Breast Ultrasound

Practice Analysis Report

Approved by the ARDMS Council on June 2, 2026

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Contents

Acknowledgements

Thank you to the subject matter expert volunteers who spent many hours developing the task inventory, evaluating the survey and responses, and reviewing the final content outline. Also, thank you to the 323 Registered Diagnostic Medical Sonographers (RDMSs) certified in Breast Ultrasound around the world who took the time to participate in the practice analysis survey. This study was completed through the efforts of many individuals at Inteleos who worked together with our expert volunteer panel to identify tasks, construct the survey, administer the survey, and analyze the data.

Executive Summary

The American Registry for Diagnostic Medical Sonography (ARDMS) is part of the Inteleos community of certifications, the globally recognized standard of excellence in sonography. ARDMS is responsible for the preparation of valid and reliable certification examinations in the field of sonography. Conducting practice analyses at the national and international levels allows ARDMS to evaluate the current practice expectations and performance requirements within the field. The Breast Ultrasound practice analysis collected information on the requisite Breast Ultrasound knowledge, skills, and abilities essential for sonographers practicing Breast Ultrasound. The practice analysis was conducted in several stages:

1. Review and Revise Existing Content Outline
2. Expert Panel Review
3. Field Survey
4. Data Analysis
5. Final Task and Domain Weighting
6. Eligibility Review

The results of these activities led to the Breast Ultrasound Practice Analysis Panel recommending a new Content Outline and updated eligibility requirements. Additionally, the panel endorsed reducing the number of scored items on the exam from 140 to 120. This report details the methodology, data collection, analysis, and the recommended updated test content outline for the breast ultrasound examination based on the results of the practice analysis. The report concludes with the review and confirmation of the eligibility requirements.

Background of Study

The ARDMS recognizes that diagnostic medical sonography is a valuable tool for healthcare. There are several healthcare professions that utilize sonography in practice to increase the quality and efficacy of patient care. Successful mastery and demonstration of the knowledge and skills required to hold ARDMS sonographer credentials will provide sonographers with an additional source of validation. The Breast Ultrasound examination assesses the knowledge, skills, and abilities required for sonographers practicing breast ultrasound.

Methodology

Selection and Profile of Subject Matter Experts

Members of the Breast Ultrasound Assessment Committee reviewed and proposed changes to the existing content outline. A Breast Ultrasound Practice Analysis Expert Panel was recruited and participated in all the other stages of the practice analysis except for the Field Survey, which was sent to a larger sample as described in the *Field Survey* section of this report. The panel was comprised of members of the Breast Ultrasound Assessment Committee and additional experts who were selected from a pool of current certified RDMS sonographers who indicated an interest in volunteering. Efforts were made to select a representative panel of the population of RDMS certified Breast sonographers on several demographic features. For a list of panelists and their involvement, see Appendix A.

Review and Revise Existing Content Outline

Assessment Committee Feedback

On August 26, 2025, an email was sent to the members of the Breast Ultrasound Assessment Committee to collect feedback about the current Breast content outline. The purpose of the email was to (a) learn what the committee members like and dislike about the outline, (b) identify outdated content, (c) identify topics that may be missing from the outline, and (d) to solicit additional resources that could be part of the practice analysis resource review such as protocols and textbooks. The email provided the context needed for the Assessment Committee members to provide their feedback, including a description of what a Practice Analysis is and an overview of the process. A link to a survey was included for the members to submit their feedback. The Assessment Committee was given two weeks to submit their feedback. This email is included in Appendix B.

Expert Panel Meetings

Practice Analysis Workshop (PAW) #1

On November 5, 2025, an orientation meeting for the 12 members of the Breast Ultrasound Practice Analysis Panel was held. In this one-hour meeting, an overview of the Practice Analysis process was provided, as well as the projected timeline for the project, the roles and responsibilities of each panelist, and the materials the panelists would need to complete their review of the current content outline and the Assessment Committee feedback were shared. See Appendix C for the agendas and/or summaries of the meetings along with relevant documents.

Practice Analysis Workshop (PAW) #2

On November 19, 2025, the panelists met for Practice Analysis Workshop #2 to review the compiled feedback that was submitted prior to the meeting. The documents clearly identified suggestions from the Assessment Committee members, the Resource Review, and the panel. There was facilitated discussion of the suggestions and consensus decisions were captured in real-time. During this workshop, the panelists were able to provide their final recommendations for the tasks in domains 1 and part of domain 2 before the meeting concluded. See Appendix C for the meeting summary.

Practice Analysis Workshop (PAW) #3

On December 17, 2025, the panelists met for Practice Analysis Workshop #3 to complete the review of the compiled feedback from the previous meeting. The discussion during the workshop was facilitated, and consensus decisions were captured in real-time. The panelists were able to provide final recommendations for the tasks in remaining domains before the meeting concluded. In addition, the panelists approved the list of demographic questions that will be included in the field survey. See Appendix C for the agenda and meeting summary.

Field Survey

Structure and Instructions

The field survey was divided into two parts: demographic items and the task inventory items. A screening item used at the beginning of the survey ensured only responses from those actively practicing breast ultrasound were included in the response data.

The tasks (grouped by domains) as developed by the practice analysis expert panel were presented to survey participants. The survey asked participants to rate each task on an importance scale. The instructions for this section were:

> *The remaining questions will be asked about each of the tasks and will appear as follows:*
>
> ***How important** is this task to **your** practice of Breast Ultrasound?*
>
> - *Absolutely essential*
> - *Very important*
> - *Of average importance*
> - *Of little importance*
> - *Not important at all*

The rating scale and weighting calculations are described in the *Data Analysis* section below.

Survey Administration Procedure and Response Rate

The survey was sent to a random sample of 2,500 RDMS sonographers who were, at the time, certified in Breast Ultrasound. The survey was available from February 18, 2026, to March10, 2026. The survey was administered via the web-based survey platform Qualtrics®. All responses to the survey were kept confidential. Responses from participants who did not complete the task inventory were not used as part of the data analysis. 323 respondents completed the survey and reported they actively practiced breast ultrasound.

Data Analysis

Demographic Analysis

Measurement and Research staff analyzed the responses to demographic questions. The results can be found in Appendix D and include responses from the 2017 Breast practice analysis where available for comparison. The respondents appear broadly representative of the breast sonographer population across gender and U.S. region.

Task Inventory Analysis

Measurement and Research staff scored the responses to each inventory item on an importance scale from 1 to 5 (1= *Not Important* to 5 = *Absolutely Essential*). Then they determined the mean importance score for each task.

Staff classified tasks into three categories based on their importance of score, with fractional scores rounded down before classification. Panelists were informed of the category definitions and the initial retention recommendations derived from the analysis.

- **Green (importance scores 4.00 – 5.00):** Tasks that are frequently performed, highly important, or both. These tasks should be retained on the exam blueprint. A rationale is required for removal of any task in this category.
- **Yellow (importance scores 3.0-3.99):** Tasks of moderate criticality. These may be retained or removed based on additional review. A rationale is required for removal.
- **Red (importance scores 1.00 – 2.99):** Tasks that are infrequently performed, of low importance, or both. These tasks should be considered for removal. A rationale is required to retain any task in this category.

After adding write-in comments (described below), nearly all of the tasks fell into the “green” category. Two tasks fell into the “yellow” category, and there were zero tasks in the “red” category. See Appendix E for the criticality scores and the panel’s recommendations.

Task Inventory Write-in Comments:

At the close of each domain section, survey respondents were invited to submit open-ended write-in responses identifying tasks that may have been omitted from the task inventory. The Measurement and Research staff prompted Perplexity powered by the Claude Sonnet 4.6 Thinking model to provide insights and recommendations based on these responses. The prompt instructed the model to:

1. Identify and create a summary of all write-in comments.
2. Deduplicate within write-in comments and against existing task list.
3. List remaining tasks with suggestions on where within the existing task list it should go.

Of the 232 total write-in fields containing responses across the six domains, 61 were deemed substantive after excluding blanks, refusals, and off-topic comments. These responses were deduplicated and consolidated into representative task statements, then evaluated against the existing task list using semantic judgment to remove redundancies. This process yielded 18 net-new tasks recommended for addition to the inventory, with Domain 1 (Anatomy and Physiology) generating the greatest number of candidates (n = 7). Mammogram interpretation skills were the most frequently cited gap, mentioned by 14 respondents. For each recommended task, a specific placement within the existing task list was identified based on logical sequence and thematic alignment.

Staff reviewed the output for accuracy. Next, a survey was sent to panel members and the assessment committee to determine importance values for these additional tasks.

These tasks with their associated importance values were added to the draft content outline with a note indicating that it came from the field survey write-in (WI) question for consideration by panel.

Initial Domain Ratings

The mean importance scores for each original task were summed up within each domain. The sum of the mean Importance score for each domain was divided by the total mean criticality score to determine the initial domain weightings (Table 1).

Table 1: Domain Weightings with Original Tasks

Domain	Domain Title	Previous % of Total	N Tasks*	Criticality Sum	% of Total
1	Anatomy and Physiology	15%	7	31	18%
2	Pathology	34%	13	59	35%
3	Integration of Data	19%	5	22	13%
4	Protocols	13%	5	23	13%
5	Ultrasound Physics	12%	4	18	11%
6	Emerging Technology and Treatment	7%	4	16	10%
	Total	100%	38	168	100%

The staff did the same calculations, including the suggestions from the write-in comments (Table 2):

Table 2: Domain Weightings with Write-In Suggestions

Domain	Domain Title	Previous % of Total	N Tasks*	Criticality Sum	% of Total
1	Anatomy and Physiology	15%	13	57.26	23%
2	Pathology	34%	18	80.48	32%
3	Integration of Data	19%	8	36.38	15%
4	Protocols	13%	6	26.89	11%
5	Ultrasound Physics	12%	6	26.78	11%
6	Emerging Technology and Treatment	7%	5	20.29	8%
	Total	100%	56	248.08	100%

Final Task and Domain Weighting

Final Practice Analysis Workshop (PAW) #4

The Breast Ultrasound Practice Analysis Panel convened their final Zoom call on April 8, 2026. The panelists were presented findings from the demographic analysis, and the task inventory results, including the domain weightings. The panel determined that concerns regarding the representativeness of the survey sample relative to the broader population had been adequately addressed. The panelists then reviewed the task list, including the write-in tasks. They made slight changes in language to some of the tasks and deleted tasks they determined were redundant or subsumed under other tasks. The complete task inventory, importance scores, and panel comments are provided in Appendix E.

The panel was also asked to consider whether to reduce the number of scored items on the examination, a question raised by the Assessment Committee. The Senior Psychometrician presented projected reliability estimates under three scoring configurations using the Spearman-Brown prophecy formula:

- Current (140 scored items): $\alpha = .91$
- Option 1 (120 scored items): $\alpha = .90$
- Option 2 (100 scored items): $\alpha = .88$

The panel was asked to weigh these reliability projections alongside content coverage requirements informed by the updated task list and domain weightings, and to recommend the appropriate number of scored items. After deliberation, the panel agreed that reducing the examination to 120 scored items was appropriate. They concluded that this structure preserves acceptable reliability ($\alpha = .90$) and content coverage, while minimizing burden on both test takers and item development resources.

Following the meeting, staff recommended consolidating three smaller domains into one, reducing the content outline from six domains to four, and combining three redundant tasks. These recommendations were distributed to the panel via email for review. The panel concurred and identified additional redundant tasks for consolidation. The Chair of the Assessment Committee approved the final edits to the content outline. Table 3 presents the final domain weightings proposed by the Practice Analysis panel for approval by the ARDMS Council, and the proposed detailed content outline can be found in Appendix F.

Table 3. Final Domain Weightings

Domain	Domain Title	Previous % of Total	N Tasks	Importance Sum	% of Total
1	Anatomy and Physiology	15%	7	31	18%
2	Pathology	34%	15	68	38%
3	Integration of Data	19%	4	18	10%
4	Imaging Techniques and Technology	32%*	14	61	34%
	Total	100%	40	178	100%

*Combines previous domains 4, 5, & 6

RDMS Eligibility Review and Recommendation

As part of the Practice Analysis Panel call on April 8, 2026, the current RDMS eligibility was reviewed and discussed. The Practice Analysis Panel confirmed that the appropriate training, professional experience, and education to be considered minimally competent in Breast Ultrasound are included. The full instructions for the panel and the original eligibility and prerequisites can be found in Appendix G. Table 4 illustrates the updated proposed Prerequisite Chart for the RDMS credential, based on the results of the Practice Analysis Panel and what is currently accepted by staff.

Table 4: Updated RDMS Prerequisite Chart

Education	Required Clinical Ultrasound/Vascular Experience	Documentation	Status – When to apply	Prerequisite
Reapplicants	*No additional experience is required.*	--CV form	*Previous approval for a specialty examination*	*N/A (same as current*
Non- CAAHEP or HSO accredited sonography program/two-year allied health education program that is patient-care related or foreign equivalent. Allied health occupations include, but are not limited to, radiologic technologist, respiratory therapist, occupational therapist, physical therapist and registered nurse. (Must include internship/externship	*Minimum of 1680 hours of clinical experience*earned over a minimum of48 weeks*	*--Transcript or Foreign equivalency report --Diploma -- Letter --CV form*	*Successful completion*	*Prerequisite 1*
CAAHEP or Canadian Health Standards	*No additional experience is required.*	--Diploma	*Graduate or Student (60 days*	*Prerequisite 2*

Organization (HSO) accredited program in diagnostic medical sonography, diagnostic cardiac sonography or vascular technology.		--Letter --CV form if applicable	*prior to graduation)*	
Bachelor's degree (any major) or foreign degree equivalent to a bachelor's degree in the U.S. or Canada	*Minimum of 1680 hours of clinical experience* earned over a minimum of 48 weeks*	--Bachelor's Degree or Transcript or Foreign equivalency report --Letter --CV form	*Successful Completion*	*Prerequisite 3A*
Non CAAHEP or HSO accredited bachelor's degree in sonography or vascular technology	*Minimum of 1680 hours of clinical experience within program; no additional experience outside of the program required.*	--Bachelor's Degree or Transcript or Foreign equivalency report --Letter --CV form	*Graduate One year prior to degree completion, provided they have completed 12 months of fulltime clinical experience within the program.*	*Prerequisite 3B*
A CCI, ARRT or Sonography Canada sonography certification	*No additional experience required.*	*--Active credential - CV form*	*Active Certification(s)*	*Prerequisite 5*
Successful completion of a general, medical, or sonographic physics class/seminar/course.	*No additional experience required.*	-Transcript reflecting successful completion of a graded general, medical, or sonographic college, post-secondary or higher education physics class (with a grade of C or above) or CME certificate denoting a minimum award of 12 CMEs (earned within 2 years of app submission)	*Successful Completion*	*SPI Requirement*

MD or DO license or MBBS degree.	*Minimum of 500 clinical diagnostic studies/cases in the applied for specialty*	*--Copy of current, valid license to practice* *--Letter*	*Successful Completion*	*ARDMS Physicians Prerequisite*

Final Content Outline and Eligibility Approval

This Breast Ultrasound Practice Analysis report, along with the content outline recommended by the Practice Analysis Panel (see Appendix F) and the updated prerequisites for the RDMS credential, will be presented to the ARDMS Council for approval. Upon approval, this report will be amended to include the approval date.

Appendix A: Practice Analysis Panelists

Table 5: Practice Analysis Panel

Participant Name	PAW #1	PAW #2	PAW #3	PAW #4
Robina Taheri	X	X	X	X
Farah Farooqi	X	X	X	
YoonHee McAuliffe*	X	X		X
Sarah Moylan	X	X	X	X
Katelyn Connolly*	X	X	X	X
Manal Abdelhady	X	X	X	X
Anastasia Tracy	X	X		X
Kelly Warren*	X	X		X
Kathryn Holecek *	X	X	X	X
Kimberly Michael, PhD *	X		X	
Alka Sandhu*	X	X		
Tara Bartholomay*		X	X	

*Current BR Assessment Committee member

Table 6: Gender Identification of Population and Panelists

Gender	Percent in Population	Percent of Panelists
Female	97%	100%
Male	3%	0%

Table 7: U.S. Census Region (for U.S. residents)

Census Region	Percent in Population	Percent of Panelists
Midwest	21%	33.3%
Northeast	21%	25%
West	22%	16.7%
South	35%	25%

Other (military/Territory)	1%	0%

Appendix B: Assessment Committee Communications

Request to BR Assessment Committee for feedback on current outline

1 attachment (190 KB)
BR-Examination-Content-Outline-V24.1.pdf;

Hello BR Assessment Committee,

We are excited to announce the launch of our 2025 BR Practice Analysis and would greatly appreciate your feedback early in the process.

What is a practice analysis?
A practice analysis is a systematic collection of data about the work you do as BR professionals. This process helps ensure that our examination accurately reflects the knowledge, skills, and abilities required for competent practice.

Benefits of a practice analysis & why your involvement matters:

- Provides a snapshot of the profession
- Tracks trends in professional practice
- Informs other programs related to certification
- Supports credibility of the certification examination
- Creates an opportunity for stakeholders (i.e., you) involvement
    - Your participation is foundational to the BR examination. The work you do throughout this process will help define what is assessed, ensuring the exam remains relevant and comprehensive. As members of the Assessment Committee, you represent the broader MSK community.

Process Overview:
This process will be completed in several phases.

1. **Planning and Gathering Resources** *(current phase)*
2. **Panel Involvement**
    a. We will carefully select 10–12 panel members
    b. Assessment Committee members will receive an invitation, though participation is optional.

c. Each panel member will be trained and will participate in refining the tasks and structure of the content outline.

3. **Field Survey**
4. **Survey Analysis**
5. **Panel Final Discussion/Approval**
6. **Recommendation to Council**
7. **Council Approval**

Your Feedback Needed:

As part of phase one, we are seeking input from the Assessment Committee and other stakeholders. If you believe someone outside the committee should receive this survey, please contact me with their name and contact information.

The survey will close on September 5, 2025:

https://inteleos.ca1.qualtrics.com/jfe/form/SV_0riqVJVB9aHyrB4

Thank you for your willingness to participate and for your ongoing dedication to the BR exam and your profession.

If you have any questions or concerns, please feel free to reach out. I am always happy to help.

Request to BR Assessment Committee to join BR Practice Analysis Panel

Hello Everyone,

Thank you for completing the BR Practice Analysis feedback on the BR content outline. On behalf of ARDMS, I'm excited to invite you to serve as a panelist for the Breast (BR) Sonography Practice Analysis.

This is a valuable opportunity to collaborate with experts in the field, earn 9 CMEs (waived*), learn more about how the certification exam is developed, and make a meaningful contribution to the profession. All activities will be conducted remotely.

What is a Practice Analysis?
A practice analysis systematically gathers data on the work you do as BR professionals to ensure the exam reflects the knowledge, skills, and abilities needed for competent practice.

Benefits of participation include:

- Helping define the new certification exam content outline
- Supporting the credibility of the BR exam
- Tracking trends in professional practice
- Shaping certification-related programs
- Ensuring your voice helps guide the profession

We will select 12 panelists to participate, with others placed on a waitlist. Participation requires attending four Zoom sessions (schedule below) and completing a few independent assignments between meetings. All training will be provided.

Important Dates:

- **Nov 5, 2025 (7–8 PM EST):** Orientation & process overview
- **Nov 19, 2025 (7–9 PM EST):** Workshop Session I
- **Dec 17, 2025 (7–9 PM EST):** Workshop Final Session – draft outline
- **Feb 18, 2026 (7–9 PM EST):** Review survey results & finalize new outline

If you are interested, please let me know by **October 7th**.

Thank you for considering this important opportunity to help shape the future of the BR examination.

Invitation to representative sample of BR credential holders to join BR Practice Analysis Panel

Hello,

On behalf of ARDMS, I am inviting you to apply to become a panelist for a practice analysis for the Breast (BR) sonography Exam. This is a great way to meet experts in the field, have **9 of your required CMEs waived***, learn about how we make the certification exam, and contribute to the field. All activities are remote!

What is a practice analysis?
A Practice Analysis is a systematic collection of data about the work you do as BR professionals. This process helps ensure that our examination accurately reflects the knowledge, skills, and abilities required for competent practice.

What are the benefits of participating in a practice analysis?

- Provides a snapshot of the profession
- Tracks trends in professional practice
- Informs other programs related to certification
- Supports credibility of the certification examination
- Creates an opportunity for stakeholder involvement
- You have a voice in developing the new certification examination content outline

Your participation is foundational to the BR examination. The work you do throughout this process will help define what is assessed, ensuring the exam remains relevant and comprehensive.

Are you interested in participating?

- Double-check all the dates and times listed below to make sure you can participate in all activities
- Fill out the short application form: https://forms.office.com/r/GYVYPAHqxc
- Application window closes on **FRIDAY, OCTOBER 17, 2025**

We will select a representative panel of 12 individuals. Those not selected else will be placed on the waitlist. Because practice analysis methodology requires the panelists to engage in thorough discussions, we will have **four (4) Zoom meetings** between now and the end of the project in December. **Your attendance is required at all the meetings**. As part of the process, you will also be asked to complete a few asynchronous tasks that will be assigned between meetings. All training will be provided.

Important Dates:

Dates/Times	Activity
November 5, 2025 7:00 – 8:00 EST	• Orientation Meeting • Outline of practice analysis procedure and timeline
November 19, 2025 7:00 – 9:00 EST	• Practice Analysis Workshop – Session I
December 17, 2025 7:00 – 9:00 EST	• Practice Analysis Workshop – Final Session • Finalize draft of content outline
February 18, 2026 7:00 – 9:00 EST	• Review field survey results • Finalize new content outline for Board approval

We look forward to working with you on this critical endeavor for the BR certification exam. If you have any questions, please reach out to Jeff Grove (Jeffrey.grove@inteleos.org).

Appendix C: Meeting Agendas

BR Practice Analysis Workshop (PAW) #1
Meeting Date: Wednesday, November 5
Meeting Time: 7:00 – 8:00 PM ET

Zoom Meeting Link:
https://inteleos.zoom.us/j/93240510884?pwd=pK68saRUYZ3aCqfIhaXNKNa2Jtr69H.1
Zoom Meeting ID: 932 4051 0884
Passcode: 470230

Time	Agenda Topics
7:00 – 7:15	Welcome + Introductions
7:15 – 7:25	Process
7:25 – 7:35	Timeline
7:35 – 7:45	Panelist Responsibilities
7:45 – 7:55	Materials
7:55 – 8:00	Meeting Wrap-up

BR Practice Analysis Workshop (PAW) #2
Meeting Date: Wednesday, November 19
Meeting Time: 7:00 – 9:00 PM ET

Zoom Meeting Link:
https://inteleos.zoom.us/j/98492145816?pwd=WRZEaNWukESZYp2Bk68pvTDhB3tc6I.1
Meeting ID: 984 9214 5816
Passcode: 696962

Time	Agenda Topics
7:00 – 7:05	Welcome
7:05 – 7:25	5 Things

7:25 –8:45	Feedback from Panel
8:45 – 9:00	Final Remarks, CME Credits, Demographic Survey

BR Practice Analysis Workshop (PAW) #3
Meeting Date: Wednesday, December 17
Meeting Time: 7:00 – 9:00 PM ET

Zoom Meeting Link:
https://inteleos.zoom.us/j/92042977062?pwd=McThssB7WE1iZ3uXbP6q2fkIsib9LR.1
Zoom Meeting ID: 920 4297 7062
Passcode: 205458

Time	Agenda Topics
7:00 – 7:10	Welcome + Recap
7:10 – 7:25	Review of Domains 1 – 4
7:25 – 8:00	Complete Task List for Domains 5 and 6
8:00 – 8:30	Review demographics questions for Field Survey
8:30 – 8:50	Next steps + timeline
8:50 – 9:00	Meeting Wrap-up

BR Practice Analysis – Final Practice Analysis Workshop (PAW) #4
Meeting Date: Wednesday, April 8, 2026
Meeting Time: 7:00 – 9:00 PM ET

Zoom Meeting Link:
https://inteleos.zoom.us/j/95177078859?pwd=MVLCWBU3UfqHUIjQokkS4QoVwlMUCb.1
Zoom Meeting ID: 951 7707 8859
Passcode: 658447

Time	Agenda Topics	Facilitator
7:00 – 7:05	Welcome + Recap	Jeff Grove
7:05 – 7:30	Review of field survey results	Sarah Pelter
7:30 – 8:15	Review of Task and Domain Weightings; Item Count and Reliability	Sarah Pelter Tyler Sandersfeld, PhD
8:15 – 8:25	Review/confirm eligibility requirements	Trish McConkey
8:25 – 8:55	Review and revise KSAs	Jeff Grove
8:55 – 9:00	Meeting Wrap-up	Jeff Grove

Appendix D: Demographic Results

Field Survey Results

Figure 1: Gender

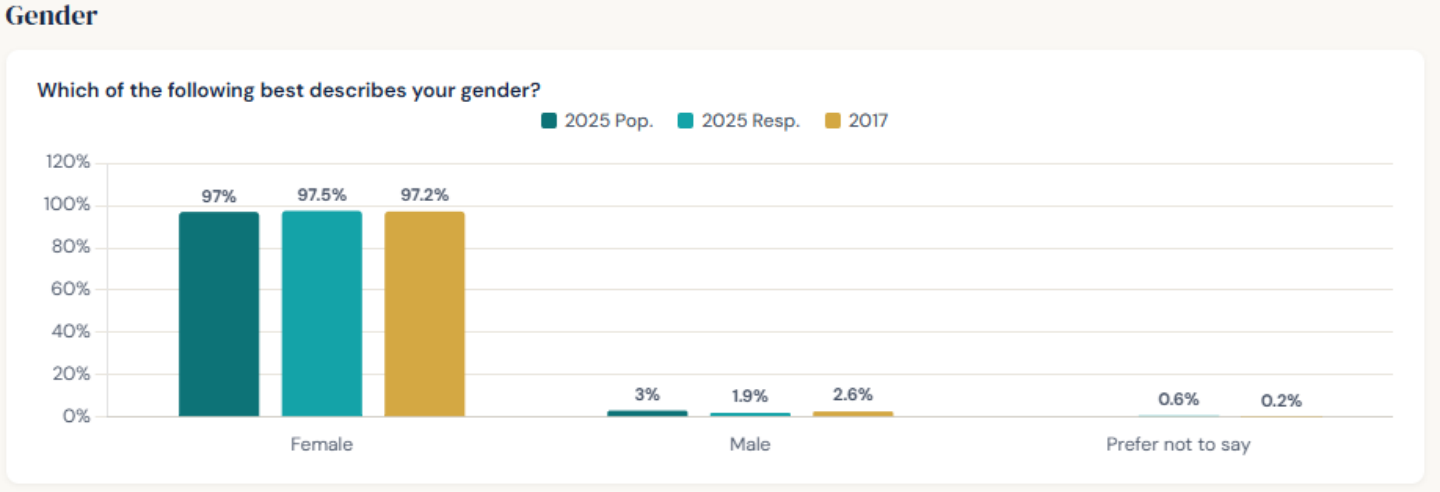


Figure 2: Racial/Ethnic Group

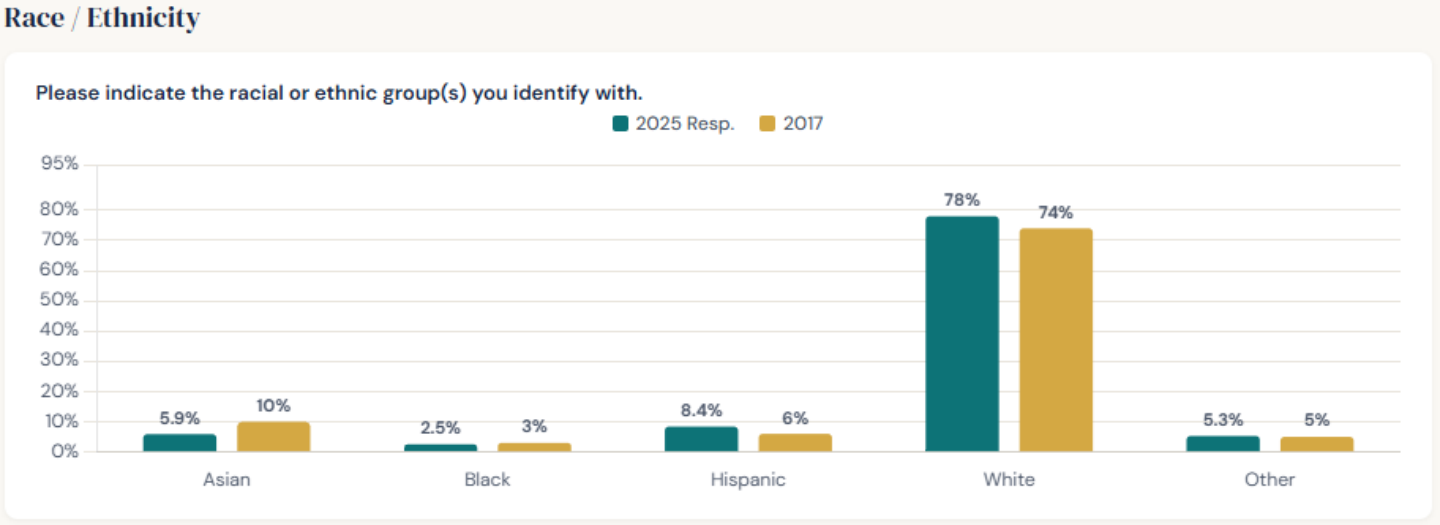


Figure 3: Country of Practice

Figure 4: U.S. Geographic Region

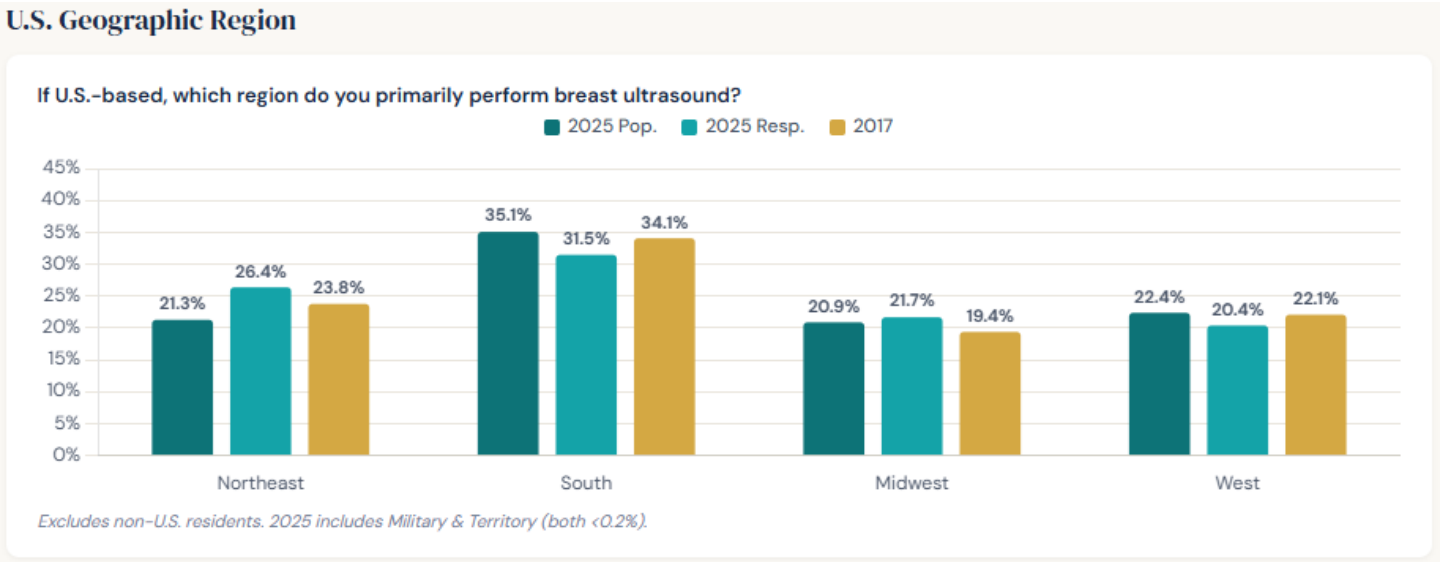


Figure 5: Education Level

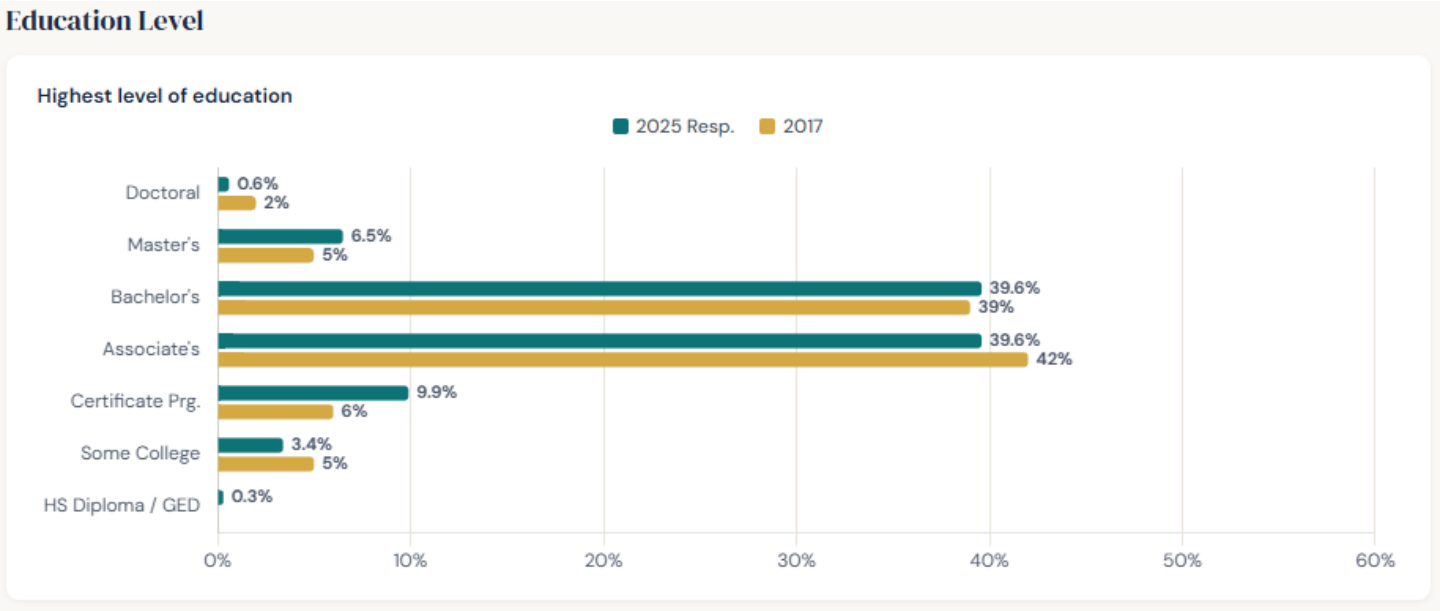


Figure 6: Sonography-Specific Education

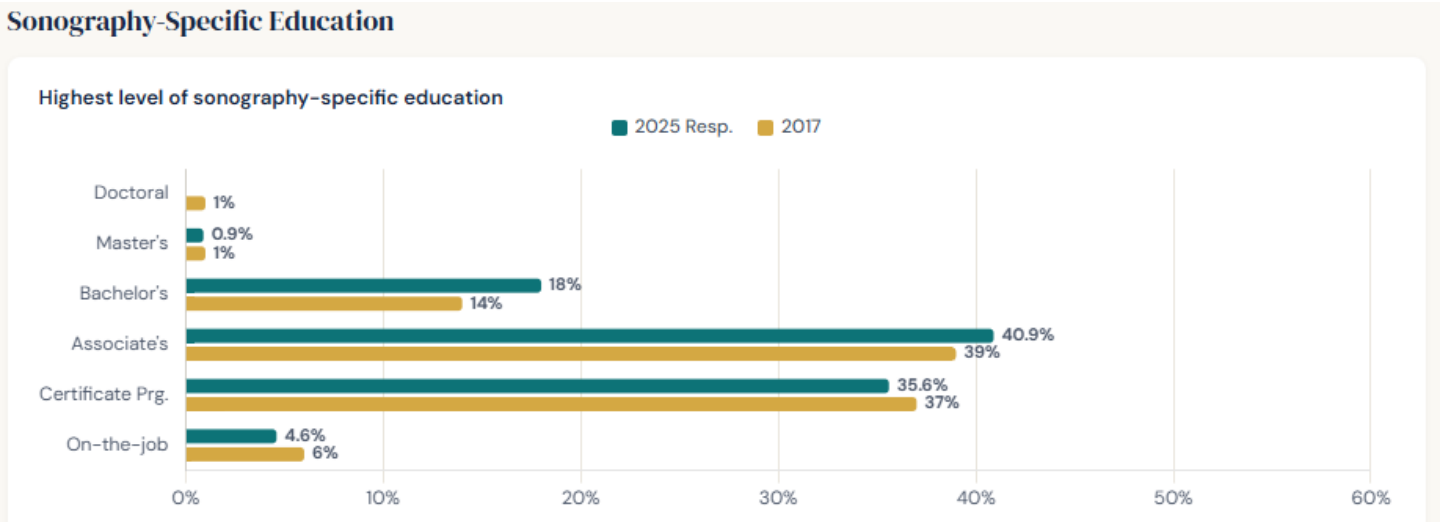


Figure 7: Country of Education

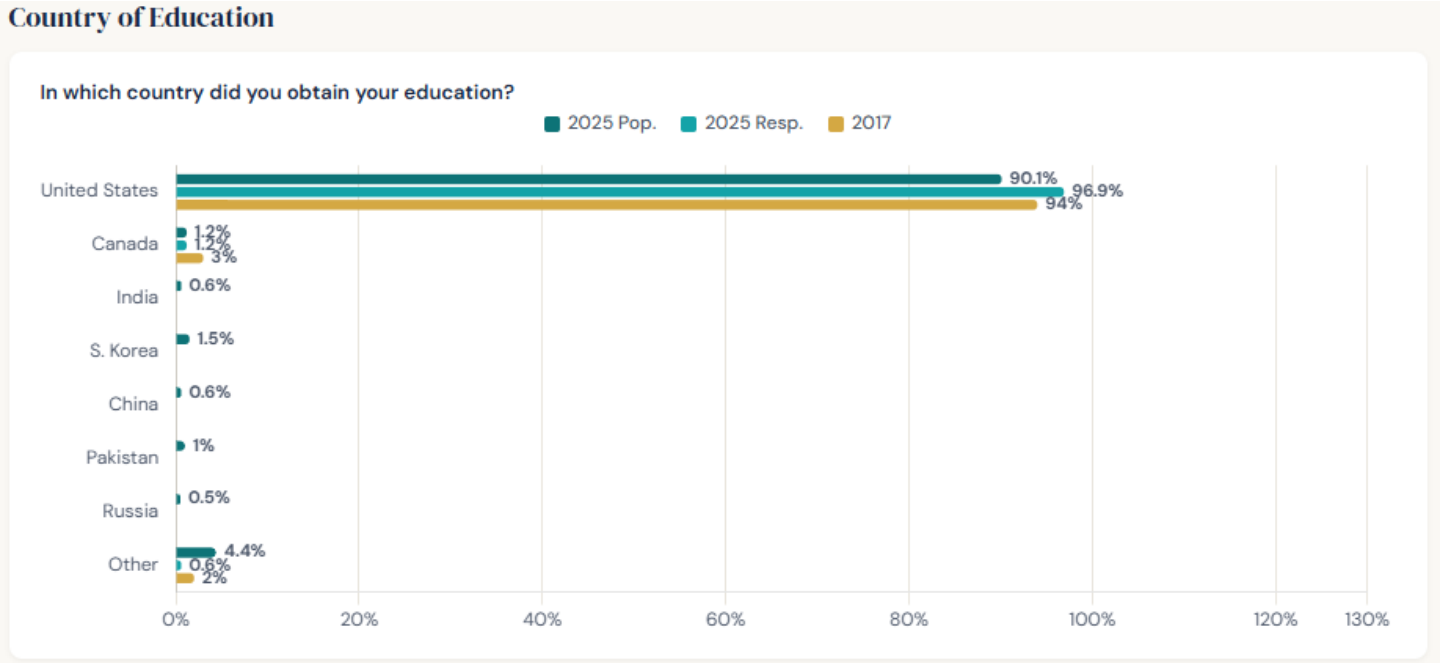


Figure 8: Continuing Education

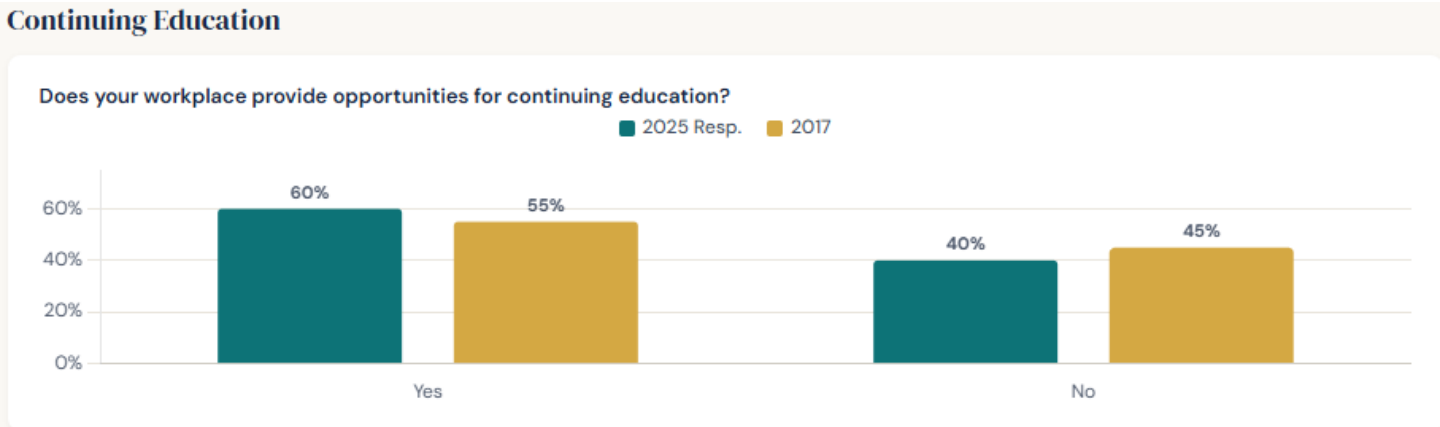


Figure 9: Sonography Educator

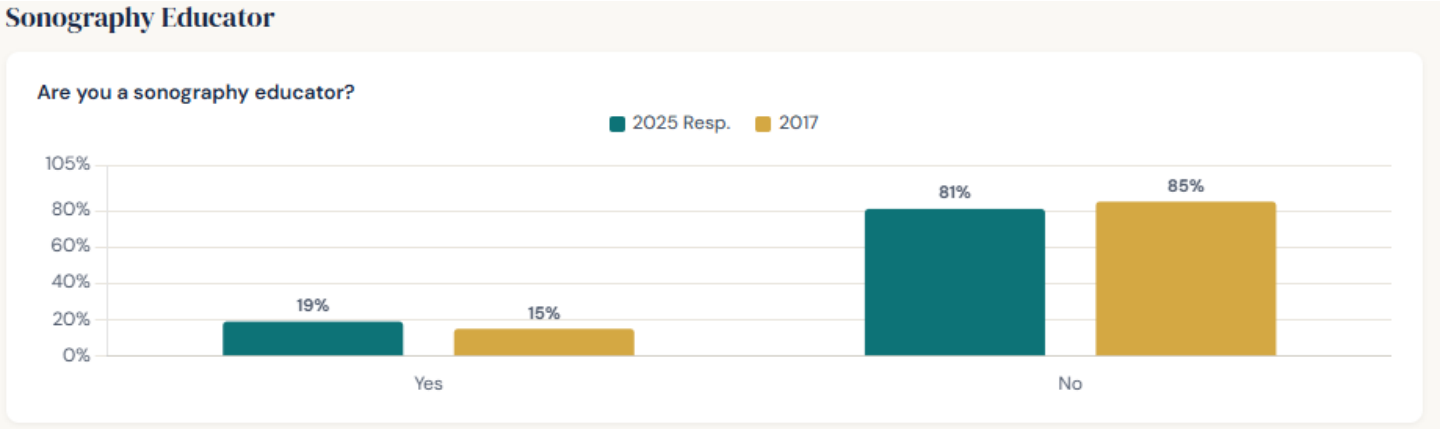


Figure 10: Years of Experience

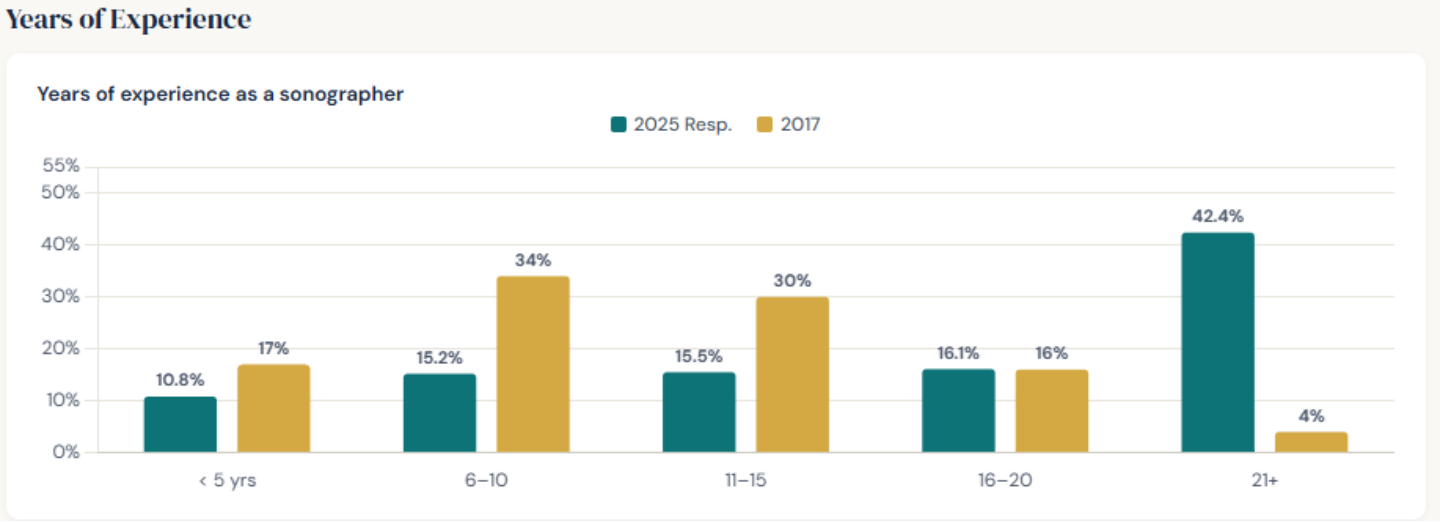


Figure 11: Mammography

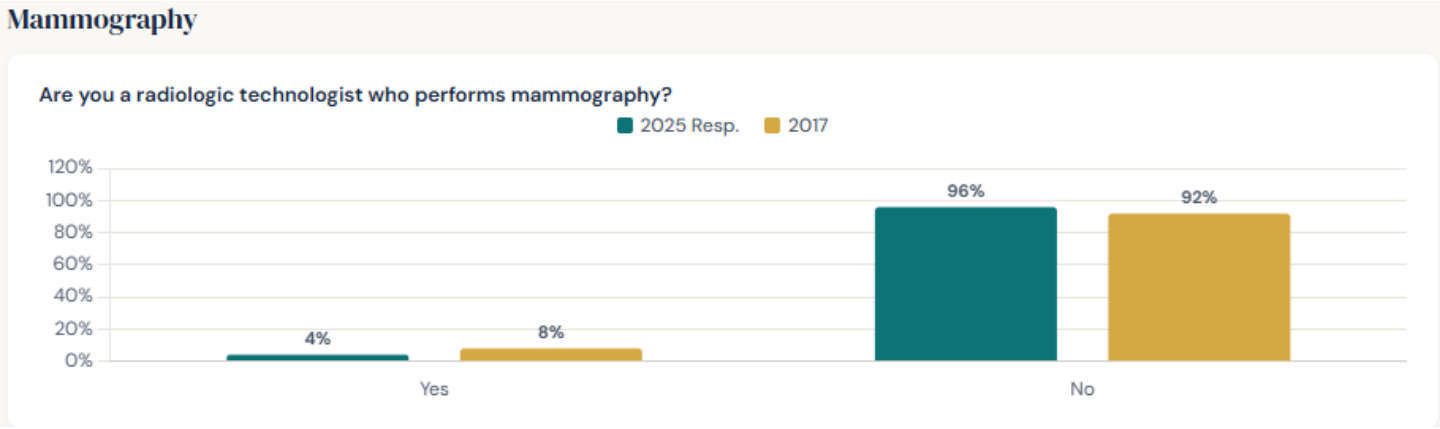


Figure 12: Monthly Exam Volume (Individual)

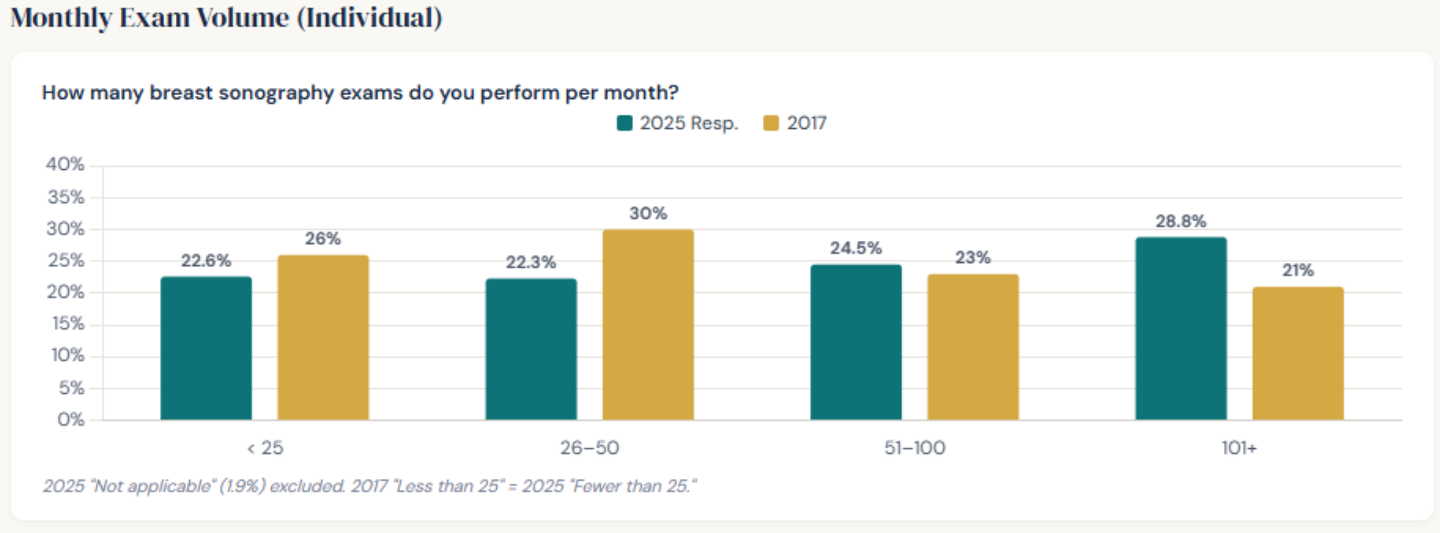


Figure 13: Work Environment

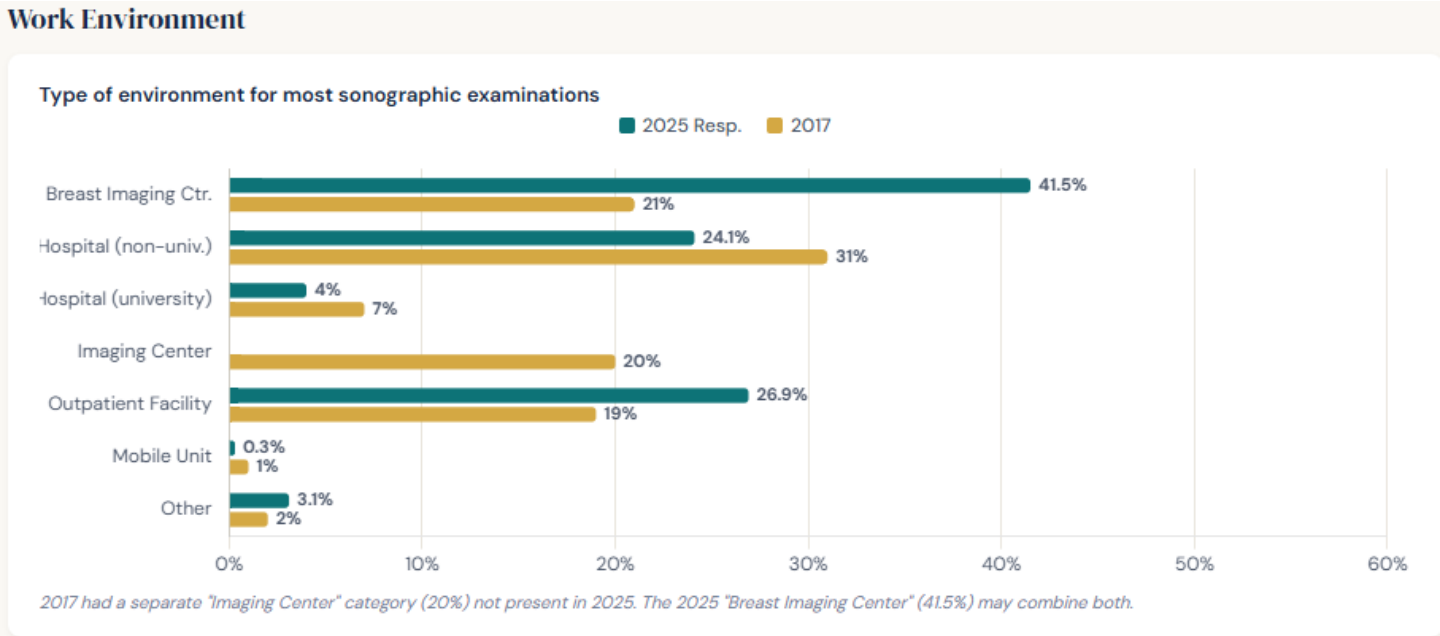
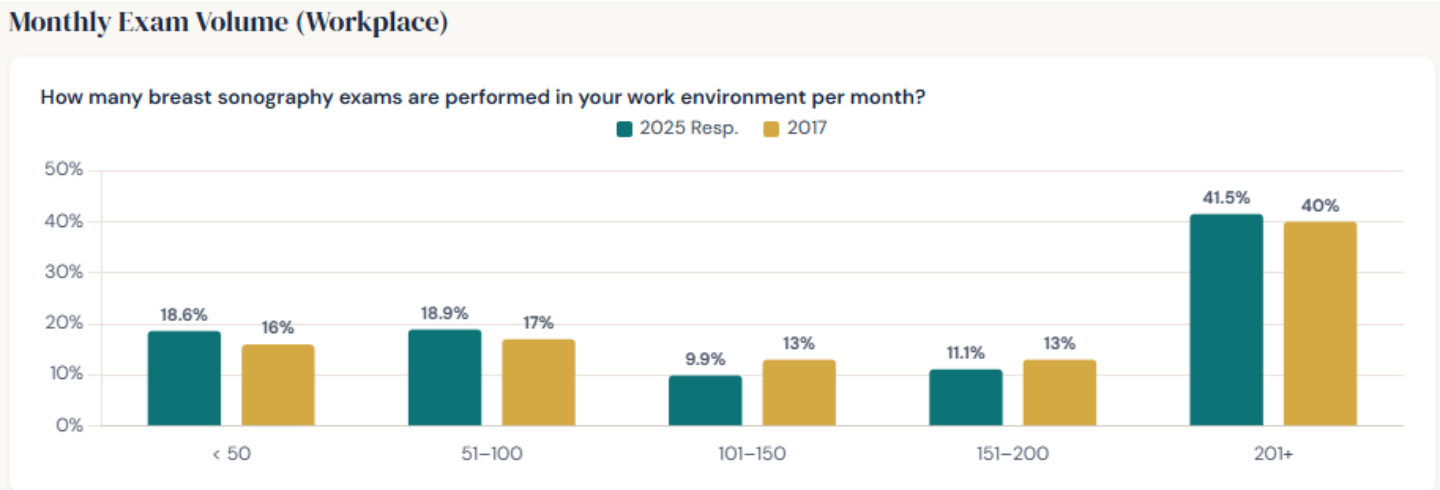


Figure 14: Monthly Exam Volume (Workplace)



Appendix E: Task Inventory, Criticality Ratings, and Panel Comments

(Note: Content code values are based on original content outline and were preserved as identifiers when referencing tasks, therefore there are some inconsistencies in order and format. They do not reflect the new content codes that will be assigned to the approved outline)

Green: Data supports keeping; Yellow: Data indicates requires review.

Content Code	Description	Importance	Comment
1. Anatomy and Physiology			
1.A	~~*Normal Anatomy and Physiology*~~		*REMOVE subdomain because there is only one*
1.A.1	Distinguish lymph nodes related to the breast	4.77	
1.A.2	Assess lymph node anatomy	4.62	
1.A.3	Identify age-related or hormonal sonographic changes of the breast tissue and its components	4.26	
1.A.4	Identify functional units of the breast (e.g., lobes, ducts)	4.33	
WI 4	Recognize anatomy of areola, nipple, axillary tail, and accessory breast tissue	4.67	Write in; Panel: KEEP.
1.A.5	~~Identify the components comprising each tissue layer of the breast~~ Identify the tissue layers of the breast and their components	4.31	Post-call edit from panel; Chair approved: CHANGE; Combine 1.A.5 and 1.A.6 to: Identify the tissue layers of the breast and their components.
1.A.6	~~Identify the tissue layers within the breast~~	4.33	Post-call edit from panel; Chair approved: REMOVE; Combine 1.A.5 and 1.A.6 to: Identify the tissue layers of the breast and their components.
WI 3	Identify anatomical structures deep to the breast	4.25	Write in; Panel: KEEP.
~~1.A.7~~	~~Identify the breast density category in the mammogram~~	4.05	Panel: REMOVE. Not scope of practice for sonographer.

2. Pathology			
2.A	*~~Abnormal perfusion and function~~*		*REMOVE both Subdomains in this domain because A only has 1 task and can be combined with B bringing it to just one subdomain*
2.A.1	Evaluate for vascularity related to a mass/lesion/ lymph node (e.g., using spectral, color, power Doppler, or emerging technology)	4.47	
2.B	*~~Benign vs. suspicious findings~~*		
2.B.1	Evaluate characteristics of infectious processes	4.67	
WI 9	Evaluate skin changes associated with malignant or benign breast pathology	4.67	Write in; Panel: KEEP.
WI 10	~~Evaluate dermal pathologies~~	4	Write in; Panel: REMOVE. Same as WI9
2.B.2	Correlate sonographic findings of lesions with the Breast Imaging Reporting and Data System (BI-RADS)	4.46	
2.B.3	Assess masses by evaluating characteristics	4.79	
2.B.4	Evaluate patterns on breast tissues that surround malignant tumors or inflammatory reactions	4.59	
WI 2	Identify architectural distortion in breast ultrasound	4.42	Write in; Panel: CHANGE- "tissue" to "ultrasound"
2.B.5	Evaluate malignant processes of the breast ~~including breast specific malignancies~~	4.65	Panel: CHANGE. "...malignant processes including breast specific malignancies" to "malignant processes of the breast" for clarity
2.B.6	~~Evaluate post-procedural/ breast trauma site for complications (e.g., seroma, hematoma, fat necrosis)~~	4.48	Post-call edit from panel; Chair approved: REMOVE; Combined 3 tasks (2.B.6, 2.B.7, and 6.B.2)into one task in domain 6: Evaluate post-procedural/breast trauma site for complications and breast tissue changes (e.g. seroma, hematoma, fat necrosis, lumpectomy, mastectomy, DIEP flap, fat injections, allograft)

2.B.7	~~Evaluate postoperative breast tissue changes (e.g. lumpectomy, mastectomy, DIEP flap, fat injections, allograft)~~	4.41	Post-call edit from panel; Chair approved: REMOVE: Combined 3 tasks (2.B.6, 2.B.7, and 6.B.2)into one task in domain 6: Evaluate post-procedural/breast trauma site for complications and breast tissue changes (e.g. seroma, hematoma, fat necrosis, lumpectomy, mastectomy, DIEP flap, fat injections, allograft)
2.B.8	Evaluate implant type, location, integrity, and complications	4.09	
2.B.9	Evaluate benign findings including benign pathologies	4.59	
WI 11	Evaluate age-related physiological changes including pediatric breast tissue	4.5	
2.B.10	Assess nipple discharge	4.5	
2.B.11	Evaluate the male breast	4.39	KEEP.
WI 12	~~Evaluate breast tissue in transgender patients with hormonal therapy~~	4.08	Write in; Panel: REMOVE. Same as 1.A.3
2.B.12	Evaluate patterns of malignant lymph nodes	4.64	
WI 6	~~Identify recent trauma, vaccinations, and tattoos~~	4.33	Write in; Panel: REMOVE. Same as WI 8
WI 8	Evaluate lymph nodes for vaccination-related, autoimmune changes, or tattoo-associated lymphadenopathy	4.5	Write in; Panel: CHANGE. Add "or tattoo-associated lymphadenopathy"
3. Integration of Data			
3.A	~~*Incorporation of outside data (e.g., clinical assessment, history and physical (H&P) examination)*~~		*REMOVE subdomain because there is only one*
3.A.1	~~Apply results/findings of the mammogram to guide scanning of the breast tissue~~	4.6	Post-call edit from panel; Chair approved: REMOVE - the same as 3.A.2
WI 1	~~Interpret mammogram images to identify breast anatomy, lesion location, and orientation~~	4.42	Write in; Panel: REMOVE. Sonographers do not interpret - and correlation of mammography is already in 3.A.2
3.A.2	Correlate ultrasound findings with mammography	4.75	

3.A.3	Correlate ultrasound findings with magnetic resonance imaging (MRI) results	4.47	
WI 14	~~Compare current images with previous procedural images for follow-up scans~~	5	Write in; Panel: REMOVE. Generic and redundant with other tasks across domain
3.A.4	Obtain pertinent clinical history from the patient and/or the medical records (e.g., risk factors)	4.63	
WI 13	~~Integrate physical examination findings with imaging~~	4.42	Write in; Panel: REMOVE. Same as 3.A.5
3.A.5	Use the patient's sign and symptoms, and/or physical examination to help optimize exam	4.01	Panel: CHANGED: to "help optimize exam" and added "and/or physical examination"
WI 7	~~Provide patient-centered care and address patient stress~~	4.5	Write in; Panel: REMOVE. Generic care tasks
4. ~~Protocols~~ Imaging Techniques and Technology			**Post-call edit from panel; Chair approved: CHANGE- Combine domains 4,5,&6. Into " Imaging Techniques and Technology. Each original domain is a subdomain. All other subdomain are removed.**
4.A	*~~Clinical standards and guidelines~~ Protocols*		*See Domain 4 note: CHANGE*
4.A.1	Evaluate the breast using various scan planes (e.g., longitudinal/transverse, radial/antiradial)	4.76	
4.A.2	Evaluate the breast using various scan techniques (e.g., automated breast ultrasound, elastography, fremitus, palpation, standoff pad, transducer pressure)	4.16	
4.A.3	Evaluate the breast with the patient in various positions ~~(e.g., oblique, supine, upright)~~	4.16	Panel: CHANGE. Delete examples to make more generalizable
WI 15	~~Position patient using positioning aids (e.g., wedge) and obtain nipple in profile~~	4.33	Write in; Panel: REMOVE. Same as 4.a.3
4.A.4	Document the breast exam using standard imaging protocols (e.g., quadrants, clockface, distance from nipple)	4.79	
4.B	*~~Measurement techniques~~*		*See Domain 4 note: REMOVE*
4.B.1	Perform various measurements to assess breast anatomy and pathology	4.69	
~~5. Ultrasound Physics~~			*See Domain 4 note: REMOVE*

5.A	*~~Artifacts~~ Ultrasound Physics*		*See Domain 4 note: CHANGE*
5.A.1	Identify common artifacts seen on breast	4.46	
5.B	*~~Hemodynamics~~*		*See Domain 4 note: REMOVE*
5.B.1	Adjust scanning technique when using Doppler	4.29	
5.C	*~~Imaging instruments~~*		*See Domain 4 note: REMOVE*
5.C.1	Adjust scanning technique to optimize b-mode imaging	4.53	
WI 17	~~Utilize harmonic imaging~~	4.17	Write in; Panel: REMOVE. Part of 5.C.1
5.C.2	Select the appropriate transducer and preset	4.75	
WI 16	~~Adjust frequency based on breast tissue density~~	4.58	Write in; Panel: REMOVE. Part of 5.C.1
	~~6. Emerging Technology and Treatment~~		*See Domain 4 note: REMOVE*
6.A	*~~Newer technologies~~ Emerging Technology and Treatment*		*See Domain 4 note: Change*
6.A.1	Understand various breast cancer treatments and its effects on follow-up imaging	3.63	Panel: CHANGE. Added "effects on follow-up imaging" to limit scope
6.A.2	Understand common methods of surgical localization	3.92	Panel: KEEP.
6.B	*~~Interventional Procedures~~*		*See Domain 4 note: REMOVE*
6.B.1	Understand the role of sonography during interventional procedures	4.31	
6.B.2	~~Understand post-procedure complications~~ Evaluate post-procedural/breast trauma site for complications and breast tissue changes (e.g. seroma, hematoma, fat necrosis, lumpectomy, mastectomy, DIEP flap, fat injections, allograft)	4.18	Post-call edit from panel; Chair approved: CHANGE Combined 3 tasks (2.B.6, 2.B.7, and 6.B.2)into one task in domain 6: Evaluate post-procedural/breast trauma site for complications and breast tissue changes (e.g. seroma, hematoma, fat necrosis, lumpectomy, mastectomy, DIEP flap, fat injections, allograft)
WI 18	~~Provide patient education before and after biopsy procedures~~	4.25	Panel: REMOVE... site dependent
WI 5	Identify biopsy markers and post-procedural markers	4.5	Panel: KEEP.

Appendix F: Final Content Outline and Task List

Breast Examination Content Outline

(Outline Summary)

#	Domain	Subdomain	Percentage
1	**Anatomy and Physiology**		**18%**
2	**Pathology**		**38%**
3	**Integration of Data**		**10%**
4	**Imaging Techniques and Technology**	• Protocols • Ultrasound Physics • Emerging Technology and Treatment	**34%**

(Detailed Outline)

1	Anatomy and Physiology 18%
1.A.1	Distinguish lymph nodes related to the breast
1.A.2	Assess lymph node anatomy
1.A.3	Identify age-related or hormonal sonographic changes of the breast tissue and its components
1.A.4	Identify functional units of the breast (e.g., lobes, ducts)
1.A.5	Recognize anatomy of areola, nipple, axillary tail, and accessory breast tissue
1.A.6	Identify the tissue layers of the breast and their components
1.A.7	Identify anatomical structures deep to the breast

2	**Pathology 38%**
2.A.1	Evaluate for vascularity related to a mass/lesion/ lymph node (e.g., using spectral, color, power Doppler, or emerging technology)
2.A.2	Evaluate characteristics of infectious processes
2.A.3	Evaluate skin changes associated with malignant or benign breast pathology
2.A.4	Correlate sonographic findings of lesions with the Breast Imaging Reporting and Data System (BI-RADS)
2.A.5	Assess masses by evaluating characteristics
2.A.6	Evaluate patterns on breast tissues that surround malignant tumors or inflammatory reactions

2.A.7	Identify architectural distortion in breast ultrasound
2.A.8	Evaluate malignant processes of the breast
2.A.9	Evaluate implant type, location, integrity, and complications
2.A.10	Evaluate benign findings including benign pathologies
2.A.11	Evaluate age-related physiological changes including pediatric breast tissue
2.A.12	Assess nipple discharge
2.A.13	Evaluate the male breast
2.A.14	Evaluate patterns of malignant lymph nodes
2.A.15	Evaluate lymph nodes for vaccination-related, autoimmune changes, or tattoo-associated lymphadenopathy
3	**Integration of Data 10%**
3.A.1	Correlate ultrasound findings with mammography
3.A.2	Correlate ultrasound findings with magnetic resonance imaging (MRI) results
3.A.3	Obtain pertinent clinical history from the patient and/or the medical records (e.g., risk factors)
3.A.4	Use the patient's sign and symptoms, and/or physical examination to help optimize exam
4	**Imaging Techniques and Technology 34%**
4.A	**Protocols**
4.A.1	Evaluate the breast using various scan planes (e.g., longitudinal/transverse, radial/antiradial)

4.A.2	Evaluate the breast using various scan techniques (e.g., automated breast ultrasound, elastography, fremitus, palpation, standoff pad, transducer pressure)
4.A.3	Evaluate the breast with the patient in various positions
4.A.4	Document the breast exam using standard imaging protocols (e.g., quadrants, clockface, distance from nipple)
4.A.5	Perform various measurements to assess breast anatomy and pathology
4.B	**Ultrasound Physics**
4.B.1	Identify common artifacts seen on breast
4.B.2	Adjust scanning technique when using Doppler
4.B.3	Adjust scanning technique to optimize b-mode imaging
4.B.4	Select the appropriate transducer and preset
4.C	**Emerging Technology and Treatment**
4.C.1	Understand various breast cancer treatments and its effects on follow-up imaging
4.C.2	Understand common methods of surgical localization
4.C.3	Understand the role of sonography during interventional procedures
4.C.4	Evaluate post-procedural/breast trauma site for complications and breast tissue changes (e.g. seroma, hematoma, fat necrosis, lumpectomy, mastectomy, DIEP flap, fat injections, allograft)
4.C.5	Identify biopsy markers and post-procedural markers

Knowledge, Skills, and Abilities: *The following is a list of the foundational knowledge, skills, and abilities required to complete the tasks listed in the content outline.*
Knowledge of breast anatomy, including tissue layers, functional units (lobes, ducts), areola, nipple, axillary tail, accessory tissue, and structures deep to the breast.
Knowledge of lymph node anatomy related to the breast and expected sonographic appearance.
Knowledge of benign and malignant breast pathology and disease processes, including normal vs abnormal sonographic appearances.
Knowledge of BIRADS and ACR breast imaging standards and ability to apply standardized terminology when describing sonographic findings.
Understanding of expected and abnormal postprocedural and posttreatment findings (e.g., surgery, biopsy, trauma, reconstruction, implants).

Knowledge of the sonographer's role in breast related interventional procedures and treatments, including preparation, sterile technique, and postprocedural assessment.
Ability to sonographically distinguish normal vs abnormal lymph nodes.
Ability to recognize age-related and hormonal sonographic changes of the breast tissue and its components.
Ability to distinguish between benign and malignant sonographic features of breast lesions and lymph nodes.
Ability to evaluate vascularity of a mass, lesion, or lymph node using Doppler and related techniques.
Ability to recognize and document architectural distortion, surrounding tissue patterns, and skin changes associated with benign and malignant processes.
Ability to correlate sonographic findings with mammography, MRI, and other prior imaging to guide targeted breast ultrasound.
Ability to relate patient history, signs and symptoms, and physical examination findings to imaging data to optimize the exam.
Ability to provide clear, accurate documentation that supports radiologist interpretation and diagnostic decision-making.
Ability to perform diagnostic breast ultrasound using appropriate scan planes, techniques, and patient positioning to fully evaluate breast anatomy and pathology.

Appendix G: RDMS Eligibility and Practice Analysis Review

RDMS (BR), RDCS, and RVT, Eligibility & Practice Analysis Review

Charge of the Practice Analysis Working Group

1. Review the Practice Analysis (general and technical competencies)
2. Review the Current Eligibility criteria (ensure eligibility supports quality assurance in certification)
3. Determine if there are any gaps in the Eligibility criteria based on the practice analysis. If so, please outline them for review by the Eligibility Task Force.
4. Confirm that the current prerequisites:
    a. Include the appropriate training, professional experience, and education that are required to be considered minimally competent in Breast ultrasound.
    b. Include pathways for all individuals/groups that should be eligible.

Basic Concepts

Eligibility requirements are as critical to the certification process as the examination itself. The eligibility requirements, examination, and Maintenance of Certification (MOC) components comprise a certification program.

Requirements should be reasonable and minimally stringent and must not exclude qualified candidates.

Requirements should evaluate the ability to competently practice in the specialty area. They should reflect the current status of professional practice (i.e., what is, not what should be) based on the practice analysis.

There should be documented rationale for each new requirement.

It is advisable to permit multiple routes to achieving eligibility, wherever appropriate (e.g., additional professional experience accepted in lieu of a primary medical specialty board).

Grandfathering, i.e., earning the credential without meeting eligibility and passing the examination is not permitted.

Wednesday, April 8, 2026: Panel Comments/Discussion

Breast Practice Analysis Panelist Name	In Attendance
Alka Sandhu (Chair)	
Dr. Kimberly Michael (Vice-Chair)	
Anastasia Tracy	X
Farah Farooqi	
Katelyn Connolly	X
Kathryn Holecek	X
Kelly Warren	X
Manal Abdelhady	X
Robin Taheri	X
Sarah Moylan	X
Tara Bartholomay	
Yoonhee McAuliffe	X

The above noted confirm that the current prerequisites:

- Include the appropriate training, professional experience, and education that are required to be considered minimally competent in Breast ultrasound.
- Include pathways for all individuals/groups that should be eligible.