

Developing an Imaging Workforce Pipeline Through an Imaging Trainee Assistant Program

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The COVID-19 pandemic has transformed the world, with 1 in 5 health care professionals abandoning the industry.¹ The University of Texas Southwestern (UTSW) Medical Center is experiencing a similar detrimental effect, particularly concerning radiologic technologists, the third largest group of medical professionals.² According to a recent study by Nightingale et al, the physical demands, continual workload, lack of flexible work schedules, and limited professional advancement prospects are some of the reasons radiologic technologists are abandoning the profession.³

According to Fitch, labor market costs also are accelerating exponentially.⁴ Despite receiving authorization to adjust hourly pay scales and extend hiring bonuses, these modifications become outdated by the time they are posted. The competition is tremendous, with other health care systems looking for alternatives in a worker's market.

Additional job opportunities for radiologic technologists include travel jobs with lucrative hourly rates and 13-week contracts. Health care competition has resulted in sign-on bonuses for new and experienced radiologic technologists ranging from \$10 000 to \$20 000.⁵ At UTSW Medical Center, the new labor dynamics have made competing for a diminishing radiologic technology workforce challenging.

With 10 000 baby boomers reaching age 65 years, the need to hire radiologic technologists is vital to

keep up with their care.⁶ The combination of a surging aging population, a depleted radiologic technologist talent pool, and the need to act now compelled UTSW Medical Center to develop an innovative pilot strategy to generate a sustainable diagnostic imaging workforce pipeline.

Initial Brainstorming

UTSW Medical Center offers clinical placements to various health care professionals, including radiologic technologists. Consequently, UTSW Medical Center was in an advantageous position to be innovative. There was a need for a new program to build a pipeline for radiologic science students to train alongside radiologic technologists, which would acclimate them to organizational systems, wayfinding, culture, and relationships.

The academic environment served as the backdrop for the inception of a pilot program to recruit students before graduation, preempting their job search or potential recruitment by other organizations. This endeavor culminated in establishing a new imaging trainee assistant program (see **Figure**).

Identifying student technologists, recruiting them, and transitioning them to licensed professionals were vital in the workforce pipeline solution.⁷ By proactively engaging with radiologic science students before their graduation and potential employment by competitors, UTSW Medical Center aimed to gain a strategic advantage in the field.

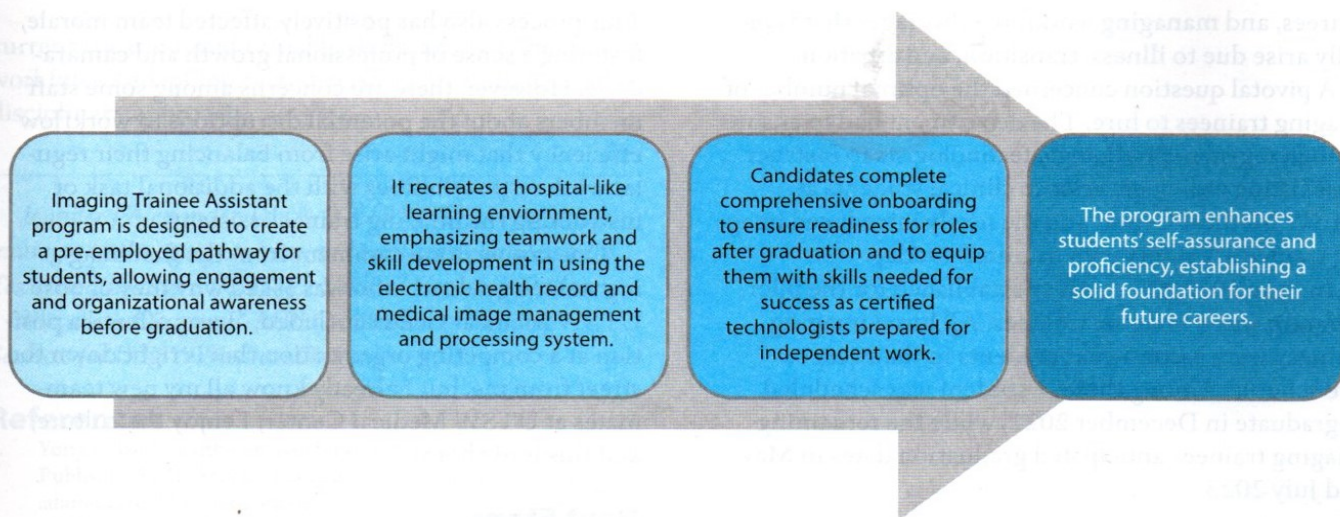


Figure. Imaging trainee assistant program design. Figure courtesy of the authors.

Day-to-day activities include enterprise skill development with electronic health records, medical image management and processing system (MIMPS [formerly PACS]), learning management systems, mentoring, and enterprise software. Proficiency in positioning and clinical knowledge, curated under supervision, creates an atmosphere of self-assurance. In addition, observations in highly technical areas, which are challenging to recruit for, like interventional radiology and hybrid operating rooms, address the challenges associated with recruiting for these specialized roles.

Creating a job description was essential because these were not students but trainees. Specific language was adopted to incorporate current enrollment in a radiologic science education program and an expected termination of the trainee position within 60 days after program completion. The 60-day postgraduation timeline was used to allow time for passing the certification exam and registration. In addition, this timeline allowed the imaging trainee to work up to full-time hours with a registered technologist after graduation and to continue developing their craft until credentialed. The new position description included a comparable pay scale to entry-level frontline employees, and determined the role's reporting structure, onboarding, and training.

Determining how many hours the imaging trainee should work per week was critical. There was a delicate

balance between the imaging trainee's work, classes, clinical rotations, and family time. The position was established with an as-needed (PRN) status, allowing for flexibility in the number and duration of shifts, which might increase or decrease as necessary.

To facilitate knowledge retention, trainee assistants were scheduled for a minimum of 2 days per week, for at least 4 hours per day, with allowances for adjustments. Unanticipated hurdles included onboarding times and preparing imaging trainees who had never worked with the intricacies of new job standards, such as I-9 forms, and the time-sensitive deadline for providing hiring documentation to UTSW Medical Center.

Implementation

In 6 weeks, a new position, known as the *imaging trainee assistant*, was established to encompass 5 distinct imaging modalities: computed tomography (CT), magnetic resonance (MR) imaging, sonography, nuclear medicine technology, and radiography. The pool of applicants vying for the original 8 slots came from staff recommendations, current clinical students, and candidates from the local colleges. Despite the additional workload of teaching the imaging trainees, the long-term goal was to create a better solution to aid the existing teams in mitigating burnout, replacing

retirees, and managing workforce shortages that typically arise due to illness, transition, and attrition.

A pivotal question concerned the optimal number of imaging trainees to hire. The department had to ensure enough registered radiologic technologists to instruct the existing radiologic science clinical students at UTSW Medical Center and the newly introduced imaging trainee assistants with minimal overlap.

In June 2022, the number established for the pilot program was 8 imaging trainees. All hired imaging trainees were second-year students in their respective schools. Among these, 1 student was scheduled to graduate in December 2022, while the remaining imaging trainees anticipated graduation dates in May and July 2023.

Results

Initially, 2 positions were vacated during the first 6 months because of employment requirements and scheduling limitations. However, they were quickly filled by 2 additional applicants. A third student applied when the first graduate from the imaging trainee assistant program passed the radiography certification exam and was hired to work a much-needed night shift.

As the imaging trainees graduated and became registered radiologic technologists, the department reposted the imaging trainee positions to continue the program. As of February 2024, among 25 trainees, there are:

- 10 currently in the program
- 2 hired full-time (1 night shift and 1 day shift)
- 5 hired as PRN
- 4 hired who did not complete the program because of onboarding requirements and time management
- 4 who completed the program but were hired by other organizations

Feedback

Staff engagement is key in making these programs a success. Check-ins and one-on-one meetings with the teams are vital. Staff feedback regarding mentoring the imaging training assistants alongside their regular duties has been mainly positive, with many staff members embracing the opportunity to mentor an imaging trainee assistant as a valuable teaching experience.

This process also has positively affected team morale, fostering a sense of professional growth and camaraderie. However, there are concerns among some staff members about the potential disruptions to workflow efficiency that might arise from balancing their regular work responsibilities with the additional task of instructing the imaging trainee assistants.

One cornerstone comment from the first imaging trainee graduate who was asked why they choose UTSW Medical Center included, "I was offered a position at a competing organization that is right down the street from me, but I already know all my new teammates at UTSW Medical Center; I enjoy the culture, and this is my home."

Next Steps

UTSW Medical Center developed and initiated 2 additional pilot programs to provide further growth opportunities for employees. First, the MR imaging apprenticeship program was started in collaboration with Dallas College, the U.S. Department of Labor, and the Tesla MRI Institute, in January 2023 and aims to increase the number of new MR technologists. The apprenticeship is a paid internship and takes 12-14 months for completion. As of February 2024, the first cohort has a 100% pass rate; the second cohort started in January 2024.

Second, the Advanced Fellowship program, which launched in July 2023, involves cross-training current diagnostic radiographers to become registered CT technologists. It is a 12-month program in which candidates rotate weekly between radiography and CT. As of February 2024, 1 student has completed the program and been hired for an open full-time night shift in CT.

Conclusion

Career advancement and growth is linked to job satisfaction in radiologic technology. UTSW Medical Center has taken steps in expanding its imaging workforce by providing opportunities for imaging trainee assistants and has developed pilot programs for MR and CT technologists. These additional initiatives will equip UTSW Medical Center employees with opportunities to continue to grow outside of their

current vocation, add valuable skills, and enhance the workforce's adaptability and versatility through a multidisciplinary approach.

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References

1. Yong E. Why health-care workers are quitting in droves. Published 2021. Accessed January 29, 2023. <https://www.alamedahealthsystem.org/wp-content/uploads/2022/04/2022-04-13-BOT-A-Officers-Report-COMBINED.pdf>
2. American Registry of Radiologic Technologists. What do radiologic technologists do? Accessed January 11, 2023 <https://www.arrt.org/pages/about-the-profession/learn-about-the-profession/what-do-radiologic-technologists-do>
3. Nightingale J, Sevens T, Appleyard R, Campbell S, Burton M. Retention of radiographers in the NHS: influencing factors across the career trajectory. *Radiography (Lond)*. 2023;29(1):76-83.
4. Halleman S. Nonprofit hospitals, hammered by soaring expenses, have 'deteriorating' outlook: Fitch. Healthcare Dive. Published January 11, 2023. Accessed January 11, 2023. <https://www.healthcaredive.com/news/nonprofit-hospitals-hammered-by-soaring-expenses-have-deteriorating-out/640214/>
5. Lehigh Valley Health Network. Radiology tech - new competitive wages! \$20k sign on bonus! Salary. Published 2023. Accessed January 11, 2023. <https://www.salary.com/job/lehigh-valley-health-network/radiology-tech-new-competitive-wages-20k-sign-on-bonus/j202208241415569188283>
6. Song Z, Ferris TG. Baby Boomers and beds: a demographic challenge for the ages. *J Gen Intern Med*. 2018;33(3):367-369. doi:10.1007/s11606-017-4257-x
7. Nightingale J, McNamara J, Posnett J. Challenges in recruitment and retention: securing the therapeutic radiography workforce of the future. *Radiography (Lond)*. 2019;25(1):1-3. doi:10.1016/j.radi.2018.12.006



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