Addressing Challenges in Medical Dosimetry:

AAMD's ROLE IN SUPPORTING THE PROFESSION

By Mark Littell

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Dosimetrists play an essential role in radiation therapy, designing and optimizing treatment plans that are critical for effective patient care. Like other healthcare fields, medical dosimetry continues to evolve, facing unique challenges that require innovative solutions. In this article, I highlight three key issues affecting the profession today: 1) the dosimetrist shortage; 2) the shift toward remote and hybrid work models; and 3) the growing impact of artificial intelligence (AI). I also outline how the American Association of Medical Dosimetrists (AAMD) is working to support dosimetrists and administrators in addressing these challenges.

The Dosimetrist Shortage

A nationwide shortage of dosimetrists is placing significant stress on clinics and overburdening current staff. These shortages impact workflow and delay patient treatment, increasing anxiety for patients and families.

While increasing the number of dosimetry students might seem like a straightforward solution, the lack of clinical training opportunities has created barriers to enrollment. Only 17 accredited dosimetry programs exist in the U.S., and these programs struggle to provide students with clinical placements due to the shortage of experienced dosimetrists available to provide on-site training. Dosimetrists' workloads and limitations due to hospital policies also limit opportunities for students' training.

In addition, reduction in the workforce due to the ongoing retirement of baby boomer professionals has exacerbated this shortage. Administrators often need to offer higher salaries and/or bonuses to attract talent, which can strain budgets. According to the AAMD's 2023 Salary Survey, the average dosimetrist salary increased by 10.2 percent compared to 2021, reflecting heightened demand. The mean salary now stands at $144,813, not including benefits, with regional variations driven by cost of living—particularly in the U.S. Pacific region. Rising salaries come with risks, however. If dosimetrist compensation approaches that of physicists, clinics may opt to delegate dosimetrist tasks to physicists, potentially threatening the future of the profession, and worsen the physicist shortage. I encourage administrators to consult the AAMD's Scope of Practice and related resources to ensure roles are clearly defined and to help ensure appropriate staffing.

Embracing Remote and Hybrid Work Models

The COVID-19 pandemic accelerated the adoption of remote and hybrid work arrangements across healthcare professions, including medical dosimetry. Many dosimetrists now seek roles that offer flexibility, whether a fully remote or a hybrid model.

The hybrid approach has gained traction, as it balances the need for on-site presence with the flexibility that candidates value. For example, some clinics have implemented rotating schedules, where dosimetrists spend one-third of their time on-site, one-third on-call for emergencies, and one-third working remotely.

Despite its benefits, remote work can lead to challenges in communication and team integration. Daily huddles, which are critical for sharing updates on patient cases, often exclude remote dosimetrists. This omission can lead to gaps in treatment planning, particularly for complex cases where direct input from dosimetrists is vital. To address this, clinics should ensure that dosimetrists are included in huddles and other team discussions, even if they are working remotely.

Having dosimetrists involved in departmental committees and social events can also strengthen team cohesion and help promote the clinic's community presence.

AI and Adaptive Therapy

Advances in AI are reshaping medical dosimetry by streamlining workflows and improving efficiency. AI tools, such as auto-contouring software, allow dosimetrists to complete treatment plans faster and enable them to focus on more complex tasks. AI will continue to advance where it complements dosimetrists' expertise. This will increase dosimetrist throughput and help reduce the impact of the current dosimetrist shortage.

Dosimetrists concerned about AI replacing their roles should view it instead as a tool to complement their expertise. As Brian Napolitano, CMD, of Massachusetts General noted in an article and

blog published by SROA, "AI is a complement to, not a replacement for, dosimetrists … [it] integrates their skills in optimizing quality, safety and efficiency for patient care." Clinics that embrace AI will likely see significant time savings and improved workflows, particularly in larger centers.

Dosimetrists will also a play a critical role in adaptive therapy, which is becoming more prevalent in radiation therapy. Dosimetrists will need support and a clear understanding of their role in developing and implementing adaptive therapy plans for patients.

Looking Ahead

Despite current challenges, the future of medical dosimetry holds promise. By adopting hybrid work models and leveraging AI, clinics can create more efficient workflows while maintaining high standards of patient care. The AAMD remains dedicated to supporting dosimetrists and administrators through these transitions, offering resources like career development initiatives and scope-of-practice guidelines.

As the profession evolves, collaboration between organizations like the AAMD, SROA and others will ensure that medical dosimetry continues to thrive, enabling teams to deliver exceptional care to patients.

Mark Littell is a dosimetrist and president of the AAMD.

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How The AAMD Supports Dosimetrists

The American Association of Medical Dosimetrists (AAMD) is committed to being a comprehensive resource and source of support for dosimetrists and radiation oncology administrators. We offer the following:

1. **Continuing Education (CE) credits and resource database:** Dosimetrists can earn CE credits by attending and presenting at conferences. The AAMD CE Center, *Medical Dosimetry* journal and resource database are the largest resources for directed readings, recorded presentations and publications of treatment planning research and case studies.

2. **Career Center:** Employers can post positions on the AAMD job board. There are also career resources online for dosimetrists.

3. **Scope of Practice:** The AAMD defined and published the Scope of Practice for the medical dosimetrist. It was created and has been updated in collaboration with sister societies with respect to the many clinical staff working together in radiation oncology.

4. **Professional development:** The AAMD promotes how dosimetrists can become experts in their field through professional development. We hold large annual conferences, smaller regional meetings, in-person and virtual meetups, and other events for dosimetrists to get acquainted and collaborate.

5. **Salary and workforce survey:** The AAMD conducts regular salary survey and workforce surveys.

6. **Awards & Recognition:** At our conferences, we recognize and elevate dosimetrists who demonstrate excellence.

7. **Scholarships:** The nonprofit AAMD Foundation awards scholarships for medical dosimetry students and travel stipends to meetings for dosimetrists who need CE credits. These travel stipends are not well-known or used as much as they could be. If it's not in your budget to send your dosimetrists to attend the AAMD conference, they can apply for the stipend. The AAMD has also provided grants to accredited medical dosimetry programs for textbooks, computers and software licenses.