33 (-0.1-0.64, p< 0.0001) • Head circumference 0.38 (0.06-0.62, p=0.001) • Abdominal circumference 0.28 (0.02-0.52, p=0.015) • Femur length 0.68 (0.32-0.87, p<0.0001) • Estimated gestational age 0.64 (-0.02-0.86, p<0.0001) *All exams* • Biparietal diameter 0.89 (0.5-0.96, p<0.0001) • Head circumference 0.86 (0.71-0.92, p<0.0001) • Abdominal circumference 0.81 (0.69-0.88, p<0.0001) • Femur length 0.93 (0.88-0.96, p<0.0001) • Estimated gestational age 0.95 (0.69-0.98, p<0.001) Change in diagnosis/treatment /referral: NR Patients' satisfaction rate: NR **<u>Service quality:</u>** Time to perform ultrasound: NR Image quality: *Index test 1* • Excellent (61.1%) • Acceptable (38.1%) • Poor (0.8%) Performer's satisfaction rate or confidence level *Confidence level of readers (3-point Likert scale)* • Live Fetus 3 (1-3) • Number of Fetuses 3 (1-3)

Study authors, country and purpose	Study design, period and setting	Patient recruitment	Index test 1	Index test 2 (if available)	Reference test	Outcomes	Findings
							• Fetal presentation 3 (1-3) • Placenta Previa 3 (1-3) • Amniotic Fluid Volume 3 (1-3) • Normal exam 3 (1-3) • Follow-up Recommendation (% normal) 3 (1-3) **<u>Access to care:</u>** • NR
Ultrasound indication: Breast Ultrasound							
Author(s): • Sun et al. (2022) Country(ies): • China	Study design: • Paired comparative accuracy study Setting: • Single center Study period: • April 2020 to June 2020 (3 months)	Recruitment: • Total number of patients recruited: 100 • Excluded based on criteria: 1 • Declined to participate: 0 • Not approached: 0 • Attended: 99 *Index test 1* • Number of patients: 99 • Dropouts: 0 • Analyzed: 99 *Index test 2* • Number of patients: 99 • Dropouts: 0 • Analyzed: 99 *Reference test* • Number of patients: 99 • Dropouts: 0 • Analyzed: 99	**Tele-ultrasound** Operator(s): • Trainee B (TB) Real-time guidance: • Yes Mentors: • Expert in breast US Training: • Lecture and Practice • Length: 5 hours Transmission: • Real-time • Transmission bandwidth: high-speed network Interpreter(s) of the results: • Resident B and the remote expert through discussion	**In-person ultrasound by naive operator** Operator(s): • Trainee A (TA) Interpreter(s) of the results: • Resident A	**In-person ultrasound and interpretations by experts** Number of References: 2 • The expert that guided resident B performed the on-site ultrasound and made independent interpretation • 2 other experts experienced US off-site experts were designated to analyze all data acquired by TA and TB in a blind manner Operator(s): • The expert who guided Resident B Interpreter(s) of the results: • The expert who guided Resident B • 2 other experts experienced US	• **Inter-operator consistency between the two residents and the on-site US expert** was compared (Index test & Reference test + Index 2 & Reference test) • The tele-US and normal US image quality • The target nodule image quality • Comprehensive assessment on a scale of 1-5	**<u>Patient care quality</u>** Proportion of agreement: *Index test 1 & Reference test:* 56/60 (93.3%) *Index test 2 & Reference test:* 38/60 (63.3%) Sensitivity: NR Specificity: NR Positive Predictive Value (PPV): NR Negative Predictive Value (NPV): NR Intraclass Correlation Coefficient (ICC) (Interobserver agreement) with two-way random effect model *Index test 1 & Reference test:* <u>BI-RADS categories</u>: 0.89 (0.81-0.93) <u>Ultrasound features:</u> • Shape 0.62 (0.39-0.77) • Orientation: 1 • Margin: 0.62 (0.43-0.76) • Echo pattern: 0.85 (0.76-0.91) • Posterior features: 0.57 (0.36-0.73) • Calcifications: 0.84 (0.74-0.90) • Vascularity: 0.69 (0.53-0.81) • Internal characteristics: 0.85 (0.75-0.91) <u>Target nodule measurement:</u> • Transverse diameter: 0.98 (0.96-0.99) • Anterior-posterior diameter: 0.96 (0.94-0.98) • Longitudinal diameter: 0.93 (0.86-0.96) *Index test 2 & Reference test:* <u>BI-RADS categories</u>: 0.73 (0.54-0.85) <u>Ultrasound features:</u> • Shape 0.66 (0.43-0.81) • Orientation: NA • Margin: 0.32 (-0.08-0 58) • Echo pattern: 0.65 (0.43-0.80)

Study authors, country and purpose	Study design, period and setting	Patient recruitment	Index test 1	Index test 2 (if available)	Reference test	Outcomes	Findings
							• Posterior features: 0.47 (0.17-0.69) • Calcifications: 0.81 (0.66-0.90) • Vascularity: 0.28 (-0.02-0.53) • Internal characteristics: 0.37 (0.08-0.61) <u>Target nodule measurement:</u> • Transverse diameter: 0.89 (0.79-0.94) • Anterior-posterior diameter: 0.89 (0.79-0.94) • Longitudinal diameter: 0.89 (0.78-0.94) Change in diagnosis/treatment /referral: NR Patients' satisfaction rate (n=99) *Tele-US acceptance* • Yes: 63 (63.6%) • No: 34 (34.3%) • Uncertain: 2 (2%) *Willing to pay for TUS* • Yes: 60 (60.6%) • No: 28 (28.3%) • Uncertain: 11 (11%) **<u>Service quality</u>** Time to perform ultrasound *Index test 1* • 397.07 ± 192.34 seconds *Index test 2* • 355.63 ± 166.65 seconds Quality of images *Index test 1* <u>Comprehensive assessment score (n=99):</u> • Images were undiagnosable or not meaningful: 1 (1%) • Poor image quality may affect the diagnosis: 3 (3%) • Acceptable for interpretation: 20 (20.2%) • Minor suggestions for improvement of image quality: 50 (50.1 %) • Perfect: 25 (25.2%) • Total score: 3.96 ± 0.81 <u>Qualification rate</u> Background image quality (n=99): • Grayscale: 83 (83.8%) • Focus position: 89 (89.9%) • TGC: 94 (80.4%) • Depth: 58 (58.6%) Target nodule image quality (n=56):

Study authors, country and purpose	Study design, period and setting	Patient recruitment	Index test 1	Index test 2 (if available)	Reference test	Outcomes	Findings
							• Color Doppler adjustment: 52 (92.8%) • Visibility of all key information: 5 (94.6%) *Index test 2* <u>Comprehensive assessment score (n=99):</u> • Images were undiagnosable or not meaningful: 1 (1%) • Poor image quality may affect the diagnosis: 20 (20.2%) • Acceptable for interpretation: 52 (52.5%) • Minor suggestions for improvement of image quality: 23 (23.2%) • Perfect: 3 (3%) • Total score: 3.07 ± 0.77 <u>Qualification rate:</u> Background image quality (n=99): • Gray value: 69 (69.6%) • Focus position: 85 (85.9%) • TGC: 68 (68.7%) • Depth: 24 (24.2%) Target nodule image quality (n=38): • Color Doppler adjustment: 29 (76.3%) • Visibility of all key information: 28 (73.7%) Performers' satisfaction rate *Value of tele-US in diagnosis* • Yes: 69/99 (69.7%) • No: 29/99 (29.3%) • Uncertain: 1/99 (1%) *Guidance had a training effect on the performer* • Yes: 68/99 (68%) • No: 29/99 (29.3%) • Uncertain: 2/99 (2%) **<u>Access to care</u>** • NR
Ultrasound indication: Thyroid ultrasound							
Author(s): • Li et al. (2022) Country(ies): • China	Study design: • Paired comparative accuracy study Setting: • Single center Study period: • April 2020 to June 2020 (3 months)	Recruitment: • Total number of patients recruited: 99 • Excluded based on criteria: 2 • Declined to participate: 0 • Not approached: 0 • Attended: 97 *Index test 1* • Number of patients: 97	**Tele-ultrasound** Operator(s): • Resident B Real-time guidance: • Yes Mentors: • Expert Training:	**In-person ultrasound by naive operator** Operator(s): • Resident A Interpreter(s) of the results: • Resident A	**In-person ultrasound by experts** Number of References: 2 • The expert who guided resident B performed the on-site ultrasound and made independent interpretations • 2 other experts with 5 years of experience in thyroid ultrasound as off-site experts were designated to analyze all the data in a blind manner	• **Inter-operator consistency** between the two residents and the on-site US expert for thyroid was compared (Index test & Reference test + Index 2 & Reference test) • The background image quality • The target nodule image quality	**<u>Patient care quality</u>** Proportion of agreement (on targeted nodules) *Index test 1 & Reference test*: 59/66 (89.4%) *Index test 2 & Reference test:* 39/66 (56.5%) Sensitivity: *Index test 1 & Reference test:* 59/66 (89.4%) *Index test 2 & Reference test:* 39/66 (59.1%) Specificity: *Index test 1 & Reference test:* 24/31 (77.4%)

Study authors, country and purpose	Study design, period and setting	Patient recruitment	Index test 1	Index test 2 (if available)	Reference test	Outcomes	Findings
		• Dropouts: 0 • Analyzed: 97 *Index test 2* • Number of patients: 97 • Dropouts: 0 • Analyzed: 97 *Reference test* • Number of patients: 97 • Dropouts: 0 • Analyzed: 97	• Lecture and Practice • Length: NR Transmission: • Real-time • Transmission bandwidth: high-speed network Interpreter(s) of the results: • Resident B and the remote expert through discussion		Operator(s): • The expert that guided resident B Interpreter(s) of the results: • The expert that guided resident B • 2 independent off-site US experts		*Index test 2 & Reference test:* 1/31 (3.2%) Positive Predictive Value (PPV): *Index test 1 & Reference test*: 59/66 (89.4%) *Index test 2 & Reference test:* 36/69 (56.5%) Negative Predictive Value (NPV): *Index test 1 & Reference test:* 24/31 (77.4%) *Index test 2 & Reference test:* 1/28 (3.6%) Intraclass Correlation Coefficient (ICC) (Interobserver agreement): *Index test 1 & Reference:* <u>Target nodule features</u> • Composition: 0.819 (0.714-0.889) • Echogenicity: 0.694 (0.524-0.806) • Shape: 0.788 (0.668-0.868) • Margin: 0.657 (0.484-0.781) • Echogenic foci: 0.801 (0.686-0.877) • Vascularity: 0.775 (0.649-0.840) <u>ACR TI-RADS categories</u>*:* 0.791 (0.672-0.870) <u>Target nodule measurement</u> • Transverse diameter: 0.979 (0.965-0.987) • Anterior-posterior diameter: 0.984 (0.9730.990) • Longitudinal diameter: 0.961 (0.935-0.976) *Index test 2 & Reference* <u>Target nodule features</u> • Composition: 0.737 (0.552-0.853) • Echogenicity: 0.531 (0.263-0.723) • Shape: 0.392 (0.091-0.627) • Margin: 0.462 (0.175-0.676) • Echogenic foci: 0.602 (0.356-0.769) • Vascularity: 0.647 (0.420-0.798) <u>ACR TI-RADS categories</u>*:* 0.724 (0.533-0.845) <u>Target nodule measurement</u>*:* • Transverse diameter: 0.972 (0.947-0.985) • Anterior-posterior diameter: 0.966 (0.937-0.982) • Longitudinal diameter: 0.964 (0.933-0.981) Change in diagnosis/treatment /referral: NR Patients' satisfaction rate (n=97) Synchronous TUS acceptance • Yes: 60 (61.9%) • No: 32 (33.0%) • Uncertain: 5 (5.2%)

Study authors, country and purpose	Study design, period and setting	Patient recruitment	Index test 1	Index test 2 (if available)	Reference test	Outcomes	Findings
							Willing to pay for TUS • Yes: 58 (59.8%) • No: 35 (36.1%) • Uncertain: 4 (4.1%) **Service quality** Time to perform ultrasound: *Index test 1* • 274.40 ± 117.43 (range 110.00 to 706.00 seconds) *Index test 2* • 193.43 ± 63.93 (range 100.00 to 359.00 seconds) Quality of images: *Index test 1* Comprehensive assessment score • Poor and cannot be used for diagnosis: 1/97 (1%) • Not good enough and could affect the diagnosis: 4/97 (4%) • Flawed but can be used for diagnosis: 22/97 (22.7%) • Good and can be used for diagnosis with satisfaction: 45/97 (46.4%) • Excellent and can be used for diagnosis with a high level of satisfaction: 25/97 (23.7%) • Total score: 3.92 ± 0.86 Background image quality • Gray value: 80 (82.5%) • Focus position: 87 (89.7%) • TGC: 78 (80.4%) • Depth: 83 (85.6%) Target nodule image quality • Color Doppler adjustment: 54 (91.5%) • Visibility of all key information: 56 (94.9%) *Index test 2* Comprehensive assessment score • Poor and cannot be used for diagnosis: 2/97 (2.1%) • Not good enough and could affect the diagnosis: 23/97 (23.7%) • Flawed but can be used for diagnosis: 48/97 (49.5%) • Good and can be used for diagnosis with satisfaction: 19/97 (19.6%) • Excellent and can be used for diagnosis with a high level of satisfaction: 5/97 (5.2%) • Total score: 3.01 ± 0.85

Study authors, country and purpose	Study design, period and setting	Patient recruitment	Index test 1	Index test 2 (if available)	Reference test	Outcomes	Findings
							Background image quality • Gray value: 52 (53.6%) • Focus position: 78 (80.4%) • TGC: 37 (38.1%) • Depth: 65 (67%) Target nodule image quality • Color Doppler adjustment: 29 (74.4%) • Visibility of all key information: 27 (69.2%) Performers' satisfaction rate: *Guidance is helpful* • Yes: 61 (62.9%) • No: 34 (35.1%) • Uncertain: 2 (2.1%) *Guidance had a training effect on the performer* • Yes: 63 (64.9%) • No: 33 (34.0%) • Uncertain: 1 (1%) **Access to care** • NR
Author(s): • Marini et al. (2021) Country(ies): • Peru + United States	Study design: • Paired comparative accuracy study Setting: • Single center Study period: • June 2018 to March 2019 (10 months)	Recruitment: • Total number of patients recruited: 121 • Excluded based on criteria: 0 • Declined to participate: 0 • Not approached: 0 • Attended: 121 *Index test 1* • Number of patients: 121 • Dropouts: 0 • Analyzed: 121 *Index test 2* • NA *Reference test* • Number of patients: 121 • Dropouts: 0 • Analyzed: 121	**Tele-ultrasound (Volume sweep imaging – VSI)** Operator(s): • A nurse and a care technician Real-time guidance: • No Mentors: • NA Training: • Lecture and Practice • Length: 8 hours Transmission: • Storage • Transmission bandwidth: NR Interpreter(s) of the results: • Abdominal imaging attending radiologists	**NA**	**Standard of care ultrasound** Operator(s): • Peruvian Radiologists Interpreter(s) of the results: • Peruvian Radiologists	• **Agreement** between (VSI) and standard of care ultrasound on presence of thyroid nodules and lobe diameters (Index test 1 & Reference test) • Thyroid gland visualization and **image quality** of tele-ultrasound	**Patient care quality** Proportion of agreement (Presence of a nodule): 98.3% Sensitivity: NR Specificity: NR Positive Predictive Value (PPV): NR Negative Predictive Value (NPV): NR Kappa score (Presence of a nodule) • k = 0.91 (0.78-1, p<0.0001) Intraclass Correlation Coefficient (ICC) (thyroid lobe diameters) • Right lobe AP: 0.37 (0.04-0.58, p=0.001) • Right lobe transverse: 0.57 (0.35-0.71, p <0.0001) • Left lobe AP: 0.42 (0.02-0.64, p<0.0001) • Left lobe transverse: 0.58 (0.01-0.79, p<0.0001) • Isthmus lobe AP: 0.48 (-0.22 to 0.77, p<0.0001) Change in diagnosis/treatment /referral: NR Patients' satisfaction rate: NR **Service quality:**

Study authors, country and purpose	Study design, period and setting	Patient recruitment	Index test 1	Index test 2 (if available)	Reference test	Outcomes	Findings
							Time to perform ultrasound: NR Image quality: *Index test 1* <u>Image quality</u> • Acceptable 12.4% • Excellent 87.6% <u>Left lobe</u> • 100% studies had ≥80% visualization <u>Right lobe</u> • 88% studies had ≥80% visualization and 12% had 50-80% visualization <u>Isthmus</u> • 100% studies had ≥80% visualization Performer's satisfaction rate or confidence level: NR **<u>Access to care:</u>** • NR
Ultrasound indication: Abdominal ultrasound							
Author(s): • Marini et al. (2021) Country(ies): • Peru + United States .	Study design: • Paired comparative accuracy study Setting: • Single center Study period: • June 2018 to March 2019 (10 months)	Recruitment: • Total number of patients recruited: 144 • Excluded based on criteria: 0 • Declined to participate: 0 • Not approached: 0 • Attended: 144 *Index test 1* • Number of patients: 144 • Dropouts: 0 • Analyzed: 144 *Index test 2* • NA *Reference test* • Number of patients: 144 • Dropouts: 0 • Analyzed: 144 *Subpopulation* • Examinations acceptable/excellent image quality • Number of patients: NR	**Tele-ultrasound (Volume sweep imaging – VSI)** Operator(s): • A nurse and a care technician Real-time guidance: • No Mentors: • NA Training: • Lecture and Practice • Length: 8 hours Transmission: • Storage • Transmission bandwidth: NR Interpreter(s) of the results: • Two separate board-certified abdominal fellowship-trained American radiologists	**NA**	**Standard of care ultrasound** Operator(s): • A Peruvian radiologist with 10 years of experience Interpreter(s) of the results: • Peruvian radiologist with 10 years of experience	• **Agreement** between VSI and standard of care ultrasound (Index test 1 & Reference test) • **Image quality** of VSI	**<u>Patient care quality</u>** Proportion of agreement: ranging from 43.4-100% *All exams* • Liver Echogenicity: 99.3% • Liver Abnormal: 86.1% • Gallbladder: 70.1% • Pancreas Abnormal: 43.4% • Right Kidney Abnormal: 65.2% • Exam Abnormal: 94% *Ignoring non-visualized cases* • Liver Echogenicity: 99.3% • Liver Abnormal: 99.2% • Gallbladder: 92.7% • Pancreas Abnormal: 100% • Right Kidney Abnormal: 98.9% • Exam Abnormal: 94% Sensitivity: • Cholelithiasis: 84.2% (60.4 - 96.6%) • Cholelithiasis after consensus read: 89.5% (66.9 - 98.7%) Specificity: • Cholelithiasis: 97.7% (91.9 - 99.7%) • Cholelithiasis after consensus read: 97.7% (91.9 - 99.7%)

Study authors, country and purpose	Study design, period and setting	Patient recruitment	Index test 1	Index test 2 (if available)	Reference test	Outcomes	Findings
							Positive Predictive Value (PPV): NR Negative Predictive Value (NPV): NR Kappa score: *All exams* • Liver Echogenicity: κ = 0.92 (0.84-1) • Liver Abnormal: κ = 0.15(-0.042-0.34) • Gallbladder: κ = 0.45(0.35-0.55) • Pancreas Abnormal: κ = 1 • Right Kidney Abnormal: κ = 0.13 (-0.11-0.37) • Exam Abnormal: κ = 0.84 (0.7-0.98) *Ignoring non-visualized cases* • Liver Echogenicity: 0.92(0.84-1) • Liver Abnormal: κ = 0.8(0.41-1.2) • Gallbladder: κ = 0.77(0.62-0.92) • Pancreas Abnormal: κ = 1 • Right Kidney Abnormal: κ = 0.66(0.033-1.3) • Exam Abnormal: κ = 0.79(0.65-0.93) ***Subpopulation (Acceptable/excellent image quality exams)*** Proportion of agreement: *All exams* • Liver Echogenicity: 100% • Liver Abnormal: 98.9% • Gallbladder: 86.8% • Pancreas Abnormal: 100% • Right Kidney Abnormal: 86.2% • Exam Abnormal: 94.5% *Ignoring non-visualized cases* • Liver Echogenicity: 100% • Liver Abnormal: 98.9% • Gallbladder: 92.9% • Pancreas Abnormal: 100% • Right Kidney Abnormal: 98.7% • Exam Abnormal: 94.5% Sensitivity: • Cholelithiasis: 93.3% (68.1 - 99.8%) • Cholelithiasis after consensus read: 100% (78.2 - 100%) Specificity: • Cholelithiasis: 97.0% (89.5 - 99.6%) • Cholelithiasis after consensus read: 97.0 (89.5 - 99.6%) Positive Predictive Value (PPV): NR

Study authors, country and purpose	Study design, period and setting	Patient recruitment	Index test 1	Index test 2 (if available)	Reference test	Outcomes	Findings
							Negative Predictive Value (NPV): NR Kappa score: *All exams* • Liver Echogenicity: κ = 1 (1-1) • Liver Abnormal: κ = 0.8 (0.41-1.2) • Gallbladder: κ = 0.69 (0.55-0.83) • Pancreas Abnormal: κ = 1 • Right Kidney Abnormal: κ = 0.13 (-0.11-0.37) • Exam Abnormal: κ = 0.84 (0.7-0.98) *Ignoring non-visualized cases* • Liver Echogenicity: κ = 1 (1-1) • Liver Abnormal: κ = 0.8 (0.41-1.2) • Gallbladder: κ = 0.8 (0.65-0.95) • Pancreas Abnormal: κ = 1 • Right Kidney Abnormal: κ = 0.66 (0.033-1.3) • Exam Abnormal: κ = 0.84 (0.7-0.98) Intraclass Correlation Coefficient (ICC): NR Change in diagnosis/treatment /referral: NR Patients' satisfaction rate: NR **Service quality:** Time to perform ultrasound: • Approximately 10 minutes Image quality: • Excellent: 24.3% (17.6-32.1%) • Acceptable: 38.9% (30.9-47.4%) • Poor: 36.8% (28.9%-45.2%) Performer's satisfaction rate or confidence level: NR **Access to care** • NR

cpsa
COLLEGE OF PHYSICIANS & SURGEONS OF ALBERTA

Submission to:	**Council**

Meeting Date:	Submitted by:		
May 29, 2025	Governance Committee		
Agenda Item Title:	6.1.1 Committee Annual Reports		
Action Requested:	☒ The following items require approval by Council. See below for details of the recommendation.	☐ The following item(s) are of particular interest to Choose an item. Feedback is sought on this matter.	☐ The attached is for information only. No action is required.
AGENDA ITEM DETAILS			
Recommendation:	That Council approves the 2024 Committee Annual Reports.		
Background:	The Governance Committee is responsible for annually confirming Committee mandates and making recommendations for changes to the structure or mandate of Council and its committees to ensure alignment of purpose, vision and strategy. At its April 2025 meeting, the Committee received and approved the reports for the following standing and priority Committees: • Executive Committee • Governance Committee • Finance & Audit Committee • Indigenous Advisory Circle By way of an e-vote, the Committee reviewed and approved the annual report for the Anti-Racism Anti-Discrimination Action Advisory Committee. They were able to compare each Committee's mandate and performance in 2024. There were no recommendations made for changes to the structure or mandate of the Council and its committees. These reports are attached and submitted for recommendation to Council. During the Council meeting, each Committee Chair will share a brief overview of their respective Committee and accomplishments for 2024 with Council, to increase Council members' awareness and understanding of the mandate and achievements with the Council Committees.		
Next Steps:	N/A		

cpsa
COLLEGE OF PHYSICIANS
& SURGEONS OF ALBERTA

List of Attachments:
1. 2024 Committee Annual Report – Executive Committee 2. 2024 Committee Annual Report – Governance Committee 3. 2024 Committee Annual Report – Finance & Audit Committee 4. 2024 Committee Annual Report - Anti-Racism Anti-Discrimination Action Advisory Committee 5. 2024 Committee Annual Report – Indigenous Advisory Circle

Anti-Racism Anti-Discrimination Action Advisory Committee (ARADAAC)

2024 Annual Report

Background

This report covers the period from January 1, 2024, to December 31, 2024. ARADAAC held two virtual meetings in 2024 (February / May). The work of the Committee The work of dismantling systemic racism and discrimination is challenging. Committee work was hampered by the departure of a CPSA team member in spring who had been offering dedicated support to the work. The work can also be influenced by global events, such as geopolitical conflicts, affecting committee and council members locally. ARADAAC was not immune. Recognizing this, in 2024 the committee needed to pause to regroup and recharge, engaging a third-party consultant to clarify its mission and vision while fostering safe spaces for navigating the anticipated growing pains of a new committee with an uncharted mandate. Now, the committee is revitalized, focussed, and poised for impact.

Roles and Responsibilities (as mandated in the TOR)	Activity Report
Assists with developing actions that advance CPSA's Anti-Racism Anti-Discrimination Strategic Direction in the 2022-2026 Strategic Plan.	• ARADAAC's February meeting focussed on setting priorities for 2024 and beyond, which were: ○ The development of a standard of practice addressing racism and discrimination. ○ Understanding the experience of international medical graduates. ○ Understanding how racism is reported. • ARADAAC and the Indigenous Advisory Circle collaboratively agreed to ensure that a member of each committee is designated as a representative to the other.
Provides advice and recommendations to CPSA Council, related to regulation of the medical profession.	• ARADAAC meeting summaries were provided to Council. • At the request of ARADAAC, Council directed that the CPSA Position Statement on Racism and Discrimination ("Statement") be updated, with a recurring mandatory review timeline, and collaboration and advice from the Indigenous Advisory Circle. This work was not completed in 2024. • In May, ARADAAC discussed a request from some regulated members to examine CPSA's Statement in light of antisemitism stemming from geopolitical events. There was

Roles and Responsibilities (as mandated in the TOR)	Activity Report
	agreement by all Agreement by all not to specifically address antisemitism.
Provides perspectives and advice on areas for improvement or change in the following regulatory areas: • Continuing Competence • Medical Facility Accreditation • Professional Conduct • Registration • Standards of Practice	• The Committee held an in-depth discussion on understanding the Code of Ethics and developing of a Standard of Practice addressing racism and discrimination.
Supports CPSA to help regulated members incorporate anti-racism and anti-discrimination in their practice with the goal of enhancing the patient experience.	• A recruitment drive was initiated and supported with the aim of ensuring committee composition and strength is supported.
Provides a safe space for collaboration, where members discuss and recommend action on research/work/initiatives occurring in the medical profession in Alberta.	• In October, CPSA obtained the services of Erin Davis, an award-winning consultant, to interview Committee members and assess the current state of ARADAAC. Strengths, challenges, and opportunities from these interviews were summarized into a Climate Assessment Report. The report found that ARADAAC members bring passion and expertise to a safe and respectful space for anti-racism and anti-discrimination discussion. ARADAAC also has strong potential to drive systemic change, but has encountered organizational and systemic barriers. ARADAAC has opportunity to clarify its role, mandate and authority while improving committee supports, structure and measurable outcomes for reporting. Recommendations from the report will be discussed and prioritized at a 2-day, in-person meeting in April 2025.

This report is to be submitted annually to the Governance Committee for consideration at its meeting prior to the May 2025 Council meeting.

This report covers the period from January 1, 2024 to December 31, 2024.

Roles and Responsibilities (as mandated in the TOR)	Activity Report
Establishes the agenda for Council Meetings.	• Executive Committee established the agenda for all 4 regular Council meetings in 2024. • Developed and recommended a resource for criteria for consent agenda items.
Reviews the results of the Council Meeting Feedback Surveys to make improvements and adjustments to upcoming meetings.	Council meeting feedback is reviewed by Executive Committee in setting agendas, and by Council at each meeting.
Connects with all Councillors regarding the Registrar's performance evaluation on an annual basis.	Facilitated a survey at the end of the year by all Council members to inform the discussions with the Registrar & CEO on performance.
Ensures and reviews the succession planning process for the Registrar.	No specific actions were taken in this regard.
Addresses urgent, organizational issues between Council meetings and reports back to Council on those issues.	No specific actions were taken in this regard.
Recommends policies and procedures to promote a just and respectful organizational culture through development of, review of, and compliance with Council and organization codes of conduct.	• The Council Culture Agreement was signed at the 2024 Council Retreat and a discussion on the agreement was incorporated into every Council meeting during the in-camera session. • The Council Culture Challenge Coin was introduced and developed to help increase accountability around the agreement. • Received updates and provided feedback on the Governance Review Implementation Plan.

Roles and Responsibilities (as mandated in the TOR)	Activity Report
The Executive Committee will provide formal introductions of guests and speakers at the Council Retreat or other Council gatherings/events or will assign other Council members to perform this role.	The 2024 Council Orientation and Retreat agenda was developed to give opportunities to Executive and other Council members to introduce guests.
Represents Council at external meetings, including but not limited to: • Meetings with the Alberta Medical Association (AMA) and AMA meetings where Council members are invited to attend. • Canadian Medical Association (CMA) annual Health Summit (and/or General Council) – requirement for a physician member who is able to vote. • Federation of State Medical Boards (FSMB). • Federation of Medical Regulatory Authorities of Canada (FMRAC). • Other meetings of health professions regulatory organizations (e.g. CRNA, ACP) where Council members are invited to attend.	• Quarterly meetings with AMA and Spring Rep Forum • Meeting of the Minds sessions with AMA and other healthcare partners
Follows up with individual Council members based on requests by the Governance Committee regarding the annual sign off of: Conflict of Interest Declarations, Code of Conduct Agreement, Confidentiality and Non-disclosure Agreement, and Councillor's Oath. (joint responsibility with Governance Committee)	No specific actions were taken in this regard, as there were no requirements for action brought forward by the Governance Committee.

Roles and Responsibilities (as mandated in the TOR)	Activity Report
Reviews the results of the Annual Evaluation of Council Effectiveness and informs Council of actions taken. (joint responsibility with Governance Committee)	Feedback from the survey was reviewed which informed the Council Learning Plan put forward by the Governance Committee.
Works with the Governance Committee to develop and deliver an orientation program for new members. (joint responsibility with Governance Committee)	No specific actions were taken in this regard.
Promotes ongoing professional development of Council members. (joint responsibility with Governance Committee)	Executive Committee promotes education through the in-Council learning sessions and promoting the use of the annual Council member allocation for governance/leadership/regulatory learning.

cpsa
COLLEGE OF PHYSICIANS & SURGEONS OF ALBERTA

Finance and Audit Committee

Annual Report 2024

Roles and Responsibilities	Activity Report
Approves policies concerning expenses, grants, banking, fees or any other issue affecting the financial and operational management of CPSA.	• Approved honorarium principles for fiscal year 2025. • Engaged in discussions regarding expense policies and honorarium rates for 2025. • Received an annual report on FAC compliance with CPSA's Pension Plan Governance Policy. • Received a report on CPSA's adherence to executive limitations as listed in the Governance Manual, Part 4 – Executive Limitations. • Recommended Council approve changes to the pension plan text for temporary remote workers out of Canada.
Provides recommendations to Council regarding the operating budget and annual fees.	• Reviewed an analysis of the unrestricted surplus in determining the annual fee to recommend to Council for 2025. • Recommended to Council to approve the draft 2025 business plan and budget with a reduction in the physician annual fee for 2025. • Recommended to Council to approve a change in the honorarium rates for 2024 including setting a new rate for the chair. • Recommended to Council to approve the following fees mid-year: ○ Limited Practice Register for 2025 to be 25% of physician annual fee ○ TDM Examination Fee ○ Competency Assessment Fees for the registration pilot • Approved additional unbudgeted costs in 2024 for the following: ○ Unbudgeted staffing positions for 2024.

Roles and Responsibilities	Activity Report
	○ Professional Conduct legal costs relating to investigations addressing the backlog of complaint files, a higher number of higher complaints with increased complexity ○ Software & supplies due to additional costs for unbudgeted software.
Appoints external auditors, approves the scope of an audit, recommends to Council to approve CPSA's annual audited financial statements and related documents, reports the results of the annual audit to Council, and assesses the performance of the auditors.	• Reviewed the CPSA and Pension Fund audited financial statements for the year ended December 31, 2023 with the auditors and management. • Reported the CPSA and Pension Fund audited financial statements for the year ended December 31, 2023 to Council at their May 2024 meeting for Council's approval. • Appointed PricewaterhouseCoopers LLP (PwC) as CPSA's auditors for 2024. • Accepted the audit plan from PwC for the 2024 audit.
Ensures that the Registrar has in place and follows an investment policy which does not vary materially from Prudent Investor guidelines as summarized in Council policy.	• Reviewed the CPSA investment performance from the IA and PH&N portfolios for the year ended December 31, 2023. • New benchmarks were approved in the Investment Policy. • Reviewed the pension investment managers for the defined benefit (DB) pension plan for year ended Dec 31, 2023. • Reviewed the Statement of Investment Policies and Procedures (SIPP) for the defined benefit pension assets and approved changes in the asset mix.

Roles and Responsibilities	Activity Report
	• Received an education session from Mercer, CPSA's actuary, about pension valuations, assumption setting and risk management options. • Reviewed the pension investment managers for the defined contribution (DC) pension plan as at June 30, 2024. • Annually reviewed the Statement of Investment Policies and Procedures (SIPP) for the defined contribution pension assets. No changes were made.
Provides oversight of, and reports to Council concerning, the Registrar's adherence to financial and operational policies in the areas of budgeting and forecasting, financial condition, protection of assets, investment of CPSA funds, and compensation and benefits, including the pension plan.	• Received 2024 quarterly financial variance reporting and financial forecasts. • Reviewed the quarterly financial key performance measures results. • Reviewed an annual summary of the expenses for the counselling and treatment fund under the HPA. • Reviewed the CFO's statutory filing compliance at each FAC meeting. • Reviewed a report in November on compliance with the Council policies for Executive Limitations.
Ensures that the Registrar has established a process to identify and manage risk factors relating to the financial and operational management of CPSA, including the prevention, early identification and management of error, mis-statement and fraud.	• Received 2024 quarterly CPSA Risk Register reports. • Received semi-annual reports from the internal Security Management Committee which included a year-to-date privacy breach report.
Considers and reviews, with management and the auditors, the adequacy of the organization's risk management	• No issues of fraud reported by management or PwC, the CPSA's auditors. • Received a report on Directors and Officers insurance

Roles and Responsibilities	Activity Report
methodology and internal controls, including computerized information system controls and security.	coverage from Heath Insurance Reciprocal of Canada (HIROC), CPSA's insurance provider, and was satisfied with the level of insurance coverage in place for CPSA. • Received a report from HIROC on CPSA's results of the risk assessment checklist reporting in the year 4, start year of new cycle of FIRMS (FMRAC integrated risk management system).
Considers and reviews the Safe Disclosure of Workplace Violations policy and CPSA Compliance Officer Report annually.	• Received a summary report from CPSA's Director, People & Culture on the staff policy on *Respect in the Workplace*, a new policy rolled out in 2024.
Considers and reviews the priorities and succession plan of CFO annually.	• Received an update on the CFO priorities and succession plan in November 2024.
Other activities performed but not captured by the Roles and Responsibilities listed in the Finance and Audit Committee's Terms of Reference.	• Approved the assumptions used in the pension valuation. • Annually reviewed the FAC's Terms of Reference and provided feedback to the Governance Committee on proposed changes, and recommended that Don Newell be reappointed for a second term on FAC.

This report is to be submitted annually to the Governance Committee.

Governance Committee

Draft Annual Report

This report covers the period from January 1, 2024 to December 31, 2024.

Roles and Responsibilities (as mandated in the TOR)	Activity Report
Ensures Council practices are in compliance with applicable legislation, regulations and CPSA Bylaws	No specific actions were taken in this regard, though it is a grounding principle for the work of the Committee.
Promotes good governance practices at all Council and Committee meetings.	• Governance review implementation including: ○ Discussion and development of a model, process, competency matrix and feedback opportunity for a Nominations + Elections process for regulated member Council members. ○ Implemented a procedure to support new bylaw which supported the re-appointment of a regulated Council member to a second term. ○ Reviewed and discussed the development of the Role of the Council Member resource document to increase Council member engagement. • Recommended Council resources: ○ Council Decision Terminology to build common understanding of decision terms. This is linked on the cover of every Council meeting agenda. • Recommended a revision of the process for appointing new Council members to Committees.
Recommends practices and educational opportunities to improve Council effectiveness.	Reviewed and recommended Council Learning Plan that included individual and group learning sessions
Develops themes and goals for the annual Council retreat	Recommended the "Serving Public Interest & Public Trust" theme, goals and broad Agenda for the 2025 Council Retreat.

Roles and Responsibilities (as mandated in the TOR)	Activity Report
Develops, recommends, and stewards council evaluation programs.	No specific actions were taken in this regard.
Reviews the annual submissions of the following documents from Council members and forwards any items requiring follow up action to the Executive Committee: • Conflict of Interest Declarations, • Code of Conduct Agreement, • Confidentiality and Non-disclosure Agreement • Councillor's Oath.	Documents were reviewed; no matters were forwarded to the Executive Committee for follow up.
Provides input and support for the orientation program for new members. Promotes the development and use of a reference manual for all Councillors.	• Provided input into the orientation for new Council members. • The Council Reference Manual is available on Sharepoint, and it is linked from the first page of the Council Agenda.
Facilitates the Executive Election process.	• Policy was reviewed, revised and implemented for 2024 Executive Elections, specifically facilitating a change to the eligibility rule, allowing Council members who served for less than a year on Council to be elected to the Executive Committee for 2025.
Reviews the aggregate skills and competencies of the current composition of Council to identify potential gaps in experience, skills, and expertise.	Provided input into the development of the matrix.
Reviews and make recommendations for the annual Physician Member Elections.	• Committee provided feedback on the communications plan for the 2024 Regulated Member Elections to fill 1 position on Council.

Roles and Responsibilities (as mandated in the TOR)	Activity Report
	• Recommended Council member to share their experience on Council in Messenger to boost regulated member engagement in nominations.
Brings forward recommendations for appointments or reappointments to Council Committees, including the listing of physicians to serve on Hearing Tribunals or Complaint Review Committees.	• Appointments were made to the various Committees and working groups throughout the year as required
Brings forward recommendations for appointments of Committee Chairs, based on the following principles: a. Each committee has had an open and transparent succession plan. b. All councillors have been given an opportunity to express their interest in becoming Chair. c. Committee chairs are a Council member unless extenuating circumstances exist to justify the appointment of a Chair who is not a sitting Council member. d. Chairs are appointed for 1 year only, with an opportunity to renew for up to six years.	Chair appointments were made to the various Committees and working groups throughout the year as required.
Annually confirms Committee mandates and makes recommendations for changes to the structure or mandate of Council and its committees to ensure alignment of purpose, vision and strategy.	Reviewed and approved the annual reports for standing and priority Committees.
Reviews Terms of References of other Committees in the following cases:	• Reviewed and recommended changes to the Finance and Audit Committee Terms of Reference. • Established and recommended terms of reference for the Ad Hoc Bylaw Review Committee.

Roles and Responsibilities (as mandated in the TOR)	Activity Report
• The Committee has a significant mandate change (e.g. through a Governance Review, or resolution approved by Council). • The Committee is newly established; and/or • The Committee develops a change to the TOR that varies from the Committee mandate.	• Reviewed and recommended terms of reference for the Nominations Committee
Monitors the language of bylaws, terms of reference, policies and communications for barriers which could limit diversity and inclusion on Council.	Recommended the commissioning of an ad hoc bylaw review committee to complete the review of the bylaws.
Review and recommend updates to the CPSA Bylaws to ensure alignment with other legislation, relevance to current practice and clarity.	Recommended the revision of the following bylaw changes: • Addition of certain otolaryngology (ENT) procedures, and the addition of certain general surgery procedures (bariatric) to occur in the chartered surgical facility environment.
Recommend, review, and develop Council policies in collaboration with other Committees as necessary.	• Policies reviewed and updated: ○ Council Member Care for Newborn Children at Council Meetings Policy ○ Council and Committee Conflict of Interest ○ Rewards and Recognition Policy • Policies retired in 2023 ○ Council Member Attendance at meetings of Committees to which they are not appointed Committee member as observer • New Policies in 2024 ○ Council Learning Policy
Review and report to Council on proposed amendments to the Health Professions Act and other relevant legislation.	• There were no relevant new or proposed amendments to provincial or federal legislation in 2024.

cpsa
COLLEGE OF PHYSICIANS & SURGEONS OF ALBERTA

Indigenous Advisory Circle

Annual Committee Guidance Review 2024

Purpose

The Indigenous Advisory Circle (Circle) provides advice and recommendations to CPSA Council and Team on strategies for CPSA to better support First Nations, Inuit and Métis Peoples and guide regulated members in providing culturally safe, equitable care to improve health outcomes for Indigenous Peoples in Alberta.

Over 2024, the Circle provided guidance under these roles:

Roles	Guidance Provided
Provides overarching advice to CPSA on Authentic Indigenous Connections	• CPSA should take a distinctions-based approach to engagement and communications with First Nations, Inuit and Métis Peoples. This type of approach recognizes the unique rights, histories, cultures and priorities of Indigenous Peoples, and that a one-size-fits-all approach will not work. • CPSA should avoid taking a pan-Indigenous approach to its outreach and engagement, as this type of approach incorrectly assumes Indigenous Peoples are a monolith. • Spending time in First Nations, Métis settlements and Indigenous communities across Treaty 6, 7 and 8 territories will be essential to building relationships. It's important to spend time nurturing authentic relationships, which will form the foundation of the work required to effect change. • CPSA should accept invitations to meet with First Nations, Inuit and Métis leaders and communities in-person as often as possible as this is how connections are built and a good way for CPSA to learn about the distinct Peoples it serves. • In engaging with Indigenous Peoples, it's essential to respect treaties, recognize the sovereignty of First Nations, and acknowledge self-governing rights. • Careful planning must go into CPSA's communications with First Nations, Inuit and Métis Peoples to ensure respect, appropriateness, and a clear intention for communicating.

Roles	Guidance Provided
Discusses opportunities for CPSA to act to enhance healthcare experiences for Indigenous patients and Indigenous healthcare practitioners	• CPSA's Path to Truth and Reconciliation has the potential to position CPSA as a leader and changemaker if implemented mindfully, respectfully and collaboratively. CPSA needs to be mindful of the lasting effects the Path will have and ensure it is carried out and supported in a sustainable way. • CPSA should listen to the call to action, "nothing about us without us" and apply this to its collaborative efforts with First Nations, Métis and Inuit Peoples. Indigenous Peoples must be involved in developing solutions intended to improve their healthcare experiences and health outcomes. • In light of other medical regulators (such as the CPSM and CPSBC) and the Canadian Medical Association apologizing for their roles in harms to Indigenous Peoples, CPSA should consider how an apology can demonstrate accountability and signal an intention to do better and take action. • An apology does not carry meaning and causes harm if the apologizer does not make change. Delivering an apology does not mean the work is done—it can be a signal that the work is just beginning. • A meaningful apology must speak to the person intended to receive it, and acknowledge harms still being experienced.
Share knowledge and information, experiences and stories—their own or those of their communities	• A barrier for CPSA's work is communities not knowing who CPSA is, what it does and its role in the healthcare system. CPSA should be clear on what and who they represent—many people may believe CPSA represents physicians, who represent the healthcare system, which is generally not a safe space for Indigenous Peoples. • Feedback, particularly from Elders, is a respectful gift intended to help those receiving the feedback do better. • Pacing is important when it comes to work on CPSA's Path to Truth and Reconciliation. Slowing down to make sure steps taken are intentional and walking alongside guides like members of the Circle will ensure the work is done in a good and sustainable way. • There are no quick solutions, nor are there quick results. The work on the Path is generational and will require long-term action.

Roles	Guidance Provided
Provides feedback to CPSA on specific initiatives, programs or projects	• The Circle and the Anti-Racism Anti-Discrimination Action Advisory Committee (ARADAAC) should seek opportunities for alignment and collaboration. • Towards this, the ARADAAC Chair now attends Circle meetings, and a member of the Circle has been appointed to ARADAAC

cpsa
COLLEGE OF PHYSICIANS & SURGEONS OF ALBERTA

Submission to:	**Council**

Meeting Date:	Submitted by:		
May 29, 2025	Governance Committee		
Agenda Item Title:	6.1.2 Council Retreat 2026		
Action Requested:	☐ The following items require approval by Council See below for details of the recommendation.	☒ The following item(s) are of particular interest to Choose an item. Feedback is sought on this matter.	☐ The attached is for information only. No action is required.
AGENDA ITEM DETAILS			
Recommendation:	That Council approves the proposed theme and draft agenda for the 2026 Council Retreat.		
Background:	The Governance Committee's Terms of Reference states that this Committee is responsible for developing the themes and goals for the Annual Council Retreat. Themes of past CPSA Council Retreats were: • **2021:** Council Culture: Work Together + Learn Together = Govern Effectively Together • **2022:** Work Together + Learn Together = Govern Effectively Together • **2023:** The Future of Healthcare + Good Governance/High-performing Council • **2024:** Authentic Indigenous Connections • **2025:** Serving the Public Interest and Public Trust The Governance Committee recognizes the role of Council in setting the organisation's strategic direction and recommends a focus on strategic planning for the upcoming Retreat on the following basis: • The 2022 – 2026 Strategic Plan will be due for review. • A new Registrar & CEO will be in place. • Council has experienced and will experience a turnover of members. To wit, as of January 2026, 11 of Council's 14 voting members will be new within the last 16 months, deepening the importance of grounding new members in the current and future strategic plan. • Discussions around the strategic plan are timely and topical, given the situational context CPSA finds itself in.		

	The Committee acknowledges the growing influence of artificial intelligence in medicine and intends to dedicate the second day of the Retreat to a strategic discussion on Council's role in this evolving landscape. Therefore, the proposed theme of the Retreat will be dedicated to supporting Strategic Planning and deepening Council's understanding of impacts and applications of Artificial Intelligence.
Next Steps:	Using Council direction, the CPSA Team will plan the Retreat in more detail, and ensure the plan is implemented.
List of Attachments:	
1. Draft 2026 Retreat Agenda 2. Current Strategic Plan	

cpsa
COLLEGE OF PHYSICIANS & SURGEONS OF ALBERTA

DRAFT COUNCIL RETREAT 2026

Draft Theme: Strategic Planning and Artificial Intelligence

Agenda – Day 1 - Council Orientation Day (Full Day) January 22, 2026

Agenda – Day 2 – Reflecting on the Past & Looking to the Future January 23, 2026	
08:00	**Breakfast**
08:45	**Welcome, Introductions and Overview of Retreat Goals** Facilitated by Council Chair
09:00	**Traditional Territorial Acknowledgements** Facilitated by a Council Member
09:15	**Team Building Activity** • Interactive exercise to build trust and strengthen relationships among new Registrar & CEO, new and existing Council members and CPSA team • Incorporation of the Council Culture Agreement Facilitated by: TBD
10:15	**Break**
10:30	**In-Depth Review of the 2022-2026 Strategic Plan (Part 1)** Facilitated group discussion on the accomplishments, challenges faced, missed opportunities and lessons learned Facilitated by: External third party (TBD)
12:00	**Lunch**
1:00	**Workshop to Identify Key Themes** • Group session to discuss common themes from the in-depth review • Brainstorm focus areas for future strategic direction Facilitated by: External third party (TBD)
2:30	**Break**
2:45	**Vision Setting Workshop** Facilitated group session to identify emerging trends and opportunities and define overarching goals for 2027 – 2032 Facilitated by: External third party (TBD)

3:45	**Strategic Directions Brainstorming** Facilitated group session to discuss refining existing strategic directions and/or development of new strategic directions Facilitated by: External third party (TBD)
4:15	**Adjournment & End of Day Remarks** Facilitated by Council Chair
6:30	**Group Dinner**

Agenda – Day 3 – Artificial Intelligence January 24, 2026	
08:30	**Breakfast**
09:00	**Welcome and Recap of Day 1** Facilitated by: Council Chair
09:15	**Drafting the 2027 – 2032 Strategic Plan Framework** • Facilitated group session on a proposed framework for the new plan • Discussion of takeaways and next steps for a Strategic Plan Ad Hoc Committee Facilitated by: External third party (TBD)
10:45	**Break**
11:00	**Artificial Intelligence Discussion** • The Future of Medical Regulation with Artificial Intelligence • The Future of Medicine and Artificial Intelligence Facilitated by: External third party (TBD)
12:30	**Lunch**
1:30	**Artificial Intelligence Discussion (continued)** • How does Council prepare for the future in the face of artificial intelligence? • Threats and Opportunities for Artificial Intelligence Facilitated by: External third party (TBD)
3:00	**Closing Remarks** Facilitated by Council Chair
	To-go meal provided

Submission to:	**Council**

Meeting Date:	Submitted by:		
May 29, 2025	Governance Committee		
Agenda Item Title:	6.1.3 Bylaw Revisions – Accreditation		
Action Requested:	☒ The following items require approval by Council. See below for details of the recommendation.	☐ The following item(s) are of particular interest to Choose an item. Feedback is sought on this matter.	☐ The attached is for information only. No action is required.
AGENDA ITEM DETAILS			
Recommendation:	The Governance Committee recommends that Council approves amendments brought forward by the Medical Facility Accreditation Committee to the Prescribed Health Services list in CPSA's Bylaws whereby: • Bone biopsy for adults is removed from the list, and • Fat Grafting, Kyphoplasty and Rigid Endoscopic Brow Lifting are added to the list.		
Background:	**Prescribed Health Services** A "prescribed health service" is a type of medical procedure that is not suitable to be performed in a physician's general office (e.g., medical clinic) because of risks associated with the procedure. Procedures that carry elevated levels of risk need to take place in facilities with a higher level of oversight. At minimum, a prescribed health service must occur in a CPSA Accredited location, such as a non-hospital surgical facility (NHSF), or provincially chartered facility. **CPSA's Mandate** CPSA is given the authority in Section 8(g) of Schedule 21 of the *Health Professions Act* to maintain a list of prescribed health services in its bylaws. There are several dozen prescribed health services listed in CPSA bylaws. Most prescribed health services currently listed in CPSA bylaws were added in the 1990s to coincide with the onset of non-hospital surgical facility accreditation by CPSA. **Council's Role** From time to time, MFAC will recommend to Council that a procedure(s) be added or removed from the list of prescribed		

	health services. Reasons for amending the list can vary (e.g., introduction of safer modalities, emerging novel procedures, etc.) and decisions are brought forward after considerate expert analysis of risk and patient safety. Adding or removing a service from the list has a resulting impact on the location which the procedure can occur, the level of oversight of the procedure and the ability for a patient to access the service. These impacts are also contemplated in MFAC's analysis and recommendations.
Next Steps:	If approved by Council, the revisions to the Prescribed Health Services list will be incorporated into Part 5 of CPSA bylaws which will then be posted on the CPSA website. The changes will also be communicated to relevant stakeholders by Accreditation and CPSA Communications.
List of Attachments:	
1. Removal of Bone Biopsy for Adults 2. Addition of Fat Grafting 3. Addition of Rigid Endoscopic Brow Lifting 4. Addition of Kyphoplasty 5. Table: Prescribed Health Services in relation of Major and Minor surgical services/procedures	

COLLEGE OF PHYSICIANS
& SURGEONS OF ALBERTA

Attachment 1 – Bone Biopsy for Adults

Decision Requested

Removal of Bone Biopsy for adults from the list of Prescribed Health Services

Proposed Bylaw Revision

The changes required to CPSA Bylaws Prescribed Health Services are as follows:

Part 5, Section A.50.5N.vii.5e Plastic

Others

(e) bone – biopsies (for patients aged 17 or younger), fusions, removal of hardware, excision of exostoses, amputations of digits or rays, open and closed reduction of hand fractures,

Background

A bone biopsy is a medical procedure where a small piece of bone tissue is removed for further examination and analysis. This can help to determine bone health and diagnose conditions like bone infections, cancer, or unexplained bone pain. The procedure involves a small needed and is minimally invasive.

A CPSA regulated member noted that bone biopsy is presently listed as a Prescribed Health Service in CPSA's bylaws. The member had interest in performing this procedure in their clinic, but legally cannot at present. Procedures listed as Prescribed Health Services in CPSA Bylaws cannot be offered in a medical.

The member's formal request and supporting evidence were reviewed by the NHSF Advisory Committee in fall 2024. The Advisory Committee, informed by members with general surgery, infection prevention & control, and other surgical expertise unanimously supported the revision request. The Advisory Committee's recommendation was brought forward for Medical Facility Accreditation Committee (MFAC) consideration January 2025. MFAC recommended the removal of bone biopsy from the list of prescribed health services from CPSA Bylaws.

The Governance Committee reviewed MFAC's recommendation on April 17, 2025. Concern was expressed that children may find the procedure more traumatic than adults and that this trauma could require the use of general anesthesia. General anesthesia cannot be offered in a medical clinic or physician's office. The Governance Committee therefore supported the recommendation that bone biopsy be removed from the list of Prescribed Health Services, but for adult patients only at this time. MFAC has been asked to specifically consider whether this change should also apply to children (i.e., those under the age of 18).

Impact

Removing the service from the list of prescribed health services will increase patient access to the procedure without undue impact on patient safety. Instead of having to obtain the service in a CPSA Accredited facility, adult patients will now be able to access this procedure within a physician's general office (e.g., medical clinic). This change does not impact how the procedures are covered for the patient (i.e., publicly insured or privately paid).

COLLEGE OF PHYSICIANS
& SURGEONS OF ALBERTA

Attachment 2 – Fat Grafting

Decision Requested

Addition of Fat Grafting to the list of Prescribed Health Services

Proposed Bylaw Revision

The changes required to CPSA Bylaws Prescribed Health Services are as follows:

Part 5, Section A, 50.5.iv.2:

Eyelid procedures requiring implants or dissection of the orbital septum or beyond including:

(a) rigid endoscopic brow lift
(b) fat grafting

Background

Fat grafting in the ophthalmology surgical environment is a procedure required for restoring volume and addressing age-related changes or trauma-related issues in the eye socket area, such as sunken eyelids, tear trough deformities, assist with prosthetic placement and other conditions that can obstruct vision.

This procedure is currently only accessible to Albertans in the hospital day-surgery setting. However, since 2022, the Alberta Surgical Initiative (ASI) program has identified hospital procedures that can be safely relocated to the out of hospital environment. For ophthalmology, fat grafting has been identified as one of those surgical procedures. Further, Alberta Health's ophthalmology surgical contract includes services that require fat grafting. As a result, a CPSA regulated member brought this to CPSA's attention and submitted a formal request for review.

The CPSA member's formal request and supporting evidence were reviewed by the NHSF Advisory Committee whose membership includes Albertan anesthesia, plastic surgery and ophthalmology specialists. The NHSF Advisory Committee was unanimous in recommending that fat grafting be brought forward to the Medical Facility Accreditation Committee (MFAC) for consideration as a Prescribed Health Service. MFAC further evaluated the formal request along with the Advisory Committee's findings and is recommending the addition of this procedure to the list of Prescribed Health Services in CPSA Bylaws.

Impact

For ophthalmology, adding fat grafting to the list of Prescribed Health Services will assist in reducing the surgical wait times as the procedure can now occur in locations beyond day-surgery settings. Increasing patient access to the procedure does not negatively impact patient safety as facilities continue to have a high level of oversight. This change does not impact how the procedures are covered for the patient (i.e., publicly insured or privately paid).

COLLEGE OF PHYSICIANS & SURGEONS OF ALBERTA

Attachment 3 – Rigid Endoscopic Brow Lift

Decision Requested

Addition of Rigid Endoscopic Brow Lift to the list of Prescribed Health Services

Proposed Bylaw Revision

The changes required to CPSA Bylaws Prescribed Health Services are as follows:

Part 5, Section A, 50.5.iv.2:

(2) Eyelid procedures requiring implants or dissection of the orbital septum or beyond including:
  (a) rigid endoscopic brow lift
  (b) fat grafting

Background

Rigid endoscopic brow lift is a surgical procedure that separates and lifts the skin surrounding the eyebrows. This allows for the repositing of the skin that is causing the obstruction to the visual field.

Alberta Health's ophthalmology surgical contract includes services that require rigid endoscopic brow lift; however the procedure is not currently listed as a Prescribed Health Service. This means it cannot be offered in a CPSA accredited facility such as a non-hospital surgical facility.

A CPSA regulated member brought this to CPSA's attention and submitted a formal request for review. The request and supporting evidence were reviewed by the NHSF Advisory Committee whose membership includes anesthesia, plastic surgery and ophthalmology specialists. The NHSF Advisory Committee was unanimous in recommending that rigid endoscopic brow lift be brought forward to the Medical Facility Accreditation Committee (MFAC) for consideration as a Prescribed Health Service. MFAC further evaluated the request along with the Advisory Committee's findings and is recommending the addition of this procedure to the list of Prescribed Health Services in CPSA Bylaws.

Impact

For ophthalmology, adding rigid endoscopic brow lift to the list of Prescribed Health Services will assist in reducing the surgical wait times because it would enable the procedure to be offered in more locations. Increasing patient access to the procedure does not negatively impact patient safety as the facilities continue to have a high level of oversight. This change does not impact how the procedures are covered for the patient (i.e., publicly insured or privately paid).

Decision Requested

Addition of Kyphoplasty to the list of Prescribed Health Services

Proposed Bylaw Revision

The changes required to CPSA Bylaws Prescribed Health Services are as follows:

Part 5, Section A, 50.5.v.14:

14) Others

(a) single level lumbar discectomy and/or decompression – uncomplicated,

(b) procedures listed under podiatric surgery,

(c) removal of hardware including plates, pins, screws, nails and wires,

(d) peripheral nerve surgery – repairs, decompression or grafts

(e) saucerization,

(f) sequestrectomy,

(g) joint manipulation under general anesthesia or intravenous sedation,

(h) harvesting of bone graft,

(i) microdiscectomy,

(j) minimally invasive lateral recess and central decompression – 3 levels or less,

(k) minimally invasive lumbar foraminotomy (with or without central stenosis),

(l) posterior minimally invasive foraminotomy (or laminoforaminotomy),

(m) posterior minimally invasive laminotomy for decompression of focal cervical canal stenosis – 2 levels or less,

(n) kyphoplasty.

Background

Kyphoplasty ("K-eye-Fo-Plast-ee") is a minimally invasive surgical procedure to treat compression fractures in the spine. Compression fractures are tiny breaks in the vertebrae (the bones that make up the spine). These fractures can pinch nerves and/or disrupt soft tissue around the spine, causing pain and instability. A kyphoplasty assists in stabilizing the structural integrity of the vertebra and realignment of the spine. The surgical procedure involves the insertion of an extendable balloon or a titanium implant, followed by the injection of bone cement to fix the fracture(s).

Traditionally, the surgery was for older patients with osteoporosis or individuals with spinal tumors. Kyphoplasty has become common in the USA since 2000 and first occurred in Canada in 2004 (in Ontario). With the aging population's increased longevity, this procedure is increasingly looked to in addressing associated chronic pain as a means to lessen debilitation. As the need for specialized pain treatment services increases in Alberta, kyphoplasty is being increasingly sought after due to it being minimally invasive and ability to be performed in the ambulatory (i.e., outpatient) environment.

In Alberta, this surgical procedure presently occurs in the hospital day-surgery settings only. Since kyphoplasty is not currently a Prescribed Health Service, it cannot be offered in a CPSA accredited facility such as a non-hospital surgical facility. As a result, access to this surgery is very limited for those requiring it.

A CPSA regulated member requested that this surgical procedure be added as a Prescribed Health Service. The CPSA member's formal request and supporting evidence were reviewed by the NHSF Advisory Committee whose membership includes anesthesia and orthopedic specialists. The NHSF Advisory Committee was unanimous in recommending that kyphoplasty be brought forward to the Medical Facility Accreditation Committee (MFAC) for consideration as Prescribed Health Service. MFAC further evaluated the formal request along with the Advisory Committee's findings and is recommending the addition of this procedure to the list of Prescribed Health Services in CPSA Bylaws.

Impact

The addition of kyphoplasty to the list of Prescribed Health Services will increase access for patients because it would enable the procedure to be offered in more locations. Increasing patient access to the procedure does not negatively impact patient safety as the facilities continue to have a high level of oversight. This change does not impact how the procedures are covered for the patient (i.e., publicly insured or privately paid).

cpsa
COLLEGE OF PHYSICIANS & SURGEONS OF ALBERTA

Attachment 5: Table

Background
This table offers a description of Prescribed Health Services in relation to Major and Minor surgical services/procedures.

Type of Service	Risks associated with Service	Public Accessibility of Service / Level of Oversight	Where can service be offered
"Major Surgical Service" Described in Health Facilities Act (HFA)	Highest risk level *Risk can be inherent to the procedure, or by reason of the pre-operative condition of the patient.*	Least accessible / Most oversight *Limited to the number of available hospitals*	Hospital only
"Prescribed Health Service" Described in HPA [Sec 8(g) of Schedule 21] and CPSA Bylaws	High risk *Procedures are complex, complications can arise. High level oversight still required.*	Moderately more accessible / High level of oversight *Higher number of facilities available.*	Hospitals, Chartered facilities, CPSA Accredited facility (e.g., NHSF)
"Minor surgical procedure" Described in HPA, HFA, CPSA Bylaws	Lowest level of risk *Can be performed by most/all physicians.*	Most accessible / Lowest level of oversight *Limited only by physician availability*.	Physician's general office, Medical Clinics

cpsa
COLLEGE OF PHYSICIANS & SURGEONS OF ALBERTA

Submission to:	**Council**

Meeting Date:	Submitted by:		
May 29, 2025	Patrick Etokudo, FAC Chair		
Agenda Item Title:	6.2.2 Waiving Fees		
Action Requested:	☒ The following items require approval by Council See below for details of the recommendation.	☐ The following item(s) are of particular interest to Choose an item. Feedback is sought on this matter.	☐ The attached is for information only. No action is required.
AGENDA ITEM DETAILS			
Recommendation (if applicable) :	**That Council approves to waive the fees for physicians completing their residency or fellowship in Alberta between July 1, 2025 to June 30, 2027.** **a) Waive registration fee of $800** **b) Waive first annual fee of $2,000**		
Background:	CPSA leadership has been developing strategies to support the attraction and retention of physicians in Alberta. Recent emphasis has been making the process more efficient for internationally trained physicians (IMGs) with the Accelerated Jurisdiction Route and the expanded sponsorship model. This new proposal is focused on retaining Alberta medical graduates. **Proposal** For physicians who have completed their residency or fellowship in Alberta between July 1, 2025, to June 30, 2027: 1) Waive registration fee of $800 2) Waive first annual fee of $2,000 This financial incentive is proposed to start in July 2025. As the budget for 2026 is being prepared this approach to waive fees would be incorporated to continue to June 30, 2027 This two-year period would allow CPSA's REVU (research & evaluation unit) to study the reason residents/fellows stay in Alberta and the impact of the		

number of postgraduates completing their residency or fellowship in Alberta are retained in the province.

An overview of the CPSA Fee Adjustment Proposal is included as Dossier 6.2.2.1.

Financial impact

The number of physicians completing their post-graduate or fellowship training in June 2025 and moving to independent practice in Alberta is unknown.

The historical number of Alberta graduates completing their post-graduate training (PGT) and moving to independent practice is

PGT End Year	AB Total
2020	3
2021	5
2022	13
2023	45
2024	199

# Physicians	Registration Fee	Annual fee	Total Fees Waived
100	$800	$2000	$280,000
200	$800	$2000	$560,000
300	$800	$2000	$840,000
400	$800	$2000	$1,120,000

The annual financial impact to CPSA for postgraduate trainees and fellowship could range from 100 – 400 individuals impacting a reduction in revenue between $280,000 to $1,120,000.

CPSA currently has a higher than planned unrestricted surplus. At the end of December 2024, that unrestricted surplus amounts to $52M which is 105% of the 2025 budgeted total expenses.

CPSA's current policy on reserves targets the unrestricted surplus at 60% of one year's gross operating expenses. The target level is $29.8M, which results in an extra surplus of $22M.

	CPSA has the financial capacity to waive the registration fee and the annual fee for their first year on the general register for 2025, 2026 and 2027, in support of retaining Alberta medical graduates.
Next Steps:	1) Communication would be drafted and circulated to physicians and residents. 2) For 2025, those physicians completing their postgraduate training on June 30 and transitioning to independent practice would have their fees refunded in 2025 if they have already registered with CPSA. 3) The 2026 budget would be drafted incorporating the waiving of registration and annual fees. The 2026 budget proposal will be presented to Council in September 2025.
List of Attachments:	
6.2.2.1 CPSA Fee Adjustment Proposal	

cpsa
COLLEGE OF PHYSICIANS
& SURGEONS OF ALBERTA

CPSA Fee Adjustment Proposal

Last revised: MAY 2025

OBJECTIVE

To bolster physician resources in the province and support a return on the investment Alberta has made in the training of physicians.

PROPOSAL

For physicians graduating from a postgraduate training program in Alberta (residency or fellowship) from July 1, 2025 to June 30, 2027:

1) Waive registration fee of $800
2) Waive first annual fee of $2,000
    - Those who have already completed the PGT RIF/payment will receive a refund by December 31, 2025.

KEY MESSAGES

- CPSA has anecdotally heard that there's been a decline in Alberta medical graduates remaining in the province to begin their practice.
- CPSA recognizes the significant investment Alberta has made in training these physicians. This initiative is intended to help retain that investment.
- For physicians, this initiative is a way of increasing the appeal of staying in Alberta.
- CPSA has put a significant amount of time into making the process more efficient for IMGs where applicable, including the Accelerated Jurisdiction Route and expanded sponsorship model. This initiative is intended to bolster the retention of Alberta medical graduates.

AUDIENCES

- Minister of Health
- Government/MLAs
- Alberta medical graduates
- University medical programs
- Media

cpsa
COLLEGE OF PHYSICIANS & SURGEONS OF ALBERTA

Submission to:	**Council**

Meeting Date:	Submitted by:		
May 29, 2025	Patrick Etokudo, FAC Chair		
Agenda Item Title:	6.2.3 Timing of the Annual Renewal		
Action Requested:	☒ The following items require approval by Council See below for details of the recommendation.	☐ The following item(s) are of particular interest to Choose an item. Feedback is sought on this matter.	☐ The attached is for information only. No action is required.

AGENDA ITEM DETAILS	
Recommendation (if applicable) :	**That Council approves a renewal date of January 31 for the annual renewal process for physicians, physician assistants and processional corporations.** **January 31, 2028 is the first renewal date under the new cycle.**
Background:	Physicians, physician assistants and professional corporations in Alberta are required to renew their practice permits with CPSA annually. This consists of completion of a renewal information form (RIF) or a professional corporation renewal information form (PCIF) and payment of their annual fees by the December 31st deadline. Management has reviewed the options of changing the annual fee renewal deadline for physicians, physician assistants and professional corporations to address the concerns of the renewal deadline over the holiday office closure in December. **Frustrations with December 31 include:** • Physicians are busy over the December holiday time period and forget to complete their renewal • CPSA does not have staff available to assist physicians if they have issues while completing the RIF due to the holiday closure (CPSA office is closed between Dec 25 -Jan 1) • Call and email volumes upon return from holiday closure indicate that some physicians need help in the lead up to the due date

cpsa
COLLEGE OF PHYSICIANS
& SURGEONS OF ALBERTA

Revised renewal date
After considering feedback from physicians during the renewal period and canvassing workloads in departments, a **January 31st** renewal date has been selected.

Transition period
After canvassing the workload within departments to implement the change including programming, new reporting, and communications, the **2027 annual renewal** will be a transition billing cycle.

The transition period from a December 31st to January 31st deadline would be as follows:

2027 renewal

Soft launch: Mid-Oct 2026 (no change)
Launch: Nov 1, 2026 (no change)
Deadline: Dec 31, 2026 (no change)
Billing cycle: 13 months (Jan 1, 2027, to Jan 31, 2028)
Accounting impact: fee revenues allocated over 13 months

2028 renewal

Soft launch: Mid-November 2027
Launch: Dec 1, 2027
Deadline: Jan 31, 2028
Billing cycle: 12 months (Feb 1, 2028, to Jan 31, 2029)

Budget impact
For the transition period for the 2027 renewal, the annual fee would be collected for a 13-month period. This will impact the 2027 and 2028 fiscal years.

The first cycle under the new renewal period would be the 2028 renewal with a deadline date of January 31, 2028.

The Finance & Audit committee is in support of management's recommendation to change the annual renewal date.

Next Steps:	1) Bylaw team to develop changes to the bylaws for Council approval. 2) Management to incorporate the transition period for the 2027 renewal in the 2027 budget during the normal budgeting cycle. 3) The draft 2027 budget would be brought to Council in Sept 2026. 4) The pre-authorized payment (PAP) deadline dates for annual renewal payments will be updated for the 2028 renewal.
List of Attachments:	
NA	

cpsa
COLLEGE OF PHYSICIANS & SURGEONS OF ALBERTA

Submission to:	**Council**

Meeting Date:	Submitted by:		
May 29, 2025	Executive Committee		
Agenda Item Title:	6.3 Governance Review Implementation Plan - Public Interest		
Action Requested:	☒ The following items require approval by Council. See below for details of the recommendation.	☐ The following item(s) are of particular interest to Choose an item. Feedback is sought on this matter.	☐ The attached is for information only. No action is required.
AGENDA ITEM DETAILS			
Recommendation (if applicable):	That Council, in an effort to ensure the public interest is considered and documented in its decision making, discusses proposed revisions to the cover report and approves the changes it would like to see made (if any).		
Background:	The 2022 Governance Review recommended that Council anchor all decisions in the public interest. Related, Council was called to attempt to define, to the best of its ability, what constitutes the "public interest". This definition would then prompt a revision to Council's cover report to ensure decisions remain aligned with the public interest. In 2023, an initial exercise to explore a definition of "public interest" was undertaken. At the January 2025 Council Retreat, Council members engaged further on this matter and ultimately determined that providing a clear and concise definition was impractical and unattainable. Instead, the conclusion reached was that adherence to the mandate outlined in the *Health Professions Act* and alignment with CPSA's strategic plan would inherently ensure that Council operates in the public's best interest. During the February 2025 Executive Committee meeting, further discussions addressed whether revising the Council cover report was still necessary given the absence of a defined public interest. The Committee recommended conducting a jurisdictional scan to examine how other medical regulatory authorities incorporate the public interest into their Council materials. **Jurisdictional Scan** The jurisdictional scan revealed variations in how medical regulatory authorities incorporate public interest into their Council materials.		

- The College of Physicians and Surgeons of Ontario explicitly includes a section in their cover reports titled "Purpose, Public Interest Mandate and Relevance to the Strategic Plan," linking agenda items to their public interest mandate.
- The College of Physicians and Surgeons of Manitoba indirectly addresses public interest in briefing notes and opens agenda packages with an excerpt highlighting their public interest mandate from the HPA.
- The College of Physicians and Surgeons of British Columbia does not have a formal section addressing public interest, with references mainly tied to public affairs or external communications.
- Regulatory bodies in New Brunswick, Newfoundland & Labrador, Saskatchewan, and Nova Scotia were excluded from the review due to unavailable dossier items.

Discussions with the Executive Committee

During the April Executive Committee meeting, there was deliberation about what a revised cover report could look like, wherein the following sections were recommended:

- **Public Interest Considerations**: CPSA staff would outline how public interest considerations were factored into the preparation of an agenda item.
- **Strategic Directions**: The agenda item's alignment with the most relevant strategic direction(s) would be explicitly identified.
- **Anti-Racism & Anti-Discrimination Lens**: A concise summary of how equity, racism and discrimination were considered during the development of the agenda item would be provided.
- **CPSA Mission**: The organization's mission would be consistently displayed on the cover report, serving as a guiding focus for Council deliberations.

Implications of a Section on Public Interest Considerations

As Council considers incorporating a section in the cover report dedicated to public interest, it is important to distinguish that CPSA staff would make their best efforts to outline relevant considerations. However, this is with an understanding that it is ultimately Council's role to deliberate and determine if the interest of the public was adequately considered.

The Chair would facilitate these discussions by framing key questions around the impact or implications of decisions on sub-

groups within the wider Albertan population, where relevant. Council members could then express whether they are satisfied with the provided analysis or to contribute their own perspectives.

While it is important not to constrain Council's discussions on public interest, the goal is to ensure that high impact and high-risk agenda items include public interest considerations that remain central to deliberations. Therefore, a flexible approach could also be adopted to differentiate levels of deliberation required. For example, matters such as revisions to bylaws and standards, budget approvals, or other critical topics identified by the Executive Committee would warrant more extensive public interest discussions. In contrast, routine governance matters, such as committee appointments or terms of reference revisions, may not require the same level of examination.

In instances where impacts on patients or a subset of Albertans is not easily identifiable, outlining how an agenda item aligns with key regulatory instruments like the Health Professions Act and CPSA Bylaws can also act as a way to show Council is considering the public interest.

Implications of a Section on Strategic Directions

The aim in adding this section would help ensure that, wherever possible, agenda items presented to Council support the organization's progress toward its strategic goals.

Implications of a Section on the application of an Anti-racism Anti-discrimination Lens

One of CPSA's strategic directions includes taking intentional, ongoing steps toward becoming an anti-racism and anti-discrimination organization. To support this goal, it is recommended that agenda items be reviewed with equity, racism and discrimination in mind. Drawing inspiration from organizations like the City of Ottawa, CPSA can enhance its decision-making process to ensure that decisions thoughtfully consider individuals and communities that have historically been underrepresented or excluded.

Other Implications

Revising the current template is likely impact how Council holds discussions and makes decisions. For a time, there may be instances of delayed decision-making or a need for extended agenda time for longer discussions.

	These changes would also challenge CPSA team members to articulate these concepts prior to bringing decisions to Council. Council's patience in allowing team members to strengthen their capacity would be needed. **For Council's Consideration** The Executive Committee has drafted three potential options for a new cover report and asks for Council's deliberation and approval.
Next Steps:	If Council approves any of the proposed options or a revised version after discussion, the change will be communicated to team members, and future Council reports will use the new template. If Council opts to keep the current template, cover reports will continue in their existing format.
List of Attachments:	
1. Draft Revised Cover Report – Option 1 2. Draft Revised Cover Report – Option 2 3. Draft Revised Cover Report – Option 3 4. Draft Revised Cover Report – Option 4 (Status Quo)	

COLLEGE OF PHYSICIANS
& SURGEONS OF ALBERTA

Option 1
Addition of strategic directions and public interest implications

Meeting Date: Click or tap to enter a date.
Submission to: Choose an item.
Submitted by: Click or tap here to enter text.

Agenda Item Title: Click or tap here to enter text.

Action Requested
☐ For approval by Choose an item.
☐ For discussion.
☐ For information only. No action is required.

Strategic Alignment

Strategic Direction: (Choose the strategic direction(s) that this agenda item supports. Select all relevant options.)

- ☐ Highest Quality, Ethical and Compassionate Care
- ☐ Authentic Indigenous Connections
- ☐ Proactive and Innovative Approach
- ☐ Anti Racism & Anti Discrimination
- ☐ Enhanced Partnerships

Agenda Item Details

Recommendation *(Necessary for all "For Approval" reports)*

Background

Alignment with CPSA's Mandate to Protect the Public:
(Necessary for all "For Approval" reports. Alignment can be shown by (1) explaining the impacts on Albertans (as well as CPSA and regulated members if applicable) and/or (2) describing how this agenda item follows relevant laws and governance rules, such as bylaws and policies, to help protect the public.

Option 1
Addition of strategic directions and public interest implications

Next Steps (Describe the actions to be taken if this is approved or discussed.)

List of Attachments

1.

Appendix
Tables & Figures

COLLEGE OF PHYSICIANS
& SURGEONS OF ALBERTA

Option 2
Addition of strategic directions, public interest implications and CPSA mission

Meeting Date: Click or tap to enter a date.
Submission to: Choose an item.
Submitted by: Click or tap here to enter text.

Agenda Item Title: Click or tap here to enter text.

Action Requested
☐ For approval by Choose an item.
☐ For discussion.
☐ For information only. No action is required.

Strategic Alignment

CPSA Mission: To serve and protect all Albertans, contributing to their health and wellness by supporting and guiding regulated members to proudly provide safe, high-quality care, together with healthcare partners and patients.
Strategic Direction: (Choose the strategic direction(s) that this agenda item supports. Select all relevant options.) ☐ Highest Quality, Ethical and Compassionate Care ☐ Authentic Indigenous Connections ☐ Proactive and Innovative Approach ☐ Anti Racism & Anti Discrimination ☐ Enhanced Partnerships

Agenda Item Details

Recommendation *(Necessary for all "For Approval" reports)*

Background

Option 2

Addition of strategic directions, public interest implications and CPSA mission

Alignment with CPSA's Mandate to Protect the Public:

(Necessary for all "For Approval" reports. Alignment can be shown by (1) explaining the impacts on Albertans (as well as CPSA and regulated members if applicable) and/or (2) describing how this agenda item follows relevant laws and governance rules, such as bylaws and policies, to help protect the public.

Next Steps (Describe the actions to be taken if this is approved or discussed.)

List of Attachments

1.

Appendix

Tables & Figures

COLLEGE OF PHYSICIANS & SURGEONS OF ALBERTA

Option 3
Addition of strategic directions, public interest implications, CPSA mission and Racism/Discrimination/Equity lens

Meeting Date: Click or tap to enter a date.
Submission to: Choose an item.
Submitted by: Click or tap here to enter text.

Agenda Item Title: Click or tap here to enter text.

Action Requested
☐ For approval by Choose an item.
☐ For discussion.
☐ For information only. No action is required.

Strategic Alignment

CPSA Mission: To serve and protect all Albertans, contributing to their health and wellness by supporting and guiding regulated members to proudly provide safe, high-quality care, together with healthcare partners and patients.
Strategic Direction: (Choose the strategic direction(s) that this agenda item supports. Select all relevant options.) ☐ Highest Quality, Ethical and Compassionate Care ☐ Authentic Indigenous Connections ☐ Proactive and Innovative Approach ☐ Anti Racism & Anti Discrimination ☐ Enhanced Partnerships

Agenda Item Details

Recommendation *(Necessary for all "For Approval" reports)*

Background

Option 3

Addition of strategic directions, public interest implications, CPSA mission and Racism/Discrimination/Equity lens

Alignment with CPSA's Mandate to Protect the Public:

(Necessary for all "For Approval" reports. Alignment can be shown by (1) explaining the impacts on Albertans (as well as CPSA and regulated members if applicable) and/or (2) describing how this agenda item follows relevant laws and governance rules, such as bylaws and policies, to help protect the public.

Anti-Racism, Anti-Discrimination and Equity Considerations

(Describe considerations of potential impacts of equity, racism and discrimination to underserved populations. Highlight any potential effects on different groups and how it supports fairness and representation.)

Next Steps (Describe the actions to be taken if this is approved or discussed.)

List of Attachments

1.

Appendix

Tables & Figures

COLLEGE OF PHYSICIANS & SURGEONS OF ALBERTA

Option 4
Existing Cover Report (Status Quo)

Submission to:	Choose an item.

Meeting Date:	Submitted by:		
Agenda Item Title:			
Action Requested:	☐ The following items require approval by Choose an item. See below for details of the recommendation.	☐ The following item(s) are of particular interest to Choose an item. Feedback is sought on this matter.	☐ The attached is for information only. No action is required.
AGENDA ITEM DETAILS			
Recommendation (if applicable) :			
Background:			
Next Steps:			
List of Attachments:			
1.			

COLLEGE OF PHYSICIANS & SURGEONS OF ALBERTA

Submission to:	**Council**

Meeting Date:	Submitted by:		
May 29, 2025	Daisy Fung		
Agenda Item Title:	6.4 Anti-Racism Anti-Discrimination Action Advisory Committee (ARADAAC) Update		
Action Requested:	☐ The following items require approval by Choose an item. See below for details of the recommendation.	☐ The following item(s) are of particular interest to Choose an item. Feedback is sought on this matter.	☒ The attached is for information only. No action is required.

AGENDA ITEM DETAILS

Background:

The Anti-Racism Anti-Discrimination Action Advisory Committee (ARADAAC) is a Priority Committee of Council. Addressing medical racism and discrimination aligns with CPSA's mandate, mission and 2022-26 Strategic Plan.

Familiarizing Council with the origins and work of ARADAAC

Newer Council members may not be familiar with the history and ongoing work of ARADAAC. As part of the Committee's efforts to enhance onboarding and orientation of new Committee members, a Narrative History of ARADAAC resource was created (Attachment 1). This narrative will be updated as ARADAAC's work continues and evolves. Councillors are invited to review it and the Committee is happy to offer any clarification or insights needed.

Recent meetings

Since our last update, ARADAAC has met on three occasions.

- March 11 for a one-hour virtual meeting
- April 14 and 15 for a two-day, in-person session on at Grey Eagle Resort on Tsuut'ina Nation, just south of Calgary.
- May 6 for a one-hour virtual meeting

Two day, in-person meeting (April 14-15, 2025)

This was ARADAAC's first in-person meeting since the Committee was struck in 2021. The objectives of the meeting were to review and prioritize the recommendations from the Climate Assessment Report provided by Erin Davis, while also allowing for connection and team building among Committee members. Erin Davis' report summarizes what was heard during in-person and virtual interviews with ARADAAC members throughout the fall of 2024. At that time, Committee members were asked to assess the current state of ARADAAC and identify strengths, challenges, and opportunities.

The meeting began with a recounting of the origins of the Committee from CPSA Registrar Dr. Scott McLeod and Committee co-founder Dr. Kannin Osei-Tutu. Michael Neth and Jason MacDonald then provided an onboarding orientation to ARADAAC members describing how the Committee fits within CPSA's mandate and Strategic Plan.

Erin Davis walked the Committee through the recommendations within her Climate Assessment Report, sparking rich discussion. Rozmin Punjani, Program Manager CQI with CPSA, then led the group in a liberating structure exercise to help the Committee prioritize the recommendations. Each recommendation was evaluated through an "Effort-Impact Matrix", which categorizes recommendations based on the effort required, and the impact they will have. This exercise helps ensure efficient resource allocation, with efforts focussed on initiatives that will deliver the most significant value to addressing anti-racism and anti-discrimination work in medicine and health care.

Looking ahead
ARADAAC members emerged from these in-person meetings with a renewed energy and solidified focus that racism and discrimination exist, create harms and impact the health outcomes of Albertans. Next steps were further discussed at a May 6 virtual meeting and top priority actions have been set.

Priority actions for ARADAAC
Council has asked ARADAAC to review and amend CPSA's Statement on Racism and Discrimination ("Statement"). The Committee intends to present an updated Statement to Council for approval at the December Council meeting.

The Committee would also like to signal to Council the following priority action items:

1. **Changing the committee name**
   The Committee will propose shortening its name by removing "action advisory". Doing so clarifies the rooting of this work in CPSA's mandate and makes the Committee's mission more visible and relevant to interested partners.

2. **Establishing the Committee as a Standing Committee**
   ARADAAC will propose that CPSA move the Committee from a Priority Committee to a Standing Committee. This would ensure that the Committee mandate is ongoing, promoting sustained focus and resources on anti-racism and anti-discrimination efforts within CPSA's role as the regulator.

3. **Supporting and informing a standard of practice (SOP) on racism and discrimination**
   An SOP will provide clear guidelines for preventing and addressing incidents of racism and discrimination in medical practice and

	health care. An SOP fosters accountability, and a consistent approach and expectations across the organization and among regulated members. The SOP is scheduled to go for consultation in spring 2026. 4. **Researching racism and discrimination in medicine in Alberta** Studies show that Black, Indigenous and other racialized peoples consistently report poorer health care outcomes, including higher rates of chronic diseases and premature mortality. Black, Indigenous and racialized physicians also face negative experiences and mistreatment due to their race. The Committee will continue to explore research into the impact of racism and discrimination on physicians, patients and communities. This data will allow Council to make informed decisions (e.g., targeted interventions, resource allocation) to effectively address these issues. 5. **Enhancing strategic partnerships** Building alliances with organizations that share similar goals can amplify the Committee's impact. Pooling resources and expertise allows for more effective action against racism and discrimination in health care. 6. **Recruiting members** Expanding and diversifying membership will enhance the committee's perspectives and expertise, ensuring that it accurately represents the communities it serves and strengthens its initiatives.
Next Steps:	ARADAAC meetings for 2025 are as follows (all virtual, running from 11-noon). • July 8 • Aug. 5 • Sept. 2 • Oct. 28 • Nov. 18
List of Attachments:	
1. Narrative History of ARADAAC	

ARADAAC: a narrative history

As the medical regulator in Alberta, CPSA's mandate is to protect patients by guiding the medical profession. A person is often at their most vulnerable when they need medical care, and should always feel safe, secure and respected when interacting with care providers. CPSA's team works with physicians and physician assistants throughout their careers, providing guidance and support to ensure all patients in Alberta receive safe, high-quality health care.

As part of our responsibility to protect patients, CPSA needs to better understand the challenges faced by patients when accessing health care. This is particularly important for marginalized and racialized communities, who often experience inequities and poorer outcomes in Canada's health system.[1]

In 2018, CPSA hosted a roundtable discussion with members of the LGBTQ community, in collaboration with Alberta Health. The purpose of this event was to facilitate honest discussion, and explore the discrimination and gaps in the health system experienced by LGBTQ patients. This type of engagement is vital towards understanding how CPSA can best support physicians in caring for an evolving patient population in Alberta, with a broad range of needs.

While this early outreach was a positive beginning, it soon became clear that it wasn't enough, and that CPSA needed to do more and had much to learn about how to address racism and discrimination in health care.

The Wessels case

Some of the details shared below describe racism and racist actions, and are disturbing and offensive.

In 2016, Dr. Wynand Wessels, a White surgeon practising in Grande Prairie, fashioned a noose and hung it from an operating room door at the Queen Elizabeth II Hospital in the vicinity of several colleagues, including Dr. Oduche Onwuanyi, a Black surgical assistant.

CPSA became aware of Dr. Wessels' actions in 2017 but due to internal delays, a complaints backlog and a lack of evidence at the time, did not move forward with a formal complaint until 2019. CPSA's failure to respond quickly and appropriately to the incident was criticized by the profession, the public and in the media.

The complaint against Dr. Wessels proceeded to a formal hearing held in October 2020. During his testimony before a CPSA Hearing Tribunal, Dr. Wessels admitted to tying and hanging the noose, but denied it was intended for anyone specific or that his conduct was motivated by racism. He claimed that while attending Scouts during his childhood in South Africa, he learned how to tie knots and intended for the noose to symbolize the need for team building among staff at the hospital. Dr. Wessels repeatedly referred to the noose as a lasso and claimed that in South Africa, a noose is not a symbol of racism and does not carry the same sinister implications as it does in North America.

Dr. Wessels stated that after the incident he had a conversation with Dr. Onwuanyi, who he felt was not concerned about what happened. However, in a letter to CPSA that was entered into evidence during the hearing, Dr. Onwuanyi denied having a conversation with Dr. Wessels about the incident and said he felt the rope was meant to intimidate, and represented a threat directed towards Black persons.

The Tribunal issued their written decision in December 2020 and found Dr. Wessels guilty of unprofessional conduct. While they rejected Dr. Wessels' argument that the noose was a joke and intended to promote team building, the Tribunal ruled there was insufficient evidence to prove his actions was "motivated by racism or intended to create a racist symbol".[2]

A hearing to determine Dr. Wessels' sanction took place in June 2021. Dr. Onwuanyi testified and shared with the Hearing Tribunal his perspective on the incident and how it impacted him. He stated that he saw the noose as a racial slur and a threat, with insinuations of slavery and segregation, and a warning sign that "Blacks need to be cautious" and "are not entitled to any freedom of expression or thoughts or actions within these confines". Dr. Onwuanyi said he disagreed with the Tribunal's finding that the incident was not racially motivated, and felt he was not able to fully participate in the complaint investigation as he was in Nigeria at the time and could not return to Canada due to COVID. He did not feel the Hearing Tribunal received the full benefit of his written statement and shared that while Dr. Wessels made apologies to the White physicians who were present the day of the incident, he did not apologize to Dr. Onwuanyi.

A letter from the Black Physicians' Association of Alberta (BPAA) written by BPAA founder Dr. Kannin Osei-Tutu was read during the sanction proceedings. Dr. Osei-Tutu stated that while only Dr. Wessels truly knew his intent on the day of the incident, anyone can judge the impact of his actions. He stated that the BPAA, like the Tribunal, rejected Dr. Wessels' argument that he intended to promote team building when he fashioned and hung the noose, a globally recognized symbol of death, violence and racial terror. The letter indicated that the sanction ordered by the Tribunal would send a message and spoke to the effect of the incident on Black doctors and patients, and how it eroded the trust they had in the health system.

As part of their submissions on sanction, CPSA's Complaints Director recommended Dr. Wessels serve a 12-month suspension to reflect the seriousness of his conduct, while Dr. Wessels' legal counsel submitted that a reprimand and a "short, sharp" one-month suspension was more appropriate.[3]

In their written decision issued in December 2021, the Tribunal ultimately ordered Dr. Wessels to serve a four-month suspension and pay a portion of the costs associated with the investigation and hearing. This sanction was widely seen as inadequate given the seriousness of the incident and how it impacted others, particularly communities who experience racism and discrimination.

Grande Prairie RCMP conducted a hate crimes investigation into the case and after consulting with the Alberta Crown Prosecution Service, determined no charges would be laid as there was "no reasonable likelihood of conviction".[4]

The impact

The initial media reporting about Dr. Wessels' actions occurred just a few months after the May 2020 murder of George Floyd, an unarmed Black man, by a White police officer in Minneapolis. This tragedy led to widespread protests and demonstrations against police brutality, particularly towards Black people, along with a collective rise in conversations throughout society about racism and discrimination. It also reignited the Black Lives Matter movement, which began in 2013 in response to the murder of Trayvon Martin, a Black teenager.[5]

In an interview with CBC News in July 2020, CPSA Registrar Dr. Scott McLeod publicly acknowledged that CPSA should have acted sooner and been more aggressive in dealing with the Wessels incident.[6] CPSA's mishandling of the case and the Tribunal's decision prompted physicians and members of the public to reach out to CPSA to voice their concerns. Many contacted Dr. McLeod directly, to convey their hurt and disappointment with the outcome of the Wessels case, sharing their experiences and stories about the racism, discrimination and lack of equity they have experienced in Alberta's healthcare system.

In listening to these concerns and experiences, it became clear that CPSA had much to learn and needed to examine its role in perpetuating racism and discrimination in the healthcare system. In February 2021, Dr. McLeod published an article in CPSA's monthly physician newsletter, *The Messenger*, acknowledging the importance of Black History Month, speaking to the significance of the Wessels decision and touching on bias against women within the medical profession.[7] These early learnings and conversations led to further discussions about what could be done within CPSA's regulatory role to make change toward safe, inclusive and equitable healthcare spaces for all.

History of committee development

In 2021, CPSA began to develop a framework to guide the organization in promoting equity, diversity and inclusion within the medical profession, and addressing racism and discrimination in the healthcare system. As part of that framework, a proposal was brought to CPSA Council in March 2021 for CPSA to establish a working group with Council members, focused on assisting CPSA in understanding where it has the greatest authority and influence to implement change. The proposal was approved unanimously and the working group became the Equity, Diversity and Inclusion (EDI) Advisory Committee.

The EDI Advisory Committee first met in July 2021 and was comprised of CPSA Councillors, CPSA team members and several members-at-large to represent diverse, first-hand perspectives on the healthcare challenges faced by communities who experience racism and discrimination. Dr. Osei-Tutu, whose letter on behalf of the Black Physicians' Association of Alberta was read at the Wessels sanction hearing, is a founding member of the committee.

As captured in an early draft of the Terms of Reference, the committee's initial purpose was defined as follows:

The Equity, Diversity and Inclusion (EDI) Advisory Committee will provide advice and make recommendations to CPSA Council and Leadership on where CPSA has the greatest authority to implement and influence change to disrupt racism and discrimination and promote equity, diversity and inclusion in the workplace and in healthcare spaces.

The first few meetings of the EDI Advisory Committee focused on fine-tuning the terms of reference, discussing the desired representation of the committee's core membership and preliminary thoughts on developing a CPSA position statement on racism and discrimination.

Committee evolution

A conversation took place at the committee's January 2022 meeting on the importance of naming racism and talking about it openly as a first step towards change. This led to a proposal to change the name of the committee to better reflect CPSA's commitment to take action against racism and discrimination, and emphasize the goal of disrupting racism and discrimination in health care. Ultimately, the committee renamed itself the **Anti-Racism Anti-Discrimination Action Advisory Committee**, or ARADAAC.

In 2023, to avoid any perception of a conflict of interest, it was determined that CPSA team members would no longer continue as voting members of ARADAAC and instead continue on as secretariat support only. This decision coincided with the establishment of CPSA's internal Equity, Diversity and Inclusion (EDI) Committee, whose focus is on supporting CPSA's team in integrating equity, diversity and inclusion principles into the organization's work. ARADAAC's Terms of Reference were updated in December 2023 to reflect the committee's new composition, with a revised committee purpose:

The Anti-Racism Anti-Discrimination Action Advisory Committee (ARADAAC) will provide advice to CPSA Council on priority areas where CPSA has the greatest authority to action and influence change to disrupt racism and discrimination within regulated member practice.

ARADAAC is currently a priority Council committee, whose role is to advise Council on issues relating directly to CPSA's strategic priorities. ARADAAC's purpose aligns with CPSA's strategic direction[8] towards becoming an anti-racism anti-discrimination organization:

CPSA will become an anti-racism and anti-discriminatory organization, in part by developing specific initiatives to address these issues.

CPSA will integrate equity, diversity and inclusion principles into all we do, and develop specific initiatives and actions that address our equity, diversity and inclusion opportunities.

Collaboration

In 2021, CPSA also established the Indigenous Advisory Circle ("The Circle") as a priority Council committee, with a focus on listening to and learning from First Nations, Inuit and Métis Peoples from across Treaty 6, 7 and 8 Territories. The Circle supports CPSA in identifying how it can better support Indigenous patients and guide the physicians who care for them. ARADAAC's Chair began attending Circle meetings in April 2024 to share information about the committee's work and identify opportunities for ARADAAC and the Circle to collaborate.

Several members of CPSA's internal EDI Committee also provide secretariat support for ARADAAC and provide updates on the internal committee's goals and achievements, to

ensure alignment with ARADAAC and CPSA's overall anti-racism anti-discrimination strategies.

Summary

From **Dr. Kannin Osei-Tutu**, Family Physician, Vice-Chair of ARADAAC, and founder and inaugural Past President of the Black Physicians' Association of Alberta:

The establishment of ARADAAC carries a profound narrative rooted in significant events within CPSA and the province of Alberta, particularly with respect to anti-Black racism. An egregious public incident of anti-Black racism occurred in Grande Prairie, Alberta, highlighting the urgent need for action against systemic racism. In response, the Black Physicians Association of Alberta (BPAA) was founded in 2020, serving as a crucial platform for uplifting the voices of Black physicians and patients in furtherance of a more equitable, safe and compassionate medical community and health system.

A strong collaboration developed between CPSA's Registrar and the BPAA's founder and inaugural President. This partnership not only laid the groundwork for the committee's formation but also played a key role in shaping its mission and objectives. It was agreed that to honor the vital contributions of the BPAA and CPSA's commitment to address all forms and racism, including anti-Black racism and all forms of discrimination, the committee and its future iterations will include two standing representatives from the Black Physicians' Association of Alberta. This was reflected in the original versions of ARADAAC's Terms of Reference.

Independent to the formation of ARADAAC but aligned with CPSA's commitment to addressing racism and discrimination, a distinct Indigenous Advisory Circle was also established as a priority Council committee of CPSA. These significant decisions by CPSA leadership underscores the sincere commitment to ensuring diverse voices are included in dialogue and decisions about combating racism and discrimination in the medical field, thereby promoting inclusivity and equity for all.

Key achievements of ARADAAC (so far)

- Guided the development of a position statement from CPSA Council on racism and discrimination in 2022.
- Provided advice and guidance on the creation of an advice to the profession on anti-racism and anti-discrimination.
- Provided feedback on the content and development of an online training course for physicians about micro-aggressions in health care.
- Provided feedback and guidance on the development of web content for CPSA's website highlighting equity in health care.

Sources

---

[1] Canadian Public Health Association, https://cpha.ca/health-equity-black-people
[2] CPSA, *Order of Tribunal for Dr. Wynand Wessels* (Dec. 18, 2020), *https://search.cpsa.ca/Complaints?fn=021132-000020633437-OT-1*
[3] CPSA, *Order of Tribunal on sanction for Dr. Wynand Wessels* (Dec. 2, 2021), *https://search.cpsa.ca/Complaints?fn=021132-000020633437-OT-2*
[4] CBC Edmonton, *Surgeon handed 4-month suspension for noose incident at Alberta hospital* (Dec. 6, 2021), https://www.cbc.ca/news/canada/edmonton/alberta-surgeon-noose-hospital-1.6274942
[5] Black Lives Matter, https://blacklivesmatter.com/
[6] CBC Edmonton, *Alberta health authorities failing doctors, public with response to 2016 noose incident: experts* (July 8, 2020), *https://www.cbc.ca/news/canada/edmonton/alberta-health-authorities-failing-doctors-public-with-response-to-2016-noose-incident-experts-1.5641340*
[7] Dr. Scott McLeod, *Medical Matters – Working towards change for the better, together* (Feb. 9, 2025), *https://cpsa.ca/news/medical-matters-working-towards-change-for-the-better-together/*
[8] CPSA, *Strategic Plan 2022-2026*, *https://cpsa.ca/wp-content/uploads/2022/09/CPSA-Strategic-Plan-2022-2026-booklet.pdf#page=21*

cpsa
COLLEGE OF PHYSICIANS & SURGEONS OF ALBERTA

Submission to:	**Council**

Meeting Date:	Submitted by:		
May 30, 2025	Dr. Nicole Cardinal		
Agenda Item Title:	6.5 Indigenous Advisory Circle (CIRCLE) Update		
Action Requested:	☐ The following items require approval by Choose an item. See below for details of the recommendation.	☐ The following item(s) are of particular interest to Choose an item. Feedback is sought on this matter.	☒ The attached is for information only. No action is required.
AGENDA ITEM DETAILS			
Recommendation (if applicable):	N/A		
Background:	On April 29, the Indigenous Advisory Circle (Circle) had its second of four scheduled meetings in 2025. During this meeting, the Circle: • Welcomed the newest member, Rhonda Laboucan. • Provided guidance on CPSA's Path to Truth and Reconciliation, specifically on actions beginning in 2025: • Conducting research into CPSA's past and current role in broken trust and harms to First Nations, Métis and Inuit Peoples: The Circle provided preliminary guidance on the scope of this work and how to approach research by focusing on both significant historical events (e.g., the closing of Indian Hospitals) and key topics (e.g., access to medical records). Recognizing this will be a long-term effort, the Circle has requested ongoing updates and opportunities for input into CPSA's approach to this work. • Unpacking the TRC Calls to Action and the United Nations Declaration on the Rights of Indigenous Peoples (UNDRIP) by CPSA leadership: The Circle supported the CPSA team's plans, which include leadership exploring CPSA's responsibility for and alignment with the calls to action. Members recommended an expanded approach to ensure CPSA and Council also hear from those who shaped the TRC Calls to Action and UNDRIP. • Hearing from First Nations, Métis and Inuit Peoples through engagement efforts: The Circle appreciated revisions the CPSA team made to engagement principles to address cultural humility, respecting rights and diversity of First Nations, Inuit and Métis Peoples, and		

	being clear on the purpose of engaging. The Circle asked the team to ensure engagement remains an ongoing topic for the Circle's advice and guidance. • Shared input into CPSA's approach to gifting and honoraria, including Elder honoraria. Guidance included: • Drawing on other organizations' policies to calibrate CPSA's approach to gifting and honoraria, and • Drafting updates to any existing CPSA policies and complementing those with guidance on protocols.
Next Steps:	The Circle plans to meet virtually two more times in 2025 to continue guiding CPSA on its efforts towards more equitable care for Indigenous patients.
List of Attachments:	
N/A	

Submission to:	**Council**

Meeting Date:	Submitted by:		
May 29, 2025	Nicole Cardinal Committee Chair		
Agenda Item Title:	6.6 Ad Hoc Registrar and CEO Selection Committee – Closing Report		
Action Requested:	☒ The following items require approval by Council. See below for details of the recommendation.	☐ The following item(s) are of particular interest to Choose an item. Feedback is sought on this matter.	☐ The attached is for information only. No action is required.
AGENDA ITEM DETAILS			
Recommendation (if applicable) :	That the Ad Hoc Registrar and CEO Selection Committee be officially dissolved, as it has completed its designated work by securing a successful candidate for the Registrar and CEO role.		
Background:	Council established the Ad Hoc Registrar and CEO Selection Committee in November 2024 to lead the search and selection process for the Registrar and CEO role within CPSA. Council approved the terms of reference and membership for the Committee: • Jaelene Mannerfeldt (physician member, Chair), • Nicole Cardinal (physician member, incoming Chair), • Patrick Etokudo (public member), • Robert Merrifield (public member), • Daisy Fung (physician member). In 2025, Jaelene Mannerfeldt served as the Past-Chair of CPSA Council and informed the process in a non-voting and advisory capacity. Ed Jess, Chief Innovation Officer, served as the Senior Executive Leader of CPSA who supported the work of the committee in a non-voting capacity, representing the operational interests of CPSA relevant to aspects of the CEO's duties. An overview of the work completed by the Committee is attached to this report, along with the Terms of Reference. Whereas Council is satisfied that the Selection Committee and the Committee Chair have undertaken reasonable due diligence in discharging their duties under the Terms of Reference, it is		

	recommended that Council moves for the official dissolvement of the Committee.
Next Steps:	N/A
List of Attachments:	
1. Overview and Timeline of the Selection Committee 2. Registrar and CEO Selection Committee Terms of Reference	

COLLEGE OF PHYSICIANS & SURGEONS OF ALBERTA

Overview and Timeline of the Registrar and CEO Selection Committee

Below is a timeline of the steps taken which ultimately led to the selection of the finalist candidate being presented to Council, prepared for the May 2025 Council meeting:

- An RFP process was initiated on **October 29th, 2024** to seek executive search support to help CPSA find their next Registrar and CEO after Dr. Scott McLeod announced his retirement plans.
- Through this process, DHR Global was identified as the firm to work with after a thorough review of proposals and interviews with firms.
- To launch the process, a kick-off meeting between DHR Global, the Search and Selection Committee and the CPSA Internal Support Team led by Michael Neth was conducted on **December 11th, 2024**.
- At that meeting, we discussed the role and determined a timeline for next steps in the process.
- The first step was for DHR to conduct a thorough consultation process which was completed through the back end of December and into January. The consultation process helped inform the entire search process and was a mix of one-on-one meetings, small focus group meetings, and a web survey.
- On **January 9th, 2025**, DHR Global presented the consultation findings to the Search and Selection Committee and CPSA Internal Support Team. In total, 36 one-on-one meetings were conducted, 10 people responded to the web survey to offer feedback and 8 individuals were connected with through small focus group meetings.
- Following this meeting, the DHR Global team worked with the committee and internal support team to finalize a Position Specification and Advertisement for the role which included feedback that was received through the consultation process. The final versions of these documents were approved on **January 13th**, and announcements were made that week to share that a public search was now under way.
- The advertisement for the role was posted on the Canadian Medical Association Careers Page, the Canadian Public Health Association website, and on the Canadian Society of Physician Leaders website.
- DHR Global also began their targeted outreach to potential candidates in the market at this time.
- On **January 24th**, the committee and DHR Global had an update meeting where DHR provided an update on the early progress they made, and the first-round interview questions and process were first discussed.
- A second update meeting was held on **February 6th** and the interview questions and process were finalized at this meeting. DHR Global also provided another update or progress.
- On **February 14th**, DHR Global met again with just the Search and Selection Committee to review the Prospective Candidates for the role. At this meeting, DHR shared that they reached out to over 100 individuals on the search, had 18 initial screening calls with potential candidates, received 2 web applicants, and ultimately presented **8** qualified candidates to the committee.
- From this group of 8, the Search and Selection Committee selected **5** candidates to bring in for a first-round virtual interview. These interviews were held via Teams on **February 24th** and **March 3rd**.

- Following these first-round interviews, the Committee reconvened with DHR Global on **March 7th** to debrief and determine next steps. Ultimately, the Committee unanimously agreed to bring forward **2** of the candidates for a second round in-person meeting.
- These second-round discussions were held on **March 18th** and **March 19th**. Each candidate had their own day and met with the committee in a neutral site location in Edmonton. They spent 2 hours with the committee in the afternoon. During these meetings, the candidates presented a topic for 20 minutes and then the rest of the time was used for open Q&A and discussion. The presentation topic was: *The purpose of the 20-minute presentation is to give the committee an opportunity to see your thought processes in action and for you to demonstrate your ability to communicate a compelling message to a diverse audience. There are no right or wrong answers to the questions being posed of you.*

  In 2026, CPSA will be working to develop its strategic plan for 2027 and beyond.

  -Please conduct a preliminary strategic analysis using SWOT or a comparable tool and present your findings to the search committee.

  If you were the successful candidate:

  -What would your priorities be for the organization as CPSA embarks on its next strategic planning cycle?

  -What would your personal priorities be in the first 6 and 12 months on the job?

- In order to see the candidates in another setting, dinners were also scheduled for the candidates and the committee in the evening following the presentation. These allowed for the committee to have more casual conversations with the candidates in an informal setting.
- On **March 20th**, the Committee and DHR Global met to debrief on the search process and the committee came to a ***unanimous*** decision to select **Dr. Colleen Forestier** as their recommended candidate for the Registrar and CEO role.
- DHR Global completed background and reference checks and provided reports to the Council Chair on **March 27th**.
- Council met in-camera to approve the Selection Committee's recommended candidate on **April 1st**.
- On **April 3rd**, DHR Global was provided with the terms of Dr. Colleen Forestier's employment and reviewed these terms with Dr. Forestier before coming to a verbal agreement.
- DHR Global received a signed version of the employment agreement from Dr. Forestier on **April 4th**.
- Dr. Forestier was then put in touch with CPSA team to work out other final details including a communications plan.

The College of Physicians and Surgeons of Alberta

Registrar and CEO Selection Committee
"Selection Committee"
Terms of Reference

Purpose

The College of Physicians and Surgeons of Alberta (CPSA) is undertaking a search for a new Registrar and CEO to be in place for September 2025.

The purpose of these terms is to support this specific Registrar and CEO search and is not intended to be generalizable to future Registrar and CEO searches given the unique timelines and characteristics of each search.

A Selection Committee will be established by, and accountable to, the CPSA Council for leading the search and selection process. The Selection Committee will remain in place until a successful candidate is secured and cease to exist upon completion of the search.

The objective of the selection process is to secure the best candidate for the Registrar and CEO role. The following principles will guide the process:

- Search will be international in scope, with a focus on individuals with experience in a Canadian healthcare system.
- A fair and transparent process will be used.
- Input from the relevant stakeholders will be secured, including the CPSA Council and staff.
- Deliberations of the Selection Committee and all matters pertaining to its proceedings will be strictly confidential.
- All candidates, internal and external, will follow the same selection process.

Membership

The Selection Committee will be comprised of four voting members comprised of two (2) regulated members and two (2) public members of CPSA Council. It is intended that there be a balance of regulated and public members in guiding this search.

The Selection committee will also include up to two non-voting members comprised of one Senior Executive Leader of CPSA and, to support continuity through the process, the Past-Chair of CPSA Council beginning in 2025.

The Selection Committee Chair will be the Council Chair.

To note:

- Experience in executive search would be an asset, though it is not a requirement to be a member of this committee.

- In the event a vacancy occurs among the voting members on the Committee during the course of the search, the Selection Committee Chair in consultation with the Selection Committee, will endeavor to fill the vacancy in a way that achieves a balance of regulated and public members.

- The Selection Committee Chair be responsible for determining the appropriateness of inclusion of a past-Chair of CPSA Council as a non-voting member of the Selection Committee.

- Selection Committee work will be supported by CPSA staff.

Roles and Responsibilities

The Chair of the Selection Committee will:

- Work with the Chair of Finance & Audit Committee to establish the parameters of the compensation package for the new Registrar and CEO, ensuring it aligns with the College's compensation framework.
- Work with the Executive Search Firm and CPSA to negotiate the employment contract with the final candidate.
- Work with CPSA to draft the new employment contract.
- Initiate all Selection Committee meetings.
- Communicate regularly with CPSA Council on the progress of the Selection Committee. The Chair is the spokesperson for the Selection Committee. CPSA Council and committee members will direct any questions from interested candidates for the position to the Chair of the Selection Committee or the Search Firm engaged to lead the search.
- Fully participate in voting processes in instances where consensus cannot be reached on a single top candidate.

The Selection Committee will:

- Select an executive search firm through a Request for Proposal process to assist in conducting an International Search.
- Work with the chosen executive search firm to develop a position profile that aligns with the CPSA's vision, mission, values, strategic priorities, and operational needs. The profile will be shared with CPSA Council to secure input and support.
- Work with CPSA to communicate to all employees and stakeholders outlining the goals and timelines for the process, prior to beginning the search and selection process.
- Work with the chosen search firm to develop an agreed upon comprehensive search and selection process.
- Collaborate with the Search Firm to establish selection criteria including appropriate weighting of qualifications for the position when determining a short list of candidates.
- Discuss strategies to resolve any potential conflicts of interest that may arise.
- Participate in all interviews with short listed candidates and rank them in order of best fit.
- Strive for consensus on the top candidate.
- Recommend the top candidate(s) for the role of Registrar and CEO to CPSA Council for a thorough vetting and approval.
- Authorize a communication strategy to announce the successful candidate.

The Senior Executive Leader of CPSA will support the work of the committee in a non-voting capacity, representing the operational interests of CPSA relevant to aspects of the CEO's duties.

The Past-Chair of CPSA Council will inform the process in a non-voting and advisory capacity.

Every consideration will be made to accommodate members' schedules. Attendance at all scheduled Selection Committee meetings is highly recommended given the timelines, nature and purpose of this search.

For a successful process, all Selection Committee members should aim to:

- Attend all scheduled meetings and interviews with candidates and remain on the committee until its work is fully completed.

- Respect the process and maintain focus on the goal of the committee.
- Ensure the best possible candidate is recommended to CPSA Council.
- Bring his/her career and personal experience to the candidate evaluation process. While the position profile and selection criteria will serve as a benchmark on which all potential candidates are evaluated, intuition and a sense of candidate fit are important in any selection process and the goal is to use all information, both subjective and objective, in the evaluation of potential candidates.
- Maintain strict confidentiality in all matters related to the search. All enquiries must be taken to the Chair of the Selection Committee.
- Fully engage in respectful, open, thoughtful discussion, ensuring breadth of opinion and thought.
  Declare any conflict of interest with either the search firm or a potential candidate.

Authority and Accountability

- The *CPSA Governance Structure and Committees Policy* categorizes this committee as an Ad Hoc Committee.
- The Selection Committee makes recommendations to CPSA Council.

Confidentiality

- All written materials and discussions related to decisions made at the meetings of the Committee are confidential except any information deemed necessary to communicate with stakeholders.
- The Confidentiality and Non-disclosure Agreement signed annually by all Council members extends to their work and actions on Council Committees.

Timeline for Search & Selection Process

The Selection Committee will be selected by November 29, 2024.
The Executive Search Firm will be selected by December 13, 2024.
The Registrar/CEO will be offered the position by April 1, 2025.

cpsa
COLLEGE OF PHYSICIANS & SURGEONS OF ALBERTA

Submission to:	**Council**

Meeting Date:	Submitted by:		
May 30, 2025	Ed Jess, Chief Innovation Officer		
Agenda Item Title:	7.1 Key Performance Indicators (KPI) Dashboard		
Action Requested:	☐ The following items require approval by Choose an item. See below for details of the recommendation.	☐ The following item(s) are of particular interest to Choose an item. Feedback is sought on this matter.	☒ The attached is for information only. No action is required.
AGENDA ITEM DETAILS			
Recommendation (if applicable) :	N/A		
Background:	An update on the CPSA Organizational Key Performance Indicators will be provided based on feedback received from Council in March 2025. Council members will also receive a live presentation of the most recent KPI data from Quarter 1, 2025.		
Next Steps:	N/A		
List of Attachments:			
N/A			