



Staff Shortages in Breast Imaging: Where Do We Go From Here?

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Organizations across the country have suffered from staffing challenges during the past couple of years. It is no surprise that breast imaging teams have also felt this strain. This situation is largely due to the COVID-19 pandemic, which has contributed to retention problems, burnout, overwhelming workloads, and departure of senior staff. Staffing shortages have led to unprecedented employee disengagement and burnout, potentially negatively impacting image quality and access to breast imaging services. Now more than ever, it is essential that we focus on maintaining healthy work environments to optimize image quality and access for breast health examinations.

Prior to the challenges brought about by the COVID-19 pandemic, the *American Journal of Roentgenology* published a study aimed at developing forecasts for the future supply of radiologists and mammography technologists.¹ The study included basic mammography workforce statistics to provide context for these forecasts using an age cohort flow model based on data from the ACR and American Society of Radiologic Technologists (ASRT). At that time, concerns about future workforce adequacy prevailed. Forecasts showed that rates of production of new mammography professionals would result in a significant reduction in mammography professionals between 2009 and 2025. The supply of radiologic technologists was forecasted to decline approximately 22% by 2025. The number of radiologic technologists per 1000 women over age 40 years was forecasted to decline by 23% by 2015 and decline again by 40% by 2025. In 2022, it is alarming to observe the accuracy of these forecasts created before the pandemic.

Area Health Education Center (AHEC) recognized that staffing shortages are being reported in many different ways on the internet and social media outlets.² To assess the staff shortage of radiologic technologists within imaging departments, AHEC surveyed participants from 34 states. The survey results showed the following:

- 81% of facilities were experiencing staffing shortages.
- 35% of the total positions not filled were within the mammography modality.
- 49% of participants reported that their imaging departments were still maintaining regular schedules.
- 74% did not change imaging service delivery.
- 56% of facilities were authorizing overtime to cope with the shortage.



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- 57% of participants stated that heavy workloads and staff burnout were factors that contributed to the shortage.
- 30% of the facilities were receiving applications for the open positions.

Hadley conducted a similar survey in 2022 to assess staff shortages specific to breast imaging departments (unpublished). Despite the limitations in the number of responses, the Mammography Technologist Workforce online survey targeting breast imaging professionals reported similar results:

- 72% of facilities were experiencing staffing shortages.
- 71% were still maintaining regular schedules.
- 66% did not change imaging service delivery.
- 29% of facilities were authorizing overtime to cope with the shortage and 45% reported no changes made.
- Over 50% of participants stated that staff burnout and staff retirement were factors that contributed to the shortage.
- 23% of the facilities were receiving applications for the open positions.
- 39% of respondents reported considering leaving the profession or moving to a new modality.

While both surveys reported similar results, Hadley's survey revealed that a startling 39% of participants considered leaving their career in the breast imaging profession. Additionally, in 2019, the ASRT reported that departments were understaffed by 5.6% in mammography before the COVID-19 pandemic.³ Given the stressed prepandemic working environment, the current breast imaging workplace is in a critical state. Nonetheless, optimism and promise can be found in the remaining 61% who reported a desire to remain in the profession.

Effects of Staff Shortages on Image Quality

Decreased resources and pressure to maintain overloaded schedules can lead to a breakdown in image quality. When inadequate time is provided to complete examinations, staff members may subconsciously submit images of inadequate quality. Research examining mammographic positioning identified five factors contributing to inadequate breast positioning⁴ and technical recall rates⁵:

1. Reluctance to repeat images of suboptimal quality because of insufficient time, increased radiation dose, patient reluctance, and difficulty explaining the procedure to the patient (Figures 1 and 2)

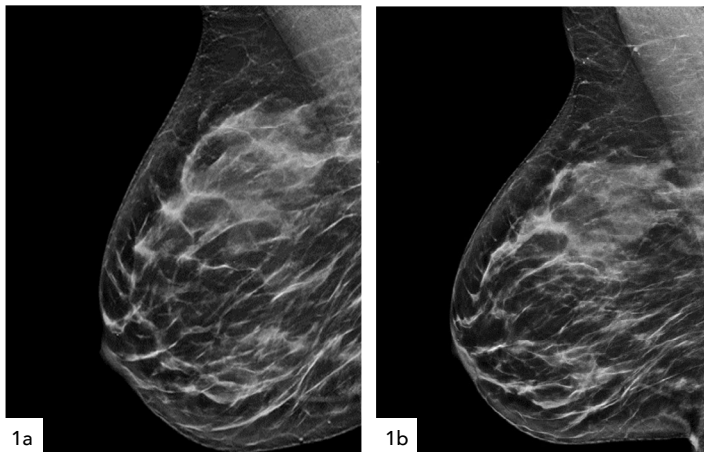


Figure 1. Right mediolateral oblique image of suboptimal quality because of reluctance to repeat (A). Repeated right mediolateral oblique image with improved image quality (B).

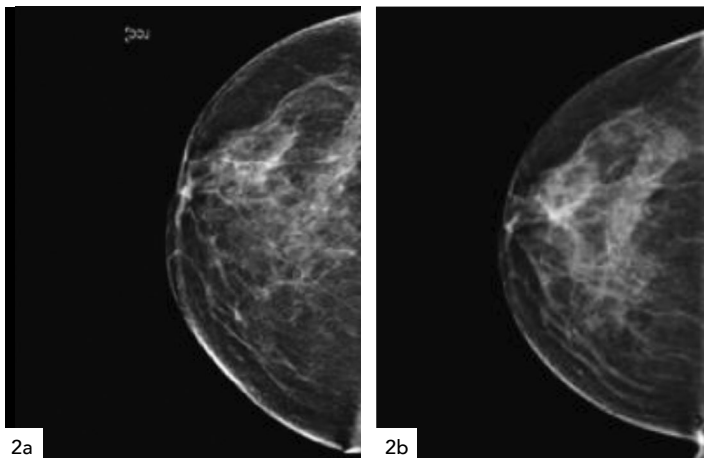


Figure 2. Right craniocaudal image of suboptimal quality because of reluctance to repeat (A). Repeated right craniocaudal image with improved image quality (B).

2. Difficulty with challenging patient circumstances such as patient physical limitations, patient discomfort, and fear
3. Inconsistencies in image evaluation and analysis due to subtlety or disagreement of criteria, no standardized positioning training, and insufficient new hire training
4. Insufficient time for patient care as a result of limited examination time and room resources, along with repeat examinations and images requiring added time
5. Lack of technologist engagement in building connections with their work and patients, low accountability, and stressful environment

It is evident that sufficient time for patient care is essential since insufficient time allotted for patient care leads to poor image quality. Adequate professional education and training improves the technologist's examination proficiency, image evaluation skills, and quick, efficient troubleshooting abilities. Continuing hands-on education and routine skill development are essential and should be important aspects of all imaging departments. This type of continuing education can help ensure that staff remain engaged and confident, which can extend assurance to primary care providers, patients, and interpreting radiologists.

Staffing Supply and Healthy Workplace System Resources

Educational Institutions and Mentorship

Working with local educational institutions by offering career-shadowing opportunities can be an excellent way to draw prospective new graduates into your facility. Promoting the profession at career and job fairs locally can also attract potential technologist candidates. In addition, mentorship programs can increase supply and interest in the field and can be important to one's success.

The ACR recognizes mentorship programs as a tool to promote well-being and reduce burnout. Although the ACR's well-being programs were created directly to reduce the impact of burnout on breast radiologists, many of these tools for mentorship and well-being can be modified to implement a practice for technologists and other imaging staff as well.⁶

Workflow Efficiency and Communication

Identifying inefficient workflow processes provides an opportunity for team members to work together to redesign processes that improve efficiency and ease of everyday tasks. Searching for methods of effective communication is key to continuous workflow efficiency and ensuring that staff members are able to relay ideas and be heard.

Artificial Intelligence

Artificial intelligence (AI) is gaining a significant amount of attention from breast radiologists for earlier cancer detection. However, from a technologist's perspective, there is also value in implementing an AI program to ease the burden of image quality assessment while decreasing subjectivity. Time spent assessing images can be decreased because AI systems can help troubleshoot and assess issues associated with image quality. Breast imaging professionals can use this saved time to focus on exceptional patient experiences.

Retention and Well-being of Imaging Personnel

Retention of breast imaging staff is essential to increasing and maintaining access to lifesaving screening services. It is critical that breast imaging organizations place more emphasis on technologist retention and engagement. Technologists are the first line of contact with patients and act as liaisons between radiologists and patients. A higher perceived level of care will likely follow when technologists are able to build connections with patients through engaging conversation and effective patient care. With higher levels of burnout and stress in the imaging department,⁷ creating a peer-led wellness curriculum based on team needs can be an effective method to

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improve well-being and combat low engagement.⁸ Four key factors of wellness can be used as pillars for improving well-being and engagement in the workplace:

1. Physical well-being
 - a. Take a break: As challenging as it may be to step away from the department when work is piling up, taking a break even for a few minutes can ensure higher levels of focus. Encourage technologists to take breaks throughout the day or eat their lunch outside the department.
 - b. Activities: Take a few moments throughout the day to practice physical and wellness activities to promote a more serene and focused work environment. Physical activities may include short walks out of the department, stretching, or deep breathing exercises.
2. Emotional well-being
 - a. Gratitude: Gratitude practices and personal connections are excellent means for improving departmental resilience and extending compassionate levels of appreciation to colleagues.
 - b. Activities: Supply cards for handwritten thank-you notes and encourage your team to use them. Creating a gratitude board that all can contribute to is an easy way to promote sociability. Encourage more personal conversations among your team and take note of each other's well-being.
3. Intellectual well-being
 - a. Creativity: Considering the intellectual demands placed upon individuals in the workplace, intellectual well-being remains most valuable when viewed creatively. Explore avenues that stimulate creativity and critical thinking while developing knowledge and skill sets.
 - b. Activities: Read articles on new technology, stay current with legislation that affects screening mammography, register for a class or training session on a topic of interest, or read for pleasure.
4. Spiritual well-being
 - a. Connection: Workplace spirituality thrives when individuals are able to experience connection to something larger than themselves and find meaningfulness and purpose while working.
 - b. Activities: Stay positive and connect work to values. The time given to serve others should be carefully balanced with personal time. Spend quiet time in reflection and learn to find value in silence through meditation and disconnection from technology.

With staff burnout at an all-time high, dedicating time and resources to creating a breast imaging team that is engaged and resilient is more important than ever. Revisiting scheduling templates to provide efficient durations for high-quality examinations will increase both patient and employee satisfaction. To maintain adequate access to breast health services and high-quality imaging, it is essential for imaging departments to prioritize retention, wellness, and the

well-being of all team members. These efforts will help organizations navigate through the challenges of burnout and staffing shortages.

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this role for many years.³ Additionally, the ACR has hired a specific government relations staff member, Dillon Harp, to focus on state advocacy and legislative issues, particularly scope of practice. Dillon joins with a wealth of experience and has already proven himself an integral part of the team.

In an increasingly competitive and passionate health care environment, radiology political advocacy is imperative, now more than ever. It will take a concerted effort from all in the house of radiology, regardless of practice type, to contend with the many challenges that will be facing us, including reimbursement and, most importantly, equitable access to care for our patients. The days of being siloed and not being actively involved are over. We must all rise to ensure a stable and prosperous tomorrow. The future is now. So please join us as we enter this new chapter of radiology political advocacy to ensure a brighter tomorrow for our patients and profession.

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