The MRI Dilemma

Exploring the Impact of Technician Shortages

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INTRODUCTION

- MRI- Magnetic Resonance Imagine; a large, tube-shaped machine that uses strong magnetic fields and radio waves to create imagines of the inside of the body
- The commonly used MRI machines are the 1.5 Tesla (T) and the 3.0 Tesla
    - Other types of MRI machines include the open MRI, closed MRI, wide-bore MRI, and the upright MRI
- The main difference between the 1.5 T and the 3.0 T is the strength of the magnet; the 3.0 T has twice the magnetic strength and speed, as well as producing higher quality images
- MRI machines contain LP, or Linearly Polarized coils
    - Their purpose is to excite or detect electromagnetic fields and have a singular channel direction
    - There are many different coils used depending on which body part is being scanned, consisting of head, surface, volume, extremity, body, breast and cardiac coils
- Education/ Requirements for the position:
    1. An accredited Associates/ Bachelor's degree in MRI technology or a related field (example: radiography)
    2. A certification exam (most common is from the American Registry of Radiologic Technologists (ARRT))
    3. Receive your Massachusetts Radiologic Technologist License
    4. Clinical rotations in MRI facilities
        - You must renew your license every 2 years

OBJECTIVES

- To perform interviews of staff operating in the MRI department and research reasonings for the shortage of MRI technologists

RELATED LITERATURE

- "Delays in initial screenings cause delays in follow-up care, such as additional imaging, biopsies and consultations with specialists… This can negatively affect patient outcomes, especially if cancer progresses during the waiting period." (Yan Chen, 2024, para. 4)
- "Survey data suggest that burnout, including emotional exhaustion and feeling underappreciated at work, are pervasive problems among medical imaging and radiation therapy professionals. More than half of all respondents (53.7%) reported feeling emotionally exhausted at least a few times each month, and an even larger percentage (56.9%) said they felt underappreciated on the job at least a few times each month" (ASRT, 2024, page 8)

MATERIALS & METHODS

- Reviewed recent articles relating to the MRI technologist shortage
- Discussed the issue with fellow staff and supervisor at the locations I worked for my internship, including:
    - What the problem is
    - What are some factors contributing to it?
    - What will help to remedy the issue?
- Interviewed a new MRI technologist and the MRI Supervisor at my internship location

1.
- What trends have you observed regarding the demand for MRI technologists in recent years?
- How has this shortage affected your facility's operations?

2.
- What factors do you believe are contributing most to the shortage of MRI technologists?
- Are there challenges specific to your region or type of institution?

3.
- How has this shortage impacted patient care and scheduling?
- What challenges does it create for existing staff?

4.
- What strategies have been most effective in retaining MRI technologists?
- How do you approach recruiting new technologists?

5.
- Are there sufficient training programs available, and do they meet current demands?
- How could the education pipeline be improved to address the shortage?

6.
- What long-term solutions do you envision for addressing this shortage?
- How might advancements in MRI technology affect the demand for technologists?

7.
- What role should healthcare policies or professional organizations play in resolving this issue?
- How can facilities better support MRI technologists to prevent burnout and turnover?

RESULTS

- After surveying my research from articles and my interviews of the staff, it appeared that the reasons for the shortage are due to the following:
    - Lack of interest/ motivation to go into the field (following the pandemic)
    - Aging workforce (turnover is great)
    - Workload is too great (due to understaffing)
- "The perception that healthcare in general is a very tough field… they saw on TV what nurses were going through in the pandemic, it's physically and mentally demanding, and people aren't going into it." (Rosato, 2024)

CONCLUSIONS

- The focal point of this project was to assess the MRI technologist shortage and develop ideas and recommendations for companies and organizations to aid in this issue.
- The shortage of MRI technologists presents a critical challenge to healthcare delivery, with significant implications for patient care and diagnostic efficiency. Some recommendations to aid this issue are as follows:
    - Offer flexible hours
    - Allow technologists to create their work schedules
    - Perform salary analysis (comparative to other competitors)
    - Allow technologists time for breaks/vacation PTO
- Another recommendation to encourage incoming radiology students is for hospitals to pay for their tuition into that specific field, in exchange for a certain number of hours of service to be done at the chosen hospital

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AKNOWLEDGEMENTS

Linda Gallo – MRI Scheduling Supervisor/ Client Services Facilitator (Supervisor)
Dr. Amanda Mack – Internship Professor