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Authors

Sinha, Sumi
Xu, Melody J
Yee, Emily
et al.

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Research Letter

Interprofessional Education Curriculum for Medical Assistants in Radiation Oncology: A Single Institution Pilot Program



Sumi Sinha, MD,¹ Melody J. Xu, MD,¹ Emily Yee, NP, MSN,
Troy Buckmeier, RN, BSN, Catherine Park, MD, and Steve E. Braunstein, MD, PhD*

Department of Radiation Oncology, University of California San Francisco, San Francisco, California

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Abstract

Purpose: Medical assistants (MAs) occupy an increasingly prevalent role in the clinical setting. Subspecialized fields such as oncology require specific clinical knowledge; however, MAs have few requirements for continued education. Here we assess the role and effect of a pilot MA Radiation Oncology education curriculum.

Methods and Materials: A needs assessment survey was conducted and reviewed to develop a comprehensive introductory oncology curriculum. A resident physician-led program was implemented in an academic cancer care center consisting of monthly, 1-hour lectures. Pre- and postlecture surveys were administered to assess learning. Quarterly surveys were conducted over the 20-month curriculum timeframe.

Results: The needs assessment revealed that there were no pre-existing MA continuing education didactics, but all (100%) MAs surveyed were “very interested” in such a curriculum. Sessions were found to be clear, comprehensive, relevant, and associated with a significant increase in a sense of empowerment ($P = .035$). Topics in Head and Neck and Breast Cancer showed large improvements in understanding (change in median Likert score of 3-4 points each) whereas topics in Introduction to Oncology and New Patient Consultation showed the smallest change (change 0.5-1). For 20 months, there was a sustained improvement in clinical understanding within and outside the scope of the MA role and an improvement in perceived empathy for patients (from median Likert score 3.5-5).

Conclusions: Dedicated education programs for MAs show the potential to improve clinical understanding and participation in patient care. Further studies may demonstrate how such programs translate to staff productivity or patient clinical outcomes. Interprofessional education may facilitate collaboration and enhanced clinical workflow.

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Introduction

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Disclosures: none.

Research data are stored in an institutional repository and will be shared upon request to the corresponding author.

*Corresponding author: Steve E. Braunstein, MD, PhD; E-mail: steve.braunstein@ucsf.edu

¹ S.S. and M.J.X. contributed equally to this work.

Medical assistants (MAs) are allied health professionals who serve diverse roles in the clinical setting. Responsibilities can include administrative work (reception or billing), clinical work (vital signs, patient history interviews, or set up and assistance in medical procedures), and advanced skills (performing electrocardiograms, patient education, telephone triage, or reporting results to patients).¹ MA duties may vary by training experience, which can range from several months of vocational coursework to an

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associate's degree.² Approximately 15% of MAs are certified through graduation from an accredited school or by passing a certification examination administered by a state or national MA entity (eg, the American Association of Medical Assistants and American Medical Technologists).^{2,3} Few continuing education opportunities are available and no continuing education requirements have been established.

Additionally, interprofessional education (IPE) is an increasingly recognized means to improving health care delivery, though few such programs exist in Radiation Oncology (RO). IPE can be defined as educators and learners from 2 or more health professions jointly creating and fostering a collaborative learning environment.⁴ A recent report demonstrated a need to improve interprofessional collaboration in RO with IPE identified as an appropriate methodology.⁵

Here, we prospectively investigate the utility of a field specific, structured, IPE program in RO for MAs. Secondary effects on job satisfaction, team-dynamics, and MA empowerment were also explored.

Methods and Materials

Setting and population

This pilot curriculum was prospectively conducted in the Department of Radiation Oncology in a single academic cancer care center. Support for the curriculum was garnered jointly from stakeholder parties including medical staff (physicians, direct supervisors, nurses, MAs) and administrative staff. The pilot program was led by resident physicians with attending physician supervision. Institutional Review Board review was not required for this quality improvement project.

Curriculum development

A preliminary needs assessment of medical education was conducted among all RO MAs in the form of an anonymized survey. The results were analyzed and curriculum goals were identified (Table 1). Topics of interest were prioritized based on interest among MAs, relevance to the scope of practice and clinical duties, and essential skills and knowledge. A preliminary curriculum was outlined and provided to stakeholders. Written feedback was solicited from the group. The final curriculum was ultimately approved in a meeting with available stakeholders. Additional sessions were added to the program based on feedback from MAs and stakeholders during curriculum implementation.

Curriculum implementation

All Cancer Center MAs were invited by one-time e-mail invitation and RO MAs were recruited by direct

Table 1 Radiation Oncology medical assistants education curriculum

Curriculum development goals
1. Applicability to daily work
2. Elevating responsibilities within the scope of practice
3. Expanding clinical knowledge base
4. Increasing intellectual curiosity
5. Establishing regular education time
Syllabus
1. Introduction to clinical oncology
2. Vital signs and triage
3. Medications
4. Elements of a new patient consultation
Common cancers and their management (one session for each)
5. Prostate cancer
6. Breast cancer
7. Brain cancers
8. Spine metastases
9. Head and neck cancers
10. Gastrointestinal cancers
11. Lung cancer
12. Gynecologic cancers
13. Pediatric cancers
14. Palliative radiation
15. Radiology review and interpretation
16. Radiation biology and physics
17. Radiation machines
18. Social support
19. Nutrition
20. Radiation safety

supervisor invitation through which all staff were reached. RO MAs were subsequently invited monthly by e-mail invitation. Teaching sessions were conducted for 1 hour each, once a month during normal clinic hours. Education time was not held during lunch or other break time and was protected from clinical duties for participants. Sessions were predominantly resident physician led. Guest lecturers were recruited for special topics including nursing, nurse practitioners, social work, nutrition, radiation therapists, and medical physics. Pre- and posteducation session surveys were administered for each meeting. Surveys were scored using 5-point Likert scales: strongly disagree = 1, disagree = 2, neutral = 3, agree = 4, and strongly agree = 5. Quarterly surveys were administered to assess educational and clinical effect, as well as areas of improvement. A final completion survey was also conducted at 20 months, at the conclusion of the curriculum.

Statistical analysis

Frequency distribution and percentages were used to summarize categorical and ordinal variables. Median

Likert scores were calculated for individual lecture topics and difference in median was used to assess changes in understanding. Box and whisker plots were used to describe Likert score distributions at each quarterly feedback survey. One-way analysis of variance was used to assess whether Likert scores increased over time for each survey outcome variable.

Results

Needs assessment and curriculum implementation

Among all RO MAs eligible for survey (n = 5), the response rate for the needs assessment survey was 60% (n = 3). There were no pre-existing dedicated lecture hours or known oncology education material available to MAs. All (100%) were “very interested” in monthly education sessions. Respondents rated topics of interest as within the scope of their practice or outside their scope of practice. These data were used to construct a 20-month curriculum (Table 1). Five RO MAs were enrolled at the beginning of the education program and 8 were enrolled at 20 months. More females (87.5%) were enrolled than males. Of the participants, 66.7% were interested in pursuing additional health care training (such as further MA, nursing, or other degree in the medical field). All MAs attended at least one lecture, although monthly attendance varied based on availability (66.7% of participants attended at least 10 sessions).

Quality assessment of education sessions

Survey response ranged from n = 2 to 5 per session. Education sessions were found to be consistently clear (median Likert score 5), comprehensive (median Likert score 4-5), relevant (median Likert score 5), and

informative (median Likert score 5; Fig. 1). Over time, a statistically significant increase in a sense of empowerment was noted (median Likert score change from 3.5-5, $P = .03$). Pre- and posteducation session surveys were compared with identify topics resulting in the greatest and smallest improvement in learning. Figure 2 shows the changes in Likert Score of MA understanding of topics presented. Topics in Head and Neck and Breast Cancer showed large improvements in understanding (change in median Likert score of 3-4 points), whereas topics in Introduction to Oncology and New Patient Consultation showed the smallest (change 0.5-1 points). Large changes in Likert Score reflect potential areas of prior educational deficit or areas of high interest among the cohort. Conversely, small changes in Likert Score were mixed results of content already mastered or topics difficult to master on first presentation.

Effect of program on MAs

MAs were surveyed at 3, 9, 15, and 20 months to assess the effect of education sessions on their personal work. Figure 3 shows patterns of perceived change over time, including sustained improvement in clinical knowledge within the scope of the MA role (median Likert score 5) and empathy for patients (median Likert 5). Scores did not significantly increase over time for clinical knowledge outside the scope of the MA role ($P = .28$), confidence ($P = .49$), awareness of education resources ($P = .72$), or job satisfaction ($P = .94$). Ratings however showed sustained and high median Likert scores over time, ranging from 4 to 5 in each category.

Discussion

This first of its kind program reported for MAs demonstrates the feasibility of IPE in RO. The program was assessed for the quality of education sessions, effect on

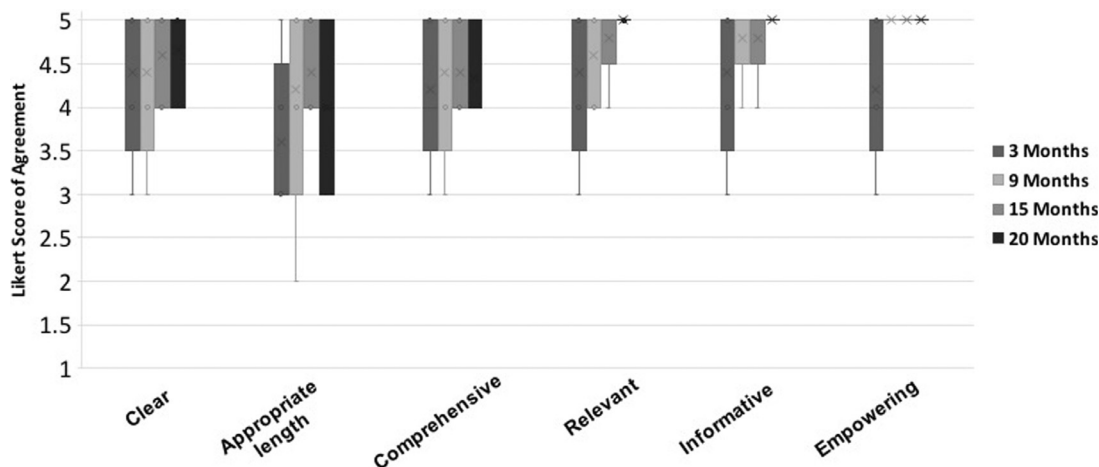


Fig. 1 Box and whisker plot of trends in quality assessment of education sessions over quarterly surveys.

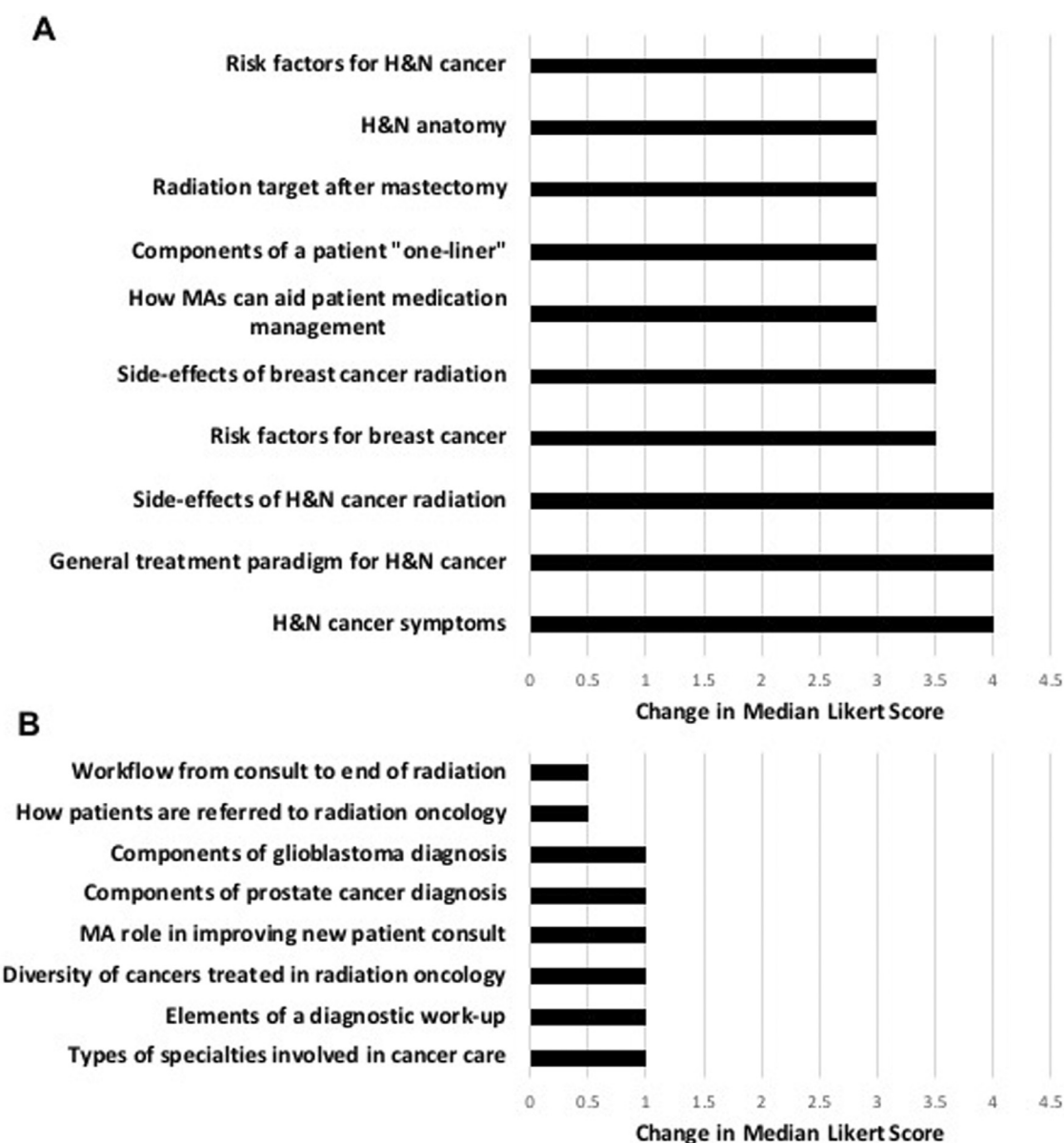


Fig. 2 Change in median Likert score of individual lecture topics where panel (A) depicts topics with the largest change in median Likert score compared with (B) topics with the smallest change in median Likert score. *Abbreviation:* H&N = head and neck.

MA personal work, and effect on perceived changes. Overall, the findings showed high satisfaction with the quality of the curriculum and sustained improvement in clinical knowledge and empathy for patients after curriculum completion.

Results from our needs assessment study demonstrate a clear gap in MA education and training in RO. This experience appears to reflect the lack of continued education nationwide. Most recently, a similar needs assessment among nurses in RO was conducted revealing that specific knowledge was desired and required to provide care; didactic lectures were the preferred teaching method.⁶ Together, our work adds to the growing recognition that specific training is needed for all members of the RO team.

In particular, recent work has highlighted the need for IPE in RO. In a recent survey, all participants stated that the effect of IPE would be positive.⁵ Currently, few such programs exist in the field and none describe programs for MAs.⁷ We found that design and implementation of the program required collaboration across multiple department stakeholders.

Lectures were predominantly delivered by residents, providing a unique educational and leadership opportunity for residents. The role of the Resident as a Teacher was recently highlighted by the Radiation Oncology Education Collaborative Study Group where a curriculum of teaching medical students was described.⁸ A strength of this program was expanding the scope of the resident teacher beyond medical students and peer residents.

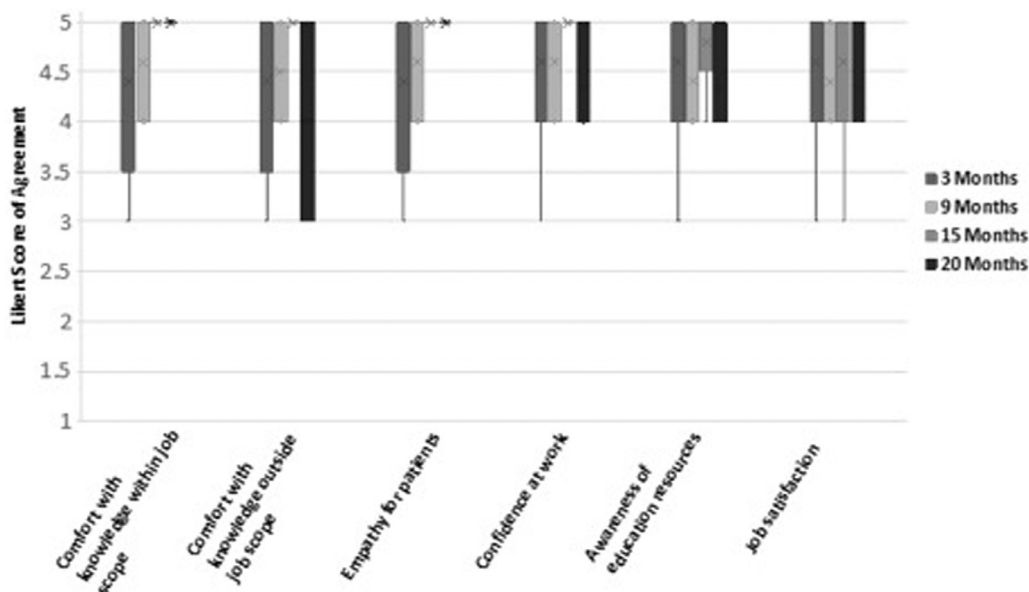


Fig. 3 Box and whisker plot demonstrating the effect on personal work during the curriculum.

Additional study could evaluate the effect of teaching on residents and other lecturers.

Furthermore, improving MA education offers the potential to broaden the MA scope of practice within oncology clinics. For example, prior reports have involved MAs in tobacco cessation, mammography referral, domestic violence screening, colon cancer screening, and behavioral risk referral and counseling.⁹⁻¹³ Understanding topics of particular interest among MAs (Fig. 2) may identify potential areas for further in-depth training or development into clinical quality improvement projects. Increasing a sense of ownership over department projects and engagement in medical education may lead to increased relationships with colleagues, involvement with patients, sense of control, sense of efficacy, and increased workload among MAs; such opportunities have previously been associated with improved job satisfaction.¹⁴ Finally, we anticipate that continued education for MAs may improve patient interactions, particularly in providing initial assessment and counseling with the ultimate goal of improving patient care.

Limitations of this study include the small sample size of MAs within the single institution RO department. Academic medical centers may have more resources, time, and incentives to support MA education didactics and therefore this study's findings may not be generalizable to all oncology settings. Additional assessment of MA education on patient care and clinic workflow may be helpful to generate further widespread support from key departmental and cancer center stakeholders. Future programs may offer an opportunity to increase staff job satisfaction, improve clinical competency, and further expand clinical responsibilities.¹⁵

Conclusions

We report a pilot MA oncology continuing education program well-received by supervisors and participants alike. Our findings highlight a void in interprofessional education and an opportunity to improve clinical care.

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