

APPENDICES:

Evidence-based guideline for Sonographers



CONTENTS

Ultrasound assessment of the gravid cervix to assess for risk of spontaneous preterm birth: evidence-based clinical practice guideline for sonographers.

Appendix 1: Questions used to develop this clinical practice guideline	3
Appendix 2: Guideline development group and affiliations	4
Appendix 3: How this guideline was developed	5
Appendix 4: Minimum sonographer reporting requirements (checklist)	18
Appendix 5: iCahe guideline quality check list	19
Appendix 6: Summary of individual ratings to determine strength of recommendation ratings	19

APPENDIX 1: QUESTIONS USED TO DEVELOP THIS CLINICAL PRACTICE GUIDELINE

Pre-sonographic assessment	What is the expected time commitment?
	What patient preparation is required?
	What equipment should be used?
	What are the indications for gravid cervix assessment, and when should different imaging techniques be performed?
	What are the contraindications to different imaging techniques to assess the gravid cervix?
	How should the transducer be prepared?
	Are there any important safety considerations?
Sonographic Assessment	How to locate and identify cervix, internal os, external os?
	How to acquire images to measure to measure cervical length?
	How to perform a measurement of cervical length?
	What are the normal appearances of the cervix?
	What sonographic appearances indicate a shortened or insufficient cervix?
	What are the limitations and pitfalls in assessing and measuring the cervix? Can they be overcome?
	What are the limitations and pitfalls in assessing and measuring the cervix? Can they be overcome?
Post-sonographic assessment	Does elastography have a role?
	How should transducers be cleaned?
	How should the examination be documented?
Level of education and training	How do limitations and pitfalls impact on interpretation of the results?
	What are the minimum sonographer education and training/competency/credentialling requirements?

APPENDIX 2: GUIDELINE DEVELOPMENT GROUP AND AFFILIATIONS

Member	Affiliations
Peter Coombs	Standards of Practice, Editorial Board Sonography ASA Ultrasound, Monash Health Imaging Department of Medical Imaging and Radiation Sciences, Monash University
Dr Ann Quinton	Academic Central Queensland University, Senior Sonographer Nepean Hospital, NSW Health ASA Special Interest Group for Women's health
Sarah Srayko	Sonographer, Pacific Radiology Group, New Zealand ASA Special Interest Group for Women's Health Active member of ASA, NZMRTB, ARDMS and Sonography Canada
Dr Nayana Parange	Professorial Lead, Associate Professor Medical Sonography, Allied Health and Human Performance, University of South Australia ASA Special Interest Group for Women's health
Michelle Pedretti	Chief Sonographer, King Edward Memorial Hospital for Women, PhD Student - Statewide implementation of cervical length screening for the prevention of preterm birth, Outreach team member of the Western Australian Prevention of Preterm Birth Participant in the Expert Panel Meeting – The National Preterm Birth Prevention Collaborative
Sandra O'Hara	Sandra O'Hara Deputy Ultrasound Supervisor, SKG Radiology. Associate Editor - Australasian Journal of Ultrasound in Medicine. Newcastle Obstetrics and Specialist Ultrasound, Senior Sonographer
Sophie OBrien	Hunter Imaging Group, Sonographer Supervisor ASA Special Interest Group for Women's health
Paula Kinnane	Academic Central Queensland University, Senior Sonographer Royal Brisbane Womens Hospital ASA Special Interest Group for Women's health
Dr Jacqueline Spurway	Standards of Practice ASA, Chief Sonographer Orange Hospital and Western NSW LHD Clinical Co-ordinator Ultrasound Services
Dr Kerry Thoires	Guideline Development Group Coordinator, Editor-in-Chief, Australasian Sonographers Association, Adjunct Associate Professor, University of South Australia

APPENDIX 3: HOW GUIDELINE WAS DEVELOPED

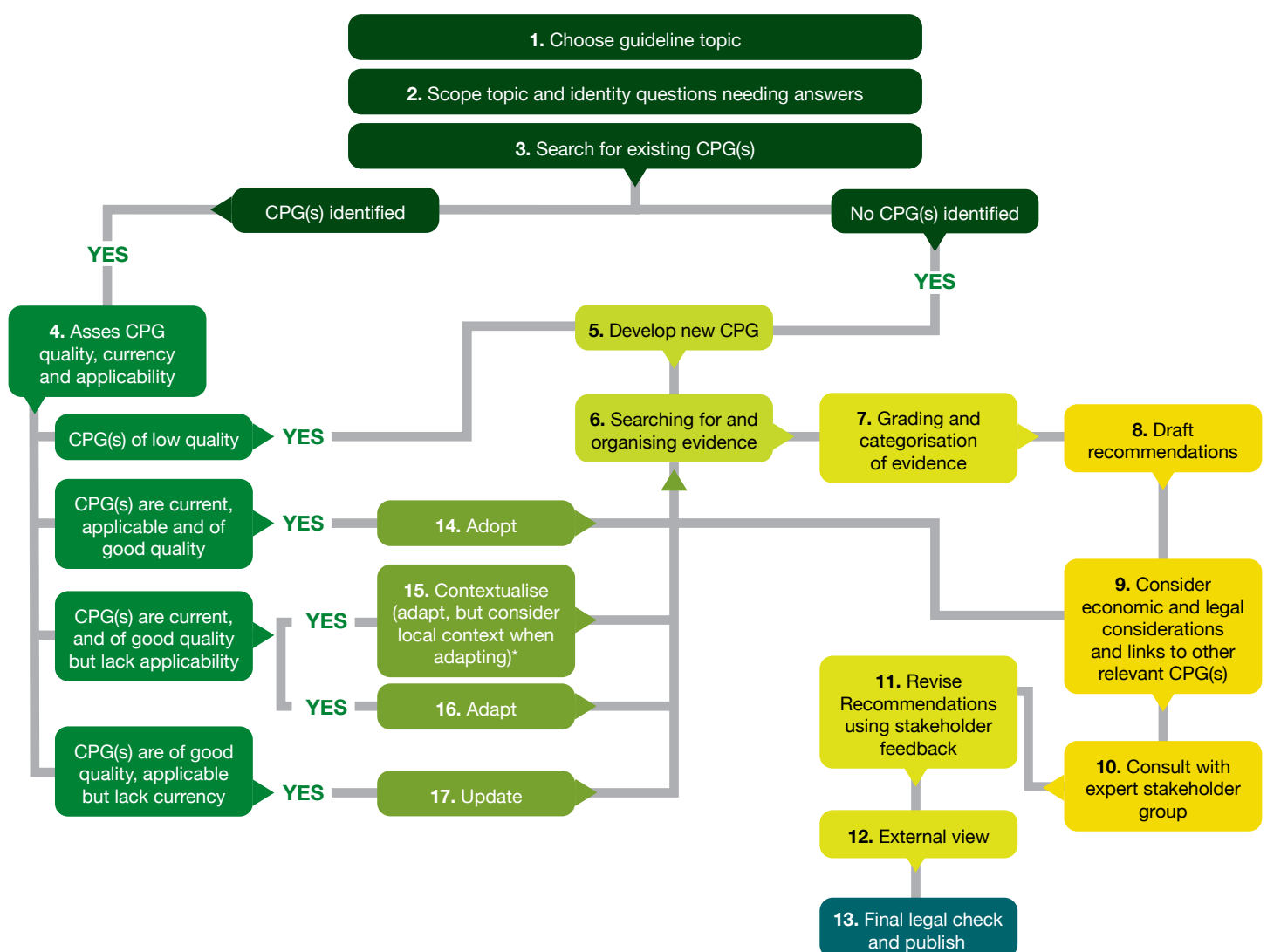
An overarching plan was created to develop the guideline and future guidelines for sonographers (Figure 1).

Key features of the plan were 1) to develop questions that the guideline would answer, 2) draw on existing evidence based clinical practice guidelines (CPGs) to inform the guideline, 3) undertake literature searches when existing CPGs have deficits, and 3) consult with stakeholders. The decision to draw on existing CPGs, rather than developing a de novo guideline, was regarded as more efficient as de novo guideline development is time consuming and expensive, requiring teams of methodologists and experts to search, critique and debate the evidence base. This approach also enabled review of existing evidence-based guidelines developed for other professional groups involved in the care of obstetric patients, to ensure the recommendations in this guideline did not contradict any existing guidelines in use for these professionals. Table 1 provides a timeline of key guideline development activities.

Guideline Development Group

A Guideline Development Group was established to set up to develop questions the guideline would address, to advise on stakeholder groups, to source underpinning evidence, to categorise and grade evidence and to draft and write. A series of questions and topics that should be addressed in the guideline was developed (Appendix 1).

Figure 1 Flow diagram of general plan of guideline development.



Key: CPG; clinical practice guideline

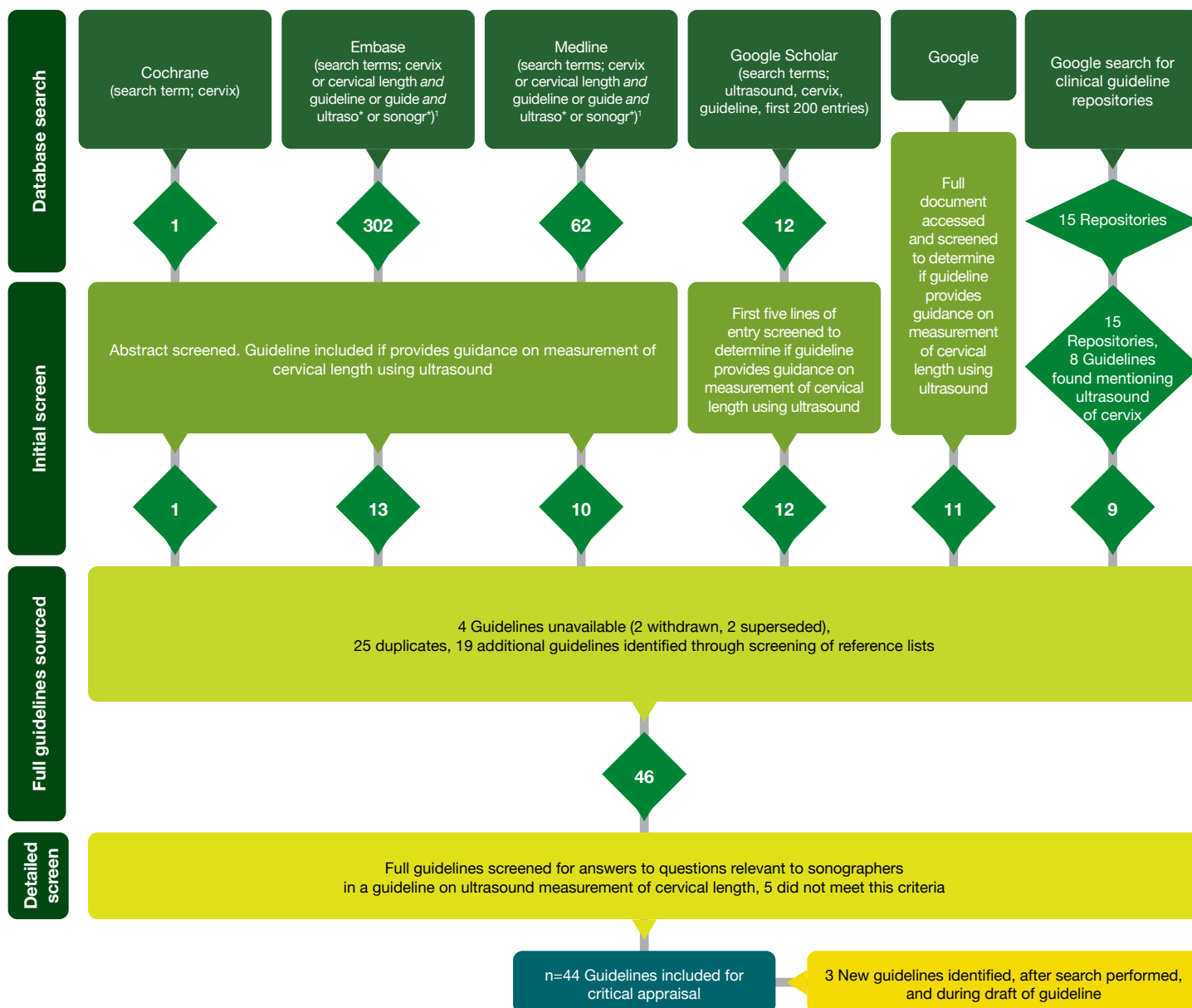
Table 1: Calendar of key guideline development activities

Date	Activity
8.11.21	Guideline development group Zoom: Initial discussions about guideline development and approach.
6.12.21	Guideline development group Zoom meeting: discussions on questions that need answering in guideline, and initiating process to identify existing relevant guidelines.
7.3.22	Guideline development group discussion on identified existing guidelines, discussion on draft format and content.
April May	Online survey; questions about draft guideline.
8.7.22 and 4.7.22	Guideline development group Zoom meeting; discussion on revisions to guideline based on survey results.
10.7.22-31.7.22	Revised draft distributed to members and Worksheet (1) send out to group to elicit comments on draft recommendations.
7.8.22-12.9.22	Revised draft distributed to members and Worksheet (2) send out to group to elicit comments on draft recommendations.
10.10.22	Guideline development group Zoom meeting; discussion on revisions to guideline based on feedback from Worksheet (2).
18.10.22	Final draft distributed, legal advice sought.
November -December 22	Feedback collated.
January-February 2023	Stakeholder consultation.
28.3.22	Guideline development group Zoom meeting; discussion on stakeholder consultation and amendments to draft.
June 13-July 14 2023	Public consultation.
24th and 31st July 2023	Guideline development group zoom meetings to discuss public consultation feedback.
August 2023	Finalisation of guideline.

Literature search and appraisal

A literature search was performed to identify existing CPGs that may be relevant to the guideline. Figure 2 outlines the results.

Figure 2: Flow chart of search strategy and results of literature search to identify existing relevant clinical practice guidelines



¹ search limited by english language; 2000-17.12.2021

Results of search of search engines and CPG repositories

- Twelve electronic documents were retrieved from Google Scholar and allocated for detailed screening. The documents were identified using search terms: ultrasound; cervix; guide. The first five lines of the first 200 entries were screened. Documents were retrieved if it appeared to be a CPG, or if it provided a 'how to' description.
- Eleven electronic documents were retrieved from Google and allocated for detailed screening. The documents were identified using search terms: ultrasound; cervix; guide. The first five lines of the first 200 entries were screened. Documents were retrieved if it appeared to be a guideline, or if it provided a 'how to' description. Patient information documents were not included.
- A total of nine electronic documents were retrieved from fifteen CPG repositories (Table 2) and allocated for detailed screening. The CPG repositories were identified via a Google search using the search terms: cervix; ultrasound; preterm. Each of these repositories were searched for guidelines relating to ultrasound and preterm birth.

Table 2: CPG repositories searched for relevant clinical guidelines

Guideline repository		Identified guidelines (n)
1.	Australian Clinical Practice Guidelines	—
2.	Queensland Clinical guidelines	1
3.	Clinical Guidelines health direct	—
4.	Agency for Clinical Innovation NSW	—
5.	NICE	1
6.	Royal Women's Hospital, Victoria	—
7.	The Department of Health, Australian Government	1
8.	NHMRC	1
9.	SA Health	2
10.	Fetal surveillance Education program RANZCOG	1
11.	Medscape	1
12.	UptoDate,	1
13.	Agency for Healthcare Research and Quality	—
14.	NIH	—
15.	NHS	—

Results of database searches

- One electronic document was retrieved from the Cochrane database and allocated for detailed screening after a search using 'cervix' as the sole search term.
- The Embase data base was searched using search terms; Cervix; cervical length; ultraso*; sonograph*;guide*
The search was limited by English language and date (1947 to 2021 December 17). 302 documents were identified. After initial screening of abstracts for their potential to inform the development of a guideline for sonographers to assess the gravid cervix sonographically, the full text versions of 13 documents were allocated for detailed screening.
- The Medline database was searched using search terms; Cervix; cervical length; ultraso*; sonograph*;guide*
The search was limited by English language and date (1946 to 2021 December 17). Sixty-two documents were identified. After initial screening of abstracts for their potential to inform the development of a guideline for sonographers to assess the gravid cervix sonographically, the full text versions of ten documents were allocated for detailed screening.
- One new relevant guideline was identified while the guideline was being drafted, after the formal search.

Detailed Screen of retrieved documents

Fifty-six documents were screened in detail selected for full text retrieval and detailed screening. Detailed screening was undertaken to select existing CPGs that would inform the new guideline. Four CPGs were not available for detailed screening due to their withdrawal (n=2) or being superseded (n=2) and 25 were duplicates. An additional 19 CPGs were identified by examining reference lists of CPGs identified by the above search strategy. A total of 46 documents were retrieved and underwent a detailed screen.

For a document to pass the detailed screen it had to address at least one of the questions relevant to a sonographer guideline on ultrasound of the gravid cervix (Table 1) that had been identified by the Guideline Development Group. Forty-one documents passed the detailed screen and were progressed to critical appraisal. Three new CPGs were identified after the search process, and during the drafting of the guideline, each of which were also subjected to a detailed screen.

Critical appraisal of existing guidelines

Methods

Each of the 44 documents which passed the detailed screen were critically appraised using the iCAHE Guideline Quality Checklist (Appendix 4) and rated with a quality score (-/14). The iCAHE Guideline Quality Checklist was chosen because it offered a simple, single-user tool that is easy to implement in busy settings, does not require specific training prior to use and it does not require a scoring rubric, as compared against the more commonly used AGREEII instrument, which has 23 questions, a complex 1–7 scoring system, and requires multiple testers to make a judgment on guideline quality. The iCAHE Guideline Quality Checklist has good reported inter-rater agreement, takes less time than AGREEII, ^(5, 58) and there are no significant differences between its scores and the scores of the AGREEII instrument ($p=0.063$), and ranks of CPGs according to their average total scores is similar between instruments. ⁽⁵⁹⁾ It was appropriate to use this simpler instrument, as a large sample of relevant CPGs were identified.

Few of these were targeted explicitly towards the towards the clinical questions that need answering by sonographers, instead focussing on clinical management decision making, which is outside the scope of practice of sonographers. Using the less resource intensive iCAHE critical appraisal tool, effort could be transferred from the critical appraisal process to selecting and adapting narrative and recommendations from the existing CPGs that were relevant and applicable to sonographic clinical practice.

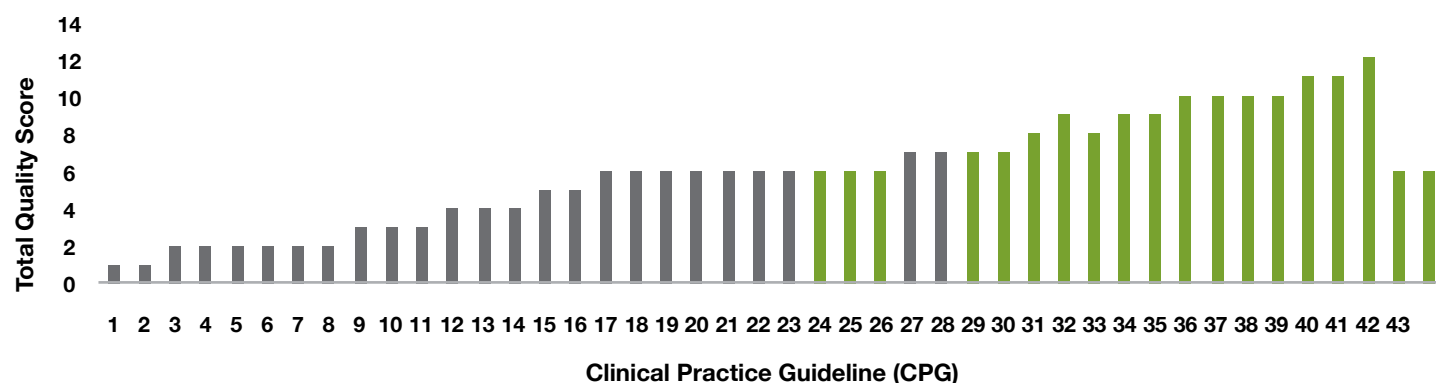
Results

The average score of the 44 critically appraised CPGs was 6.95 (median 6.02, range 1-12) out of a possible score of 14 (Figure 3a).

The CPGs were stratified into two categories based on the ‘underlying evidence’ domain of the iCAHE Guideline Quality Checklist 1) best evidence and 2) least evidence. To qualify as ‘best evidence’, the CPG had to score an underlying evidence score of ‘2’ or above (maximum possible evidence score=4). In the low evidence group total scores ranged from 1-7 (average 4.04, median 4), with all recording a zero score in the ‘evidence’ subcategory. In the best evidence group total scores ranged from 6-12 (average 8.63, median 9) and scores in the ‘evidence’ subcategory ranging from 2-4 (Figure 3b).

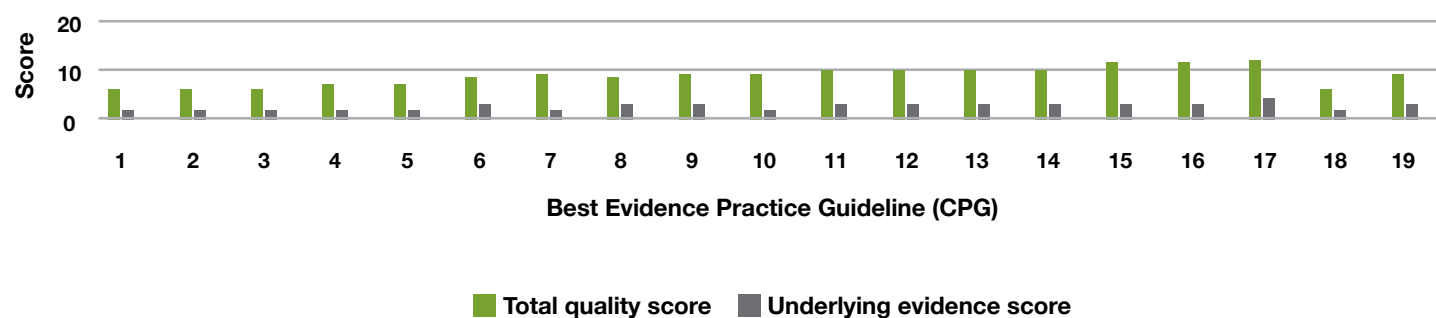
Figure 3: Quality scores for identified existing clinical practice guidelines ((see 3c for key to guideline numbers and titles).

3a: Total quality scores for each identified existing clinical practice guidelines



KEY: grey bars indicate low evidence CPGs, green bars represent best evidence CPGs

3b: Total quality scores and Underlying evidence scores for identified existing clinical practice guidelines rated as having the best evidence



3c: Key to CPGs listed in figures 3a and 3b

1	Cervical length screening. New Zealand Ministry of Health ⁽³⁾	23	2019. ACR-ACOG-AIUM-SMFM-SRU practice parameter for the performance of standard diagnostic obstetrical ultrasound. ⁽²⁵⁾
2	Obstetrical Ultrasound Imaging Guidelines. MedSolutions Inc. ⁽⁴⁾	24	Society for Maternal-Fetal Medicine. The role of routine cervical length screening in selected high- and low-risk women for preterm birth prevention. 2016 ⁽²⁶⁾
3	Bonney Elizabeth, Ultrasound of cervical length: why, when and how. The British Medical Ultrasound Society ⁽⁵⁾	25	ACOG 234: Prediction and prevention of preterm birth ⁽²⁷⁾
4	UW Ultrasound. Second/Third trimester guidelines. University of Washington. ⁽⁶⁾	26	ACOG practice bulletin no. 127: Management of preterm labor. 2012 ⁽²⁸⁾
5	Ultrasound evaluation of the gravid cervix. Obygn Key. ⁽⁷⁾	27	Perinatal Practice Guideline. Cervical Insufficiency and Cerclage. Department for Health and Ageing, Government of South Australia ⁽²⁹⁾
6	Guidelines for the management of spontaneous preterm labor: identification of spontaneous preterm labor, diagnosis of preterm premature rupture of membranes, and preventive tools for preterm birth. The Journal of Maternal-Fetal & Neonatal Medicine. 2011 ⁽⁸⁾	28	No. 374-universal cervical length screening. Journal of Obstetrics and Gynaecology Canada. 2019 ⁽³⁰⁾
7	Why, when and how?. Sonography, 2: 74– 83. ⁽⁹⁾	29	Pregnancy Care Guidelines. 23. Risk of Preterm birth. Australian Government. Department of Health. ⁽³¹⁾
8	Cervical Incompetence Imaging. Medscape. ⁽¹⁰⁾	30	ACOG Practice Bulletin No. 142. Cerclage for the management of cervical insufficiency. 2014 ⁽³²⁾
9	Routine measurement of cervical length at time of mid trimester anomaly scan in all women. New Zealand Maternal Fetal Medicine Network ⁽¹¹⁾	31	Cervical assessment by ultrasound for preventing preterm delivery. Cochrane database of systematic reviews. 2019. ⁽³³⁾
10	How to measure cervical length. Ultrasound in Obstetrics & Gynecology. 2015 ⁽¹²⁾	32	Measurement of cervical length for prediction of preterm birth. The Royal Australian and New Zealand College of Obstetricians and Gynaecologists. ⁽³⁴⁾
11	Guideline on preterm labor and delivery by the Society of Specialists in Perinatology (Perinatoloji Uzmanları Derneği-PUDEK), Turkey. ⁽¹³⁾	33	Society for Maternal-Fetal Medicine Publications Committee. Progesterone and preterm birth prevention: translating clinical trials data into clinical practice. 2012 ⁽³⁵⁾
12	Guidelines for the Performance of Second (Mid) Trimester Ultrasound. Australasian Society for Ultrasound in Medicine ⁽¹⁴⁾	34	Prevention of spontaneous preterm birth. French College of Gynaecologists and Obstetricians. 2017 ⁽³⁶⁾
13	Preterm birth prevention-low risk women pathway. North Metropolitan Health Service, Government of Western Australia ⁽¹⁵⁾	35	Measurement of cervical length for prediction of preterm birth (RANZCOG 2022) ⁽³⁷⁾
14	Practice guidelines for performance of the routine mid trimester fetal ultrasound scan. Ultrasound in Obstetrics & Gynecology. 2011 ⁽¹⁶⁾	36	Twin pregnancies: guidelines for clinical practice from the French College of Gynaecologists and Obstetricians 2011 ⁽³⁸⁾
15	Sonography of the cervix at term gestation (Doctoral dissertation, Utrecht University). ⁽¹⁷⁾	37	No. 260-ultrasound in twin pregnancies. Journal of Obstetrics and Gynaecology Canada. 2017 ⁽³⁹⁾
16	The shortened cervix in pregnancy: 'Investigation and current management recommendations for primary caregivers. Australian Journal of General Practice. 2019 ⁽¹⁸⁾	38	ISUOG Practice Guidelines: role of ultrasound in twin pregnancy. 2016 ⁽⁴⁰⁾
17	[CG] Transvaginal ultrasound evaluation of the cervix - measurement of cervical length. NHS. Greater Glasgow and Clyde. ⁽¹⁹⁾	39	ACR appropriateness criteria® multiple gestations. Journal of the American College of Radiology. 2017 ⁽⁴¹⁾
18	Perinatal Practice Guideline. Preterm Labour and Birth. Prevention, Diagnosis and Management. Department for Health and Ageing, Government of South Australia ⁽²⁰⁾	40	Guideline No. 401: Sonographic cervical length in Singleton Pregnancies: techniques and clinical applications. Journal of Obstetrics and Gynaecology Canada. 2020 ⁽⁴²⁾
19	Preterm labour and birth. Queensland Clinical Guidelines, Queensland Health. ⁽²¹⁾	41	National Institute for Health and Care Excellence. Preterm labour. (New guideline 25.) 2015. Australia ⁽⁴³⁾
20	Preterm labour. North Metropolitan Health Service, Government of Western Australia ⁽²²⁾	42	ACR Appropriateness Criteria® Assessment of Gravid Cervix. 2020 ⁽⁴⁴⁾
21	(2018), AIUM Practice Parameter for the Performance of Limited Obstetric Ultrasound Examinations by Advanced Clinical Providers. ⁽²³⁾	43	Salomon LJ, Alfirevic, Z., Berghella, V., Bilardo, C.M., Chalouhi, G.E., Costa, F.D.S., Hernandez-Andrade, E., Malinger, G., Munoz, H., Paladini, D. and Prefumo, F. ISUOG Practice Guidelines (updated): performance of the routine mid-trimester fetal ultrasound scan. Ultrasound in obstetrics & gynecology: the official journal of the International Society of Ultrasound in Obstetrics and Gynecology 2022 ⁽⁴⁵⁾
22	Short cervix before 24 weeks: Screening and management in singleton pregnancies. UptoDate. Wolters Kluwer. ⁽²⁴⁾	44	Coutinho, C.M., Sotiriadis, A., Odibo, A., Khalil, A., D'Antonio, F., Feltovich, H., Salomon, L.J., Sheehan, P., Napolitano, R., Berghella, V. and da Silva Costa, F. (2022), ISUOG Practice Guidelines: role of ultrasound in the prediction of spontaneous preterm birth. Ultrasound Obstet Gynecol. https://doi.org/10.1002/uog.26020 ⁽⁴⁶⁾

Data extraction from existing guidelines and draft of guideline

Data in the existing CPGs that addressed the clinical questions the guideline was planned to address, was extracted to develop draft recommendations and associated summary statements, 'how to' guides, and safety, feasibility and cost-effectiveness statements for the guideline. Primary sources for developing recommendations in this guideline were the best evidence guidelines, and secondary sources were least evidence guidelines and other identified relevant literature sources.

It was decided, after reviewing recommendations in existing recommendations and their underpinning evidence, that these recommendations would be adapted into new recommendations which had relevance for the clinical practice and scope of practice for sonographers. Caution was applied in adapting the recommendations so as not to contradict their original intent.

A draft of the guideline was developed by the guideline development group using the following methods;

1) online group zoom meetings, 2) individual anonymous online survey and 3) individual worksheets.

Notations of recommendations

For each new recommendation in this guideline which had underpinning evidence an evidence table was constructed. Recommendations without underpinning evidence, were based on and notated as 'consensus decision'

The evidence table included 1) existing recommendations from best evidence CPGs that were relevant to the new recommendation, with its published evidence rating, 2) a standardised evidence rating, 3) an overall level of evidence rating for the new recommendation and 4) a strength of recommendation rating. Explanations of 2,3 and 4 are provided below.

Standardised evidence rating

Evidence rating methods across the identified best evidence CPGs were inconsistent (Table 3). To standardise these ratings the evidence rating for each existing recommendation was converted to either strongly, moderately, or weakly in support of or in opposition to the new recommendation. This was judged by one guideline development group member who assessed if the evidence rating fell in the lower third (weak), the middle third (moderate), or the upper third (strong) of the existing guidelines evidence scale (assuming equal distance between each rating). Each recommendation from existing evidence-based guidelines was given a standardised evidence rating based on its published the evidence rating. A summary of the evidence rating methods used for each of the best evidence guidelines are summarised in Table 3. 'RIng' notations were used to denote the standardised evidence ratings (Table 4).







Table 3. Summary of the evidence rating methods used for each of the best evidence guidelines. ⁽⁷⁸⁾

Best evidence guideline number and title	Year published	Evidence rating method (rating, higher numbers indicate higher evidence rating)	Recommendation (R) and Evidence (E) scores (range of possible scores)
24. Society for Maternal-Fetal Medicine. The role of routine cervical length screening in selected high-and low-risk women for preterm birth prevention. ⁽²⁶⁾	2016	Recommendation; 1(3), 2(2), Best practice (1) Evidence; A(3), B(2), C(1)	R3 (1-3) E3 (1-3)
25. ACOG 234: Prediction and prevention of preterm birth ⁽²⁷⁾	2021	Evidence based recommendations; A(3), B(2), C(1)	E3 (1-3)
26. ACOG practice bulletin no. 127: Management of preterm labor. ⁽²⁸⁾	2012	Evidence based recommendations; A(3), B(2), C(1)	E3 (1-3)
29. Pregnancy Care Guidelines. 23. Risk of Preterm birth. Australian Government. Department of Health. ⁽³¹⁾	2019	Evidence based recommendations; A (6), B (5), C (4), D (3) Consensus based recommendations (2), Practice points (1)	E6 (1-6)
30. ACOG Practice Bulletin No. 142. Cerclage for the management of cervical insufficiency. ⁽³²⁾	2014	Level of recommendations: based on good or consistent scientific evidence (3), B based on limited or inconsistent scientific evidence (2), C primarily based on expert opinion and consensus (1)	R3 (1-3)
31. Cervical assessment by ultrasound for preventing preterm delivery. Cochrane database of systematic reviews. ⁽³³⁾	2019	Type of studies, number of studies	-
32. Measurement of cervical length for prediction of preterm birth. The Royal Australian and New Zealand College of Obstetricians and Gynaecologists. ⁽³⁴⁾	2017	Recommendation classification: A(6), B(5), C(4), D(3), Consensus-based (2), Good practice note (1)	R6 (1-6)
33. Society for Maternal-Fetal Medicine Publications Committee. Progesterone and preterm birth prevention: translating clinical trials data into clinical practice. ⁽³⁵⁾	2012	Quality of evidence: I(5), II-1(4), II-2 (3), II-3 (2), III (1) Recommendation classification: A (3), B (2), C (1).	E5 (1-5) R3 (1-3)
34. Prevention of spontaneous preterm birth. French College of Gynaecologists and Obstetricians. ⁽³⁶⁾	2017	Quality of evidence: LE1 (4), LE2 (3), LE3 (2), LE4 (1) Classification of recommendations: A(4), B(3), C(2), professional consensus (1)	E4 (1-4), R4(1-4)
35. Measurement of cervical length for prediction of preterm birth (RANZCOG) ⁽³⁷⁾ <i>Note: updated version of number 32</i>	2022	Recommendation classification: A(6), B(5), C(4), D(3), Consensus-based (2), Good practice note (1)	R6 (1-6)
36. Twin pregnancies: guidelines for clinical practice from the French College of Gynaecologists and Obstetricians ⁽³⁸⁾	2011	Quality of evidence: LE1 (4), LE2 (3), LE3 (2), LE4 (1) Classification of recommendations: A(4), B(3), C(2), professional consensus (1)	E4 (1-4), R4(1-4)
37. No. 260-ultrasound in twin pregnancies. Journal of Obstetrics and Gynaecology Canada. ⁽³⁹⁾	2017	Quality of evidence: I (5), II-1(4), II-2 (3), II-3 (2), III (1) Classification of recommendations: A (6), B (5), C(4), D(3), E(2), L(1).	E5 (1-5), R6 (1-6)
38. ISUOG Practice Guidelines: role of ultrasound in twin pregnancy. ⁽⁴⁰⁾	2016	Quality of evidence: 1++ (8), 1+(7), 1-(6), 2++(5), 2+(4), 2-(3), 3(2), 4(1) Grades of recommendation: A(5), B(4), C(3), D(2), good practice point (1)	E8 (1-8), R5 (1-5)
39. Acr appropriateness criteria@ multiple gestations. Journal of the American College of Radiology. ⁽⁴¹⁾	2017	Appropriateness: Usually not appropriate (1), May be appropriate (2), Usually appropriate (3) Evidence: Strong (5), Moderate (4), Limited (3), Expert consensus (2), Expert opinion (1)	A3 (1-3) E (1-5)
40. Guideline No. 401: Sonographic cervical length in Singleton Pregnancies: techniques and clinical applications. Journal of Obstetrics and Gynaecology Canada. ⁽⁴²⁾	2020	Quality of evidence: I (5), II-1(4), II-2 (3), II-3 (2), III (1) Classification of recommendations: A (6), B (5), C(4), D(3), E(2), L(1).	E5 (1-5), R6 (1-6)

41.	National Institute for Health and Care Excellence. Preterm labour. (New guideline 25.) ⁽⁴³⁾	2015	Type of studies, number of studies Clear and strong evidence(1): recommendation worded as 'offer' Less clear evidence(2): recommendation worded as 'consider'	E (1-2)
42.	ACR Appropriateness Criteria® Assessment of Gravid Cervix. ⁽⁴⁴⁾	2020	Appropriateness: Usually not appropriate (1), May be appropriate (2), Usually appropriate (3) Evidence: Strong (5), Moderate (4), Limited (3), Expert consensus (2), Expert opinion (1)	A3 1-3 E (1-5)
43.	ISUOG Practice Guidelines (updated): performance of the routine mid-trimester fetal ultrasound scan. ⁽⁴⁵⁾ <i>Note: updated version of number 38.</i>	2022	Quality of evidence:1++ (8), 1+(7), 1-(6),2++(5), 2+(4), 2-(3), 3(2),4(1) Grades of recommendation: A(5), B(4), C(3), D(2), good practice point (1)	E4/5 (1-8) R3 (1-5)
44.	ISUOG Practice Guidelines: Role of ultrasound in the prediction of spontaneous preterm birth ⁽⁴⁶⁾	2022	Quality of evidence:1++ (8), 1+(7), 1-(6),2++(5), 2+(4), 2-(3), 3(2),4(1) Grades of recommendation: A(5), B(4), C(3), D(2), good practice point (1)	E4/5 (1-8) R3 (1-5)

A: refers to appropriateness, E: refers to Quality of evidence, R: refers to recommendation classification








Table 4: 'Ring' notations representing standardised evidence ratings (adapted from⁽⁴⁷⁾)

Standardised evidence rating for recommendations from existing evidence-based guidelines	Notation
Strongly in support of	
Moderately in support of	
Weakly in support of	
Strongly in opposition to	
Moderately in opposition to	
Weakly in opposition to	

Overall Evidence Rating

An Overall Level of Evidence Rating for the new recommendation was determined by assessing the standardised evidence ratings for each existing recommendation underpinning the new recommendation using the criteria outlined in Table 5.

Table 5: Explanation of overall level of evidence ratings (adapted from⁽⁴⁷⁾)

Overall Level of evidence	Explanation	Notation
Consistent strong support for recommendation	The evidence underpinning existing relevant guidelines is mostly strongly in support of recommendation 	√√√
Consistent support for recommendation	The evidence underpinning existing relevant guidelines is mostly moderately in support of recommendation 	√√
Weak support for recommendation	The evidence underpinning existing relevant guidelines is mostly weakly in support of recommendation 	√
Consistent strong opposition for recommendation	The evidence underpinning existing relevant guidelines is mostly strongly in opposition of recommendation 	xxx
Consistent opposition for recommendation	The evidence underpinning existing relevant guidelines is mostly moderately in opposition of recommendation 	xx
Weak support against recommendation	The evidence underpinning existing relevant guidelines is mostly weakly in opposition of recommendation 	x
No evidence	Consensus decision	

Strength of recommendation rating

Each recommendation given a ‘Strength of Recommendation’ rating, as either ‘strong’ or ‘weak’.

Initially, each guideline development group member was invited to rate the strength of recommendation based on the overall level of evidence, the balance between benefits and harm, and the balance between benefits and costs.

After individuals rated each recommendation, the results were collated and presented scores the majority rating (strong/weak) was allocated as the strength of recommendation. Individual ratings are presented in appendix 6.

Consultation

1. Stakeholder consultation (January-February 2023)

Invited	Responded
The Royal Australian and New Zealand College of Radiologists	√
Australian Diagnostic Imaging Association	
The Royal Australian and New Zealand College of Obstetricians and Gynaecologists	
Australian Sonographer Accreditation Registry	
The Australasian Society for Ultrasound in Medicine	√
Australian Society of Medical Imaging and Radiation Therapy	
Medical Radiation Practice Board of Australia	
New Zealand Medical Radiation Technologists Board	
British Medical Ultrasound Society	√
Australian Preterm Birth Prevention Alliance	
Women’s Healthcare Australasia	
Jean Hailes for Women’s Health	
Women’s Health Action	
Consumers Health Forum of Australia	

2. Public consultation (June 13-July 14 2023):

The draft guideline was posted to Australasian Sonographers Association (ASA) website. ASA members were invited to provide feedback. ASA partners and stakeholders were invited to distribute the weblink amongst their members, and to provide institutional feedback.

Responses from individuals were received from 17 sonographers and one midwife. Institutional responses were received from the Royal Australian and New Zealand College of Radiologists and the Royal Australian and New Zealand College of Obstetricians and Gynaecologists.

Minor changes, resulting from the public consultation feedback were made prior to publishing the final guideline.

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APPENDIX 4: MINIMUM SONOGRAPHER REPORTING REQUIREMENTS (CHECKLIST)

This checklist example can be adapted into a sonographer worksheet or reporting template. It may be copied, distributed, edited, remixed, and built upon on the condition that appropriate credit is given, and any changes are indicated.

Patient name	Age	Date	Gestational age	Identified as increased risk by referring obstetric care provider, or using increased risk criteria in Table 1 in Section C of this guideline (Y/N)	Risk factors		
					TAS	TVS	TPS
Consent obtained.							
CL measurement.							
Method of cervical length measurement (i.e. straight line, sum of segments, trace or spline method).							
Was shortening of the cervix observed in response to uterine activity?							
The anterior and posterior walls of the cervix are of similar width and echogenicity.							
Was funnelling observed? Y/N							
If funnelling was observed, you may describe its shape. i.e., Y-shaped, V-shaped or U-shaped.							
Y, V, or U shape.							
Was amniotic sludge observed?							
Was amniotic-chorionic separation observed?							
Was the endocervical canal dilated?							
Was cervical cerclage present?							
Was the placenta low-lying?							
Provide measurement of distance to internal os if present							
Was a vasa praevia identified?							
Comment on quality of images including any limitations to the scan.							
Comment on the quality of the cervical length measurement, including any limitations to the measurement.							
Other: eg., information obtained from the patient and/or referring clinician relating to clinical signs, comparison of current sonographic appearance to previous scans, contraindications and consent, or examination limitations or deviations from the guideline or local protocol.							

APPENDIX 5: iCAHE GUIDELINE QUALITY CHECK LIST

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Guideline:

Guideline producer:

Link:

Availability	Comments
Is the guideline readily available in full text?	(1)
Does the guideline provide a complete reference list?	(1)
Does the guideline provide a summary of its recommendations?	(1)
Dates	
Is there a date of completion available?	(1)
Does the guideline provide an anticipated review date	(1)
Does the guideline provide dates for when literature was included?	(1)
Underlying Evidence	
Does the guideline provide an outline of the strategy they used to find underlying evidence?	(1)
Does the guideline use a hierarchy to rank the quality of the underlying evidence?	(1)
Does the guideline appraise the quality of the evidence which underpins its recommendations?	(1)
Does the guideline link the hierarchy and quality of underlying evidence to each recommendation?	(1)
Guideline developers	
Are the developers of the guideline clearly stated?	(1)
Does the qualifications and expertise of the guideline developer(s) link with the purpose of the guideline and its end users?	(1)
Guideline purpose and users	
Are the purpose and target users of the guideline stated?	(1)
Ease of use	
Is the guideline readable and easy to navigate?	(1)
Score	TOTAL /14

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APPENDIX 6: SUMMARY OF INDIVIDUAL RATINGS TO DETERMINE STRENGTH OF RECOMMENDATION RATINGS

Recommendation	Rater						
	1	2	3	4	5	6	7
1a	S	S	S	S	S	S	S
1b	S	S	S	S	S	W	W
2a	S	S	S	S	S	S	S
2b	S	S	S	S	S	S	S
2c	S	S	—	S	S	S	S
3a	S	W	—	S	S	S	S
3b	S	S	—	S	S	S	W

Key: S; strong recommendation, W; weak recommendation



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