INTERNATIONAL JOURNAL OF
RADIATION ONCOLOGY • BIOLOGY • PHYSICS
www.redjournal.org

EDUCATION AND TRAINING

An International Expert Delphi Consensus to Develop Dedicated Geriatric Radiation Oncology Curriculum Learning Outcomes

Lucinda Morris, FRANZCR,[*,†] Sandra Turner, PhD,[‡,§] Niluja Thiruthaneeswaran, PhD,[‡,§] Anita O'Donovan, PhD,[‖] Richard Simcock, FRCR,[¶] Anthea Cree, FRCR,[#] Jane Phillips, PhD,[*,**] Shabbir Alibhai, FRCPC,[††,‡‡] Martine Puts, PhD,[§§] Ewa Szumacher, FRCP(C),[‖‖] Heather Lane, PhD,[¶¶] Arielle Berger, MD,[##] and Meera Agar, PhD[*]

[*]*Improving Palliative, Aged and Chronic Care through Clinical Research and Translation (IMPACCT), Faculty of Health, University of Technology Sydney, Ultimo, New South Wales, Australia;* [†]*St. George Cancer Care Centre, St. George Hospital, Sydney, New South Wales, Australia;* [‡]*Sydney Medical School, University of Sydney, Sydney, Australia;* [§]*Crown Princess Mary Cancer Centre, Westmead Hospital, Sydney, New South Wales, Australia;* [‖]*Discipline of Radiation Therapy, School of Medicine, Trinity College, Dublin, Ireland;* [¶]*Brighton and Sussex University Hospitals NHS Trust, Brighton, East Sussex, United Kingdom;* [#]*Clatterbridge Cancer Centre, Liverpool, United Kingdom;* [**]*Queensland University of Technology, School of Nursing, Faculty of Health, Queensland University of Technology, Brisbane, Queensland, Australia;* [††]*Department of Medicine, University Health Network, Toronto, Canada;* [‡‡]*Department of Medicine, Institute for Health Policy, Management and Evaluation, University of Toronto, Toronto, Canada;* [§§]*Lawrence S. Bloomberg Faculty of Nursing, University of Toronto, Toronto, Canada;* [‖‖]*Department of Radiation Oncology, Sunnybrook Odette Cancer Centre, University of Toronto, Toronto, Canada;* [¶¶]*Sir Charles Gairdner Hospital, Perth, Washington, Australia; and* [##]*Department of Medicine, University of Toronto and Sinai Health/University Health Network Hospitals, Toronto, Canada*

Received Jan 24, 2022; Accepted for publication Apr 22, 2022

Purpose: The management of older adults with cancer is rapidly becoming a significant challenge in radiation oncology (RO) practice. The education of future radiation oncologists in geriatric oncology is fundamental to ensuring that older adults receive high-quality care. Currently RO trainees receive little training and education in geriatric oncology. The objective of this study was to define core geriatric RO curriculum learning outcomes relevant to RO trainees worldwide.

Methods and Materials: A 2-stage modified Delphi consensus was conducted. Stage 1 involved the formation of an expert reference panel (ERP) of multiprofessional experts in geriatric oncology and/or RO and the compilation of a potential geriatric RO learning outcomes set. Stage 2 involved 3 iterative rounds: round 1 and round 2 (both online surveys), and an intervening ERP round. These aimed at identifying and refining ideal geriatric RO learning outcomes. Invited participants for round 1 and 2 included oncology health care professionals with expertise across RO, geriatric oncology, and/or education and consumers. Predefined Delphi consensus definitions were applied to the results of rounds 1 and 2.

Results: An ERP of 11 experts in geriatric oncology and/or RO was formed. Seventy potential knowledge- and skill-based learning outcomes were identified. In round 1, 103 of 179 invited eligible Delphi participants completed the survey (58%

Corresponding author: Lucinda Morris, FRANZCR; E-mail: lucinda.morris@health.nsw.gov.au

L.M. is supported by St. George Cancer Care Centre in the improvement of the care of older adults, and M.P. is supported by a Canada Research Chair in the care of frail older adults.

Disclosures: none.

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

Supplementary material associated with this article can be found, in the online version, at doi:10.1016/j.ijrobp.2022.04.030.

Acknowledgments—We thank all the health care professionals and consumers who participated in this study. We also thank the UK Macmillan Expert Reference Group for the Older Person with Cancer and the Clinical Oncology Society of Australia (COSA) and members of the UK Royal College of Radiologists (RCR), Canadian Association RO (CARO), International Society of Geriatric Oncology (SIOG), and the Royal Australian & New Zealand College of Radiologists, Faculty of RO (RANZCR FRO) for valuable consultation and collaboration regarding the study design.

https://doi.org/10.1016/j.ijrobp.2022.04.030

response rate). The ERP round was conducted, resulting in the exclusion of 28 learning outcomes. In round 2, 54 of 103 completed the survey (52% response rate). This identified a final total of 33 geriatric RO learning outcomes.
Conclusions: The geriatric RO learning outcomes described in this study form an international consensus that can inform RO training bodies worldwide. This represents the first fundamental step in developing a global educational framework aimed at improving RO trainee knowledge and skills in geriatric oncology.

Introduction

Globally the population is aging at an unprecedented rate, with global life expectancy rising from 68 to 76 years by 2050.[1] This trend will result in an exponential increase in cancer diagnoses in older people and heralds what has been called "The Age of Cancer."[2-4] This will exert significant demand on an already stretched health care sector.[2,3] Furthermore, older adults with cancer are a population with heterogeneous and often more complex needs. This is driven by the interplay of comorbidities, preferences, life expectancy, cognition, psychosocial factors, and functional status.[4-6] Any and all these factors may affect potential oncological treatment decisions, interventions, prognosis, and short- and long-term quality of life. Thus, the management of older adults with cancer represents a significant global cancer care challenge.

Outcomes for older adults with cancer are significantly poorer than younger counterparts, whether this relates to experience of care and treatment to quality of life and overall survival.[5-7] Multiple factors contribute to this disparity.[2,7] Physician bias can lead to over or under treatment of older people with cancer.[2,7,8] Older adults are significantly underrepresented in the key randomized controlled trials that have informed current best practice across all cancer types, thus the evidence base to guide decisions is lacking.[9,10] Standard oncological assessments are not tailored to the specific characteristics of older adults and often physical, social, and cognitive problems are not identified before treatment.[5,11] Globally there is limited adoption of geriatric assessment tools for older adults in oncology practice.[5,11-13] This includes a lack of use of frailty screening tools (short clinical scales and questionnaires) and comprehensive geriatric assessment (CGA), a multidimensional, multidisciplinary process to identify medical, social and functional needs and the development of an integrated care plan.[5] This is despite the fact that these tools have the potential to predict treatment toxicity and tolerance and identify frail or prefrail patients who may benefit from interventions and alterations to treatment paradigms and improve communication with patients and caregivers.[5,14,15] These tools have also been shown to be superior to oncologists' clinical judgment in identifying frailty.[16] Randomized evidence also shows geriatric assessment-guided interventions for older adults with cancer can improve quality of life and decrease treatment toxicity with no detriment to survival.[14,15,17] Lastly, there is little or no multidisciplinary team collaboration between oncology and geriatrics.[5,11-13,18,19] As such, there exists a systematic failure in the oncology sector in appropriately assessing and tailoring care for older adults with cancer.

Fundamental to addressing this deficiency is the need to improve clinician knowledge and education in geriatrics and geriatric oncology.[20] Expertise in geriatric oncology would enable clinicians to make well informed decisions around appropriate selection patients for treatment, effectively utilize geriatric screening tools and CGA and multidisciplinary team input to guide interventions.[5,20] This would ensure older patients are well prepared and supported before, during and after cancer treatment.[5] The need for education around geriatric oncology is internationally recognized and is a key strategic priority of the International Society of Geriatric Oncology.

Radiation therapy and older adults

Radiation therapy is a vital and effective form of cancer treatment that contributes to 40% of cancer cures.[21] One in 2 patients with cancer may benefit from radiation therapy during their disease course.[21] Improvements in radiation therapy technology and treatment delivery provides shorter but as effective treatments, including hypofractionation and SABR (stereotactic ablative body radiation therapy).[22-25] For older adults who may have significant comorbidities or may be frail or prefrail, radiation therapy thus represents a highly attractive treatment option that may avoid associated mortality and morbidity risks of surgery or chemotherapy, and be more widely accepted and tolerated.[26,27]

Given the critical role radiation therapy plays for older adults, the education of future radiation oncologists in geriatric oncology is fundamental to ensuring the needs of older patients are met. However, studies indicate that RO trainees receive very little training and experience in geriatric oncology, despite their interest to receive this.[28-31] There is also a paucity of geriatric oncology competencies in RO curricula worldwide (59-61). Data show trainees have little knowledge of geriatric assessment tools or the rationale for their use and rarely use them in clinical practice. Further trainees seldom seek multidisciplinary input from geriatricians in clinical practice.[28-31] This situation stands in contrast to medical oncology training. Notably the American Society of Clinical Oncology (ASCO) core curriculum includes a dedicated section on geriatric oncology and the 2010 ASCO and European Society for Medical Oncology collaborative joint global curriculum for medical oncology trainees also include specific objectives around geriatric oncology.[32]

This study aimed to develop globally applicable geriatric RO curriculum learning outcomes by utilizing a modified Delphi expert consensus methodology. These learning outcomes will support the delivery of geriatric oncology education to RO trainees, which will in turn support the delivery of high-quality, evidence-based care to older adults with cancer worldwide.

Aim

To determine an internationally applicable dedicated Geriatric RO curriculum learning outcome set for radiation and clinical oncology trainees.

Methods and Materials

The study was undertaken as part of an international collaboration supported by the Global RO Collaboration in Education with representative members internationally from key geriatric oncology and radiation professional bodies. Ethics approval was provided by the UTS Human Research Ethics Committee (ETH18-2823).

The study design was a 2-stage Delphi consensus.[33,34] The first stage involved the formation of an expert reference panel (ERP) and the development of the potential "master" learning outcome set. The second was a modified Delphi consensus to refine this into an ideal geriatric oncology learning outcome set for radiation and clinical oncology trainees worldwide.

Stage 1: Role of the ERP and development of potential "master" learning outcome set

An ERP of internationally recognized multiprofessional experts in geriatrics, geriatric oncology, and/or RO was convened, through formal invitation by e-mail. Experts were identified and invited based on a proven track record of research and academia (such as completion of a doctorate, editorial positions and high-impact publications) and/or leadership positions within peak national or international RO and/or geriatric oncology organizations. Geographic spread of ERP collaborators aimed at widespread relevance of the final competency set.

Next, a draft potential "master" learning outcome set was developed by 3 members of the ERP via a comprehensive review of the geriatric and RO literature, including international guidelines, peer reviewed geriatric oncology education focused studies, international medical oncology, and hematology curricula. Outcomes identified were then streamed into key learning themes. This initial draft was circulated to the ERP twice via e-mail for comment, additions, and edits. The ERP then unanimously agreed on a final version of the potential "master" learning outcome set to be progressed to stage two for refinement via the Modified Delphi consensus

In formulating the potential "master" learning outcome set, it was decided a priori by the study investigators to incorporate the 7 thematic groups of competencies defined by the Canadian Medical Education Directives for Specialists (CanMEDS) roles.[35] These are Medical Expert, Communicator, Collaborator, Leader, Health Advocate, Scholar, and Professional.[35] These roles are widely accepted around the world and are utilized in medicine and other health care professions, including several RO bodies tasked with training and education, including the Royal College of Physicians and Surgeons of Canada (RCPSC) and RANZCR. CanMEDS is also appropriate to the field of geriatric oncology, in that the final CanMEDS framework is derived explicitly from patient, community and societal health care needs all relevant to the care of older adults with cancer. The potential learning outcome set was structured in discrete learning areas specific to geriatric oncology with the CanMEDS roles applied variably within each, as in the field of geriatric oncology these domains cross multiple learning areas.

Stage 2: Modified Delphi consensus to define the ideal geriatric oncology learning outcome set for trainees worldwide

Two Delphi rounds were then completed by a broader cohort of multidisciplinary experts and consumers. In these rounds, this cohort was tasked with refining the potential "master" learning outcome set to reach consensus on the ideal geriatric oncology learning outcome set for radiation and clinical oncology trainees worldwide. The 2 Delphi rounds were conducted on the SurveyMonkey platform. The online survey questions for both rounds are attached in Addendum 1. There was an intervening ERP round in which the results of round 1 were reviewed and edited by the 11 members of ERP. Figure 1 provides a diagrammatic overview of stage two.

Recruitment and eligibility

Contact details of potential Delphi participants was via publicly available contact information (such as authors of published articles in the field and/or via the websites of geriatric oncology and RO organizations) and/or self-referral to investigators and/or professionals' colleagues within relevant specialties informally contacting their preexisting networks for confidential expressions of interest.

Identified potential Delphi participants were then formally invited via e-mail to complete round 1. Participants were presented the information about the study in the e-mail and informed consent was assumed if the participant commenced the survey. Initial screening questions at commencement of the survey assessed eligibility and if participants did not meet these criteria, they were automatically directed to a disqualification page.

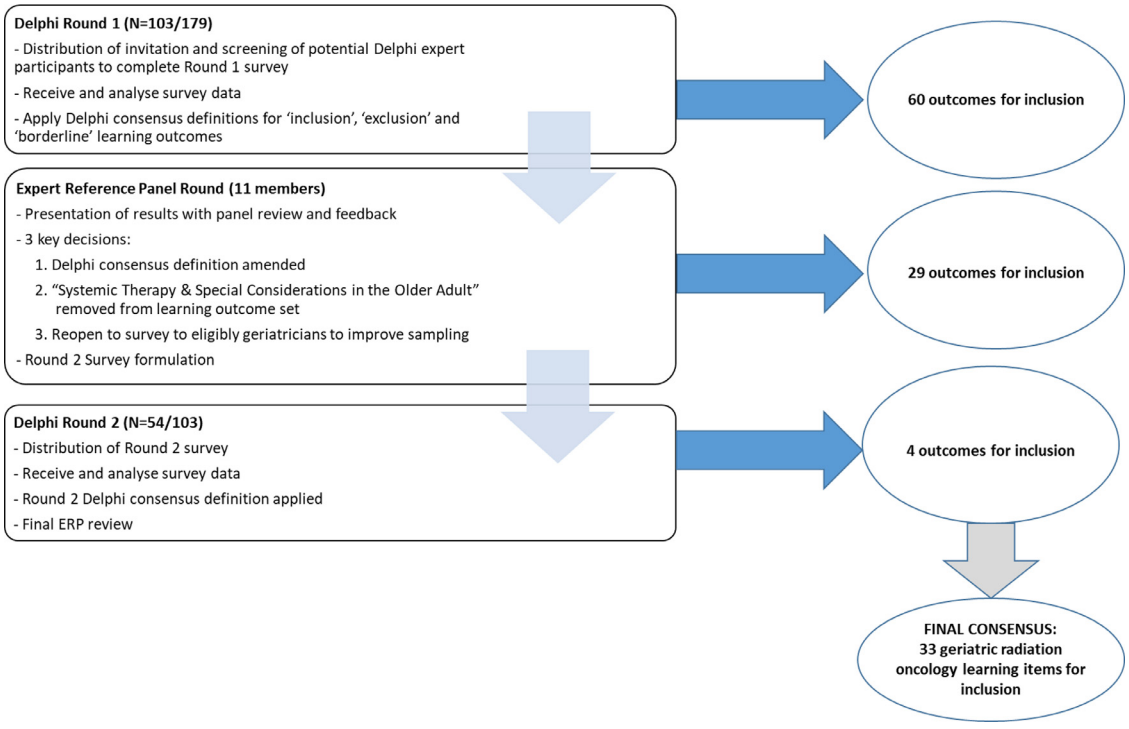

Fig. 1. Outline of stage 2 process and results. *Abbreviation:* ERP = expert reference panel.

Eligibility criteria were met if participants identified themselves as either:

1. Health care professionals working in oncology in 1 or more of the specialty areas of RO, clinical oncology, radiation therapy, geriatric oncology, geriatrics, surgical oncology, medical oncology, hematology, palliative care, and nursing, and have demonstrated leadership or academic expertise in geriatric medicine, geriatric oncology, RO, and/or education. These professionals were defined as any of the following:
   - Authored or coauthored peer reviewed article(s) relating to either geriatrics, geriatric oncology, or education in oncology
   - A member of a society, committee, organization, or interest group that identifies them as having interest and expertise in either geriatrics, geriatric oncology, or RO
   - A member of an oncology society, committee, organization, or interest group that is involved in education and training of health care professionals.
2. Consumers with experience as a patient with cancer or a caregiver for an older adult with cancer.

All members of ERP were permitted to elect to participate in the 2 Delphi rounds if they elected.

Delphi round 1

In round 1, all eligible invited participants:

- Reviewed and ranked the potential "master" learning outcomes on a 5-point Likert scale: 1 ("definitely exclude"), 2 ("possibly exclude"), 3 ("possibly exclude/include"), 4 ("possibly include"), and 5 ("definitely include").
- Provided free-text comments to indicate their rationale for the ranking and any suggested alterations or additions.
- Ranked the clarity of the meaning of the learning outcomes on a 3-point Likert scale—1 ("meaning clear"), 2 ("meaning unclear"), and 3 ("meaning clear but wording could be improved")—and provided free-text feedback or suggested improvements to the wording.

The round 1 consensus definition applied for "inclusion" across each response was set at 70% of participants' votes, falling within the 5-point Likert scale categories of 5 ("definitely include") or 4 ("possibly include"). Outcomes receiving a mean score falling within the Likert scale categories of 1 ("definitely exclude") or 2 ("possibly exclude") were designated for "exclusion." Outcomes not meeting these 2 criteria were deemed "borderline."

ERP round

In this round the results of Delphi round 1 were reviewed by the 11 members of the ERP, in particular:

i. Presentation of outcomes that did or did not reach consensus, including those outcomes deemed borderline.
ii. All associated free-text feedback regarding the clarity of wording and content of outcomes.
iii. Invited free-text feedback about additions to the curriculum content.
iv Potential refinement of wording, content or consensus definition considered.
v. Consideration of outcomes to be included in round 2 for reassessment.

This round was conducted through 1 live teleconference meeting, with some follow-up correspondence via e-mail, phone, or discussion between members of the ERP.

Delphi round 2

Delphi participants who successfully completed round 1 were recontacted via e-mail and invited to complete the round 2 survey. Only these participants were eligible to partake in round 2 as knowledge of the content and information presented in round 1 was fundamental to informed and meaningful completion of round 2. Participants were asked to review outcomes which had not reached consensus for exclusion or inclusion and to rate each outcome "in" or "out" of the final competency set. Delphi consensus was defined as having been achieved if at least 75% of respondents scored the outcome as in.

Statistical analysis

Data was analyzed anonymously and was exported from SurveyMonkey and analyzed using SPSS version 20.0 (IBM) for analysis of means, medians, and standard deviations around each candidate outcome. The median, mean, and interquartile range were calculated based on all participating respondents. Demographic characteristics were analyzed using descriptive statistics. Missing answers were regarded as nonparticipation.

Results

Stage 1: Convening the ERP and developing potential learning outcomes

The ERP comprised 13 multiprofessional experts in geriatric oncology and/or RO based in Australia, North America, the United Kingdom, and Europe. Areas of specialty of ERP members included RO, clinical oncology, geriatrics, palliative care, geriatric oncology, and nursing, and radiation therapy (also known as therapeutic radiography).

The ERP identified 70 potential knowledge and skill-based "candidate" competencies. These were derived from comprehensive review of geriatric oncology literature with several additional outcomes also added after specific input from the ERP. The candidate competencies were then grouped into 12 key learning themes (Fig. 1).

Stage 2: Delphi consensus rounds

Round 1 results

A total of 103 of 179 invited individuals were eligible and completed the survey in full (58% overall response rate). This included 10 ERP members. Table 1 outlines the round 1 respondent characteristics including professional roles.

Definition of "geriatric"

Respondent views of the definition of "geriatric" is outlined in Figure 2. Fifty-three percent of participants chose more than 1 answer. Alternative definitions were also provided (5 in total) with the recommended age cutoff ranging from 65 to 85 years. Free-text comments revealed a common theme, namely that an ideal definition should include a specialist assessment of physiological age. In real world practice this was often limited by a lack of expertise and/or available resources needed to complete Comprehensive Geriatric Assessments.

Consensus on learning outcomes

After round 1, 60 learning outcomes reached the predefined consensus definition for inclusion. Nine outcomes met criteria for exclusion and 1 outcome met the criteria for borderline. The ERP was then convened and determined:

Based on significant respondent feedback, the section "Systemic Therapy & Special Considerations in the Older Person with Cancer" would not be included in the core RO/Geriatric Oncology Curriculum as these outcomes were deemed only relevant to clinical oncologists or radiation oncologists who are responsible for prescribing systemic therapy in their jurisdiction of practice.

To reopen the round 1 survey and exclusively target eligible geriatricians to participate, to improve the sample size of geriatricians to ensure the geriatrics focus of the curriculum was informed by expert views. This targeted sampling was prompted by only 17% (16) of participants being geriatricians, versus 55% (52) were radiation and clinical oncologists. Subsequently a further 9 geriatricians participated which increased the overall response rate from 55% (94/170) to 58% (103/179).

To alter the consensus definition for inclusion from a 70% to 90% cutoff. The rationale for this was to reduce the number of learning items included and overcome potential curriculum crowding. This aimed to ensure that the final competency set would be practically applicable for real world educational purposes. In-depth consideration regarding modification of the consensus definition as per published Delphi technique literature was undertaken and deemed to be justified by the ERP in conjunction with a consultant biostatistician.

Table 1 Demographic characteristics of Delphi participants

Country of residence	Round 1 (n = 103), n (%)*	Round 2 (n = 54), n (%)*
Australia	33 (35)	18 (33)
United States	16 (17)	8 (15)
United Kingdom of Great Britain and Northern Ireland	13 (14)	7 (13)
Canada	12 (13)	8 (15)
Denmark	4 (5)	4 (7)
Belgium	1 (1)	0 (0)
Brazil	1 (1)	0 (0)
Chile	1 (1)	1 (2)
Germany	1 (1)	1 (2)
Ghana	1 (1)	1 (2)
India	1 (1)	1 (2)
Ireland	2 (2)	2 (4)
Italy	1 (1)	0 (0)
Netherlands	2 (2)	0 (0)
New Zealand	2 (2)	1 (2)
Norway	1 (1)	1 (2)
Spain	1 (1)	1 (2)
Zambia	1 (1)	0 (0)
Professional role		
Radiation oncologist	40 (43)	23 (43)
Clinical oncologist	12 (13)	9 (17)
Radiation therapist/therapeutic radiographer	4 (4)	6 (11)
Medical oncologist	5 (5)	2 (4)
Palliative care specialist	1 (1)	0 (0)
Geriatric oncologist	5 (5)	4 (7)
Geriatrician	16 (17)	8 (15)
Surgical oncologist	1 (1)	0 (0)
Hematologist	0 (0)	0 (0)
Nurse	4 (4)	1 (2)
Consumer	7 (7)	2 (4)
Radiation oncology trainee	2 (2)	1 (2)
Clinical oncology trainee	2 (2)	1 (2)
Years in independent clinical practice		
21+	14 (15)	(24)
11-20	20 (21)	(26)
6-10	27 (29)	(33)
0-5	28 (30)	(17)
Not applicable (still in training)	5 (5)	1 (2)
Age, y		
60+	14 (15)	6 (11)
45-59	23 (24)	18 (33)
30-44	57 (61)	30 (56)
18-29	0 (0)	0 (0)
Sex		
Female	60 (64)	34 (63)
Male	34 (36)	20 (37)
Formal qualification in education or degree in education		
Yes	32 (34)	(53)
No	62 (66)	(47)

* The round 1 response rate was 60% (103/170) and the round 2 response rate was 52% (54/103).

After review of the 9 additional geriatricians' responses and the application of the new consensus definition, the final learning outcome list was reviewed by the ERP and individual opinions and edits around outcome rewording, clarity, and/or outcome duplication or consolidation were sought. Three learning outcomes were identified as not reaching consensus specifically due to the lack of clarity of the outcome wording. The ERP reworded these outcomes based on participant feedback and these outcomes were then deemed for inclusion. Further, the outcome "discuss the various management options for skin cancer and appropriate adaptations in older people" did reach consensus; however, it was deemed not for inclusion based on feedback from multiple participants and ERP members that it was already covered by the outcome "explain the role and rationale of radiation therapy and its risks and benefits, comparing it to potential alternatives (eg, surgery, chemotherapy) in an individual clinical situation for an older person with cancer." This resulted in 29 outcomes meeting criteria for inclusion and 28 for exclusion. A final 4 outcomes were deemed borderline or requiring further feedback on wording for improved clarity and were hence for inclusion in round 2 (voted as either for inclusion or not in final curriculum).

Round 2 results

Of the invited participants from round 1, 54 of 103 completed the round 2 survey in full with a 52% overall response rate (Table 1). Consensus was reached (>75% voting "in") for the 2 of the 4 outcomes.

Of note, the outcome regarding elder abuse did not reach consensus ("define elder abuse and how it may be recognized in older people and appropriate measures to be taken"). However, the ERP identified a dominant theme from free-text comments in round 2 from geriatrician participants regarding this outcome arguing that radiation and clinical oncologists should, at a minimum to ensure patient safety, be aware of elder abuse as an issue and have a referral pathway if they suspect a patient might be at risk. This prompted further analysis of the breakdown of professional group's responses for this outcome, from which it was hypothesized by the investigators that radiation and clinical oncologists may have voted it out simply due to a preexisting lack of knowledge about elder abuse and hence not recognizing its fundamental importance in clinical care. This prompted the ERP to elect to reconsider this outcome for

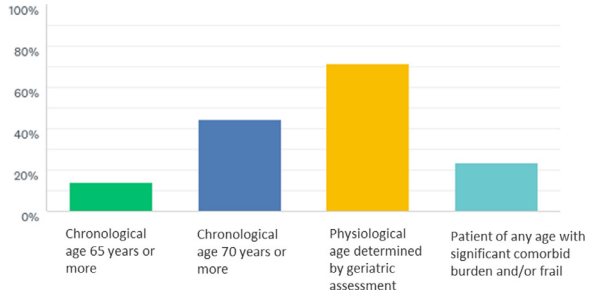

Fig. 2. Participant definition of "geriatric" as percentage of total responses.

inclusion. With the assistance of geriatrician and RO members of the ERP, the outcome was reworded into 2 separate parts: 1) demonstrate understanding of the definition of elder abuse used by the World Health Organization, including the various forms of elder abuse, and 2) demonstrate awareness of services/referral pathways within their local organizations and wider jurisdictions if elder abuse is suspected. This rewording was based on the rationale that the World Health Organization definition of elder abuse is the most comprehensive, covering the various forms of abuse and the associated complexities of the issues around neglect and the dynamics of abuse.[36] These 2 outcomes are both included in the final learning outcomes set.

A total of 33 geriatric RO learning outcomes were identified as being core to RO training.

Discussion

This study defines the first globally applicable geriatric RO learning outcome set aimed at improving the content and delivery of geriatric-focused education for RO trainees. Thirty-three learning outcomes across 7 key learning domains are included in the final set, which was successfully developed via an international collaboration of oncology and geriatric experts and cancer consumers. This evidence-based educational framework seeks to support RO training bodies around the world in ensuring future radiation and clinical oncologists can provide high-quality and appropriate care for older adults with cancer.

The Delphi technique is a widely recognized and robust process which has been well established as a valid method to produce learning outcome sets for RO trainees. Of note, published studies have utilized the Delphi technique to develop core competencies for RO trainees across a variety of educational areas including global health, leadership, imaging literacy, and quality and safety.[37-40] This study adds to the growing body of international educational research seeking to improve the quality of training provided to RO trainees in important areas previously neglected within more traditional curricula.

Although defining clear learning outcomes for training radiation oncologists is an important start to improving geriatric oncology practice, significant educational gaps remain in the field of RO. There is a paucity of research, curricula, or guidelines (published in the scholarly or gray literature) dealing with geriatric oncology education for other RO professionals (ie, radiation therapists, medical physicists, and/or nurses). To our knowledge, there is 1 published needs assessment looking at radiation therapists' knowledge and attitudes regarding geriatric oncology. This study found low levels of awareness and knowledge among this professional group around concepts considered key in the specialized care of older adults with cancer.[41] There are no other published geriatric oncology education-specific needs assessments for other RO professionals or supervisors/educators.[42] In contrast, within the specialties of medical oncology and hematology there are several published Needs Assessments for medical oncology and hematology trainees, practicing clinicians and educators which identify necessary geriatric oncology content for inclusion within training programs.[30,31,43-45] Furthermore, as previously mentioned, the ASCO and European Society for Medical Oncology curricula include specific learning objectives in geriatric oncology.[32]

A recent study by Hsu et al also used a modified Delphi technique to develop geriatric oncology learning outcomes for medical oncology training.[46] In this study, experts in medical oncology, hematology and geriatric oncology identified 35 key learning outcomes out of a potential 78.[46] Hsu et al differs in 2 main ways from our study. First, not surprisingly, it did not focus on radiation therapy-specific outcomes. Second, and in distinct contrast to our study's findings, no frailty screening or comprehensive geriatric assessment-related learning outcomes reached consensus for inclusion. Our study, on the other hand, found strong consensus for inclusion of 8 learning outcomes relating to screening tools and CGA in the final curriculum. Hsu et al state that this omission was unexpected but hypothesize that a possible lack of knowledge or buy-in about the value of geriatric assessment may exist.[46] The differing eligibility criteria and sampling of experts in our study compared with Hsu et al may also account for these varying results. The Delphi experts included in Hsu et al were limited to specialists in medical oncology, hematology, and geriatrics. In our study, all oncology specialties (including radiation and clinical oncology, surgical oncology, hematology, palliative care, medical oncology), nursing, radiation therapy, and consumers were included. Differences in expert opinion around relevant topics of focus and learning priorities within each respective specialty may have affected which learning outcomes reached final consensus.

A key strength of this study was the systematic, evidence-based approach to generating the final learning outcomes. Another strength is the wide breadth of expertise represented both within the ERP and the participants of the Delphi rounds. Geriatric and oncology professionals of all levels and specialties were included, including clinicians, nurses, and radiation and clinical oncologists in training. The cohort was also made more robust by a high level of expertise in medical education, with over one-third of the Delphi participants having a higher degree in education. The inclusion of consumer representation in the Delphi rounds has ensured the learning outcomes reflect the patient perspective and preferences. This study is one of a very small

Table 2 Summary of included and excluded geriatric radiation oncology learning outcomes

Learning outcome	Total consensus percentage achieved*	Mean	Standard deviation
A. Epidemiology of cancer and aging population			
1. Describe the global trend of population aging†	95%	4.65	0.67
2. Describe the relationship of cancer incidence to population aging demographics in their region of training†	88%	3.96	1.08
B. Basic concepts of geriatric medicine			
1. Define the most common geriatric syndromes, for example, cognitive impairment, falls, incontinence, polypharmacy, vision, and hearing impairment†	79%	4.36	0.90
2. Describe the clinical features of frailty†	96%	4.67	0.64
3. Discuss the concept of physiological versus chronological age	98%	4.85	0.48
4. Describe the domains of a comprehensive geriatric assessment†	96%	4.76	0.51
5. Discuss the purpose of a comprehensive geriatric assessment†	96%	4.76	0.51
6. Describe the purpose and value of interdisciplinary care planning (geriatric management plan) for older adults with cancer†	91%	4.55	0.69
7. Demonstrate understanding of the definition of elder abuse used by the World Health Organization, including the various forms of elder abuse†	86%	4.39	0.84
8. Demonstrate awareness of services/referral pathways within their local organizations and wider jurisdictions if elder abuse is suspected†	86%	4.39	0.84
Discuss socioeconomic factors that can increase vulnerability in older adults with cancer	83%	4.39	0.80
Describe the heterogeneity of health status and functional status of the elderly population	84%	4.38	0.97
Discuss the features and purpose of frailty screening tools	87%	4.51	0.75
Demonstrate the ability to perform frailty screening tools	81%	4.18	0.93
Demonstrate the ability to recognize polypharmacy (the concurrent use of multiple medications) in older adults and be able to review and appropriately alter medications of older adults with cancer	71%	4.10	1.03
Demonstrate the ability to implement a falls prevention education framework and strategy	53%	3.46	1.30
C. The role of geriatric screening and assessment in the management of the older adult with cancer			
1. Discuss how characteristics specific to older adults affect prognosis and treatment decisions†	95%	4.74	0.70
2. Discuss the effect of geriatric syndromes and frailty on morbidity, mortality, tolerance of illness, and intervention and treatments associated with a cancer diagnosis†	95%	4.70	0.67
3. Explain how different features within the comprehensive geriatric assessment can influence the oncology management plan in an older adult with cancer†	91%	4.51	0.87
4. Demonstrate ability to integrate the findings of the geriatric assessment into oncological decision-making and treatment recommendations†	97%	4.84	0.49
5. Demonstrate collaboration with geriatricians and/or allied health care workers to optimize care for older individuals with cancer†	93%	4.70	0.73
Estimate patient's vulnerability/frailty from standard oncologic assessments, for example, sarcopenia (age-related muscle loss) from computed tomography scans	57%	3.52	1.29
Be able to use the information ascertained by geriatric screening and/or assessment to guide geriatric interventions before, during, and after cancer treatment	82%	4.42	1.09
Discuss the advantages and disadvantages of frailty screening tools compared with full comprehensive geriatric assessment	79%	4.16	0.90
Discuss the potential models of care for implementation of geriatric screening and assessment in oncology practice	87%	4.20	0.92
D. Planning and delivery of radiation therapy in the older adult with cancer			
1. Explain the role and rationale of radiation therapy and its risks and benefits, comparing it to potential alternatives (eg, surgery, chemotherapy) in an individual clinical situation for an older adult with cancer†	96%	4.82	0.61
2. Describe the clinical, social, and logistical factors that may make it more difficult for older adults to receive radiation therapy†	95%	4.73	0.71
3. Discuss and give examples of clinical situations and ways that a course of radiation therapy might need to be adapted to improve tolerability for older adults while optimizing clinical outcomes, for example, treatment schedule or fractionation, patient positioning, and dementia-focused interventions†	96%	4.81	0.66
4. Give examples of clinical situations in which radiation therapy may not be the treatment option of choice for an older adult (where evidence does not support net clinical benefit)†	93%	4.76	0.81
	93%	4.68	0.78

(*Continued*)

Table 2 (*Continued*)

Learning outcome	Total consensus percentage achieved*	Mean	Standard deviation
5. Discuss the role and rationale of brachytherapy as an alternative to external beam radiation therapy in older adults in both curative and palliative settings			
6. Discuss the role and rationale of stereotactic radiation therapy in older adults†	96%	4.78	0.63
Explain the role and rationale for the use of image fusion (incorporating data from multiple imaging studies) in the radiation therapy planning process for older adults	65%	3.81	1.35
Discuss the role and rationale of injectable radioactive agents and radioembolization as palliative therapy in older adults (For consumers: radioactive agents are radioactive drugs given by injection that can be used treat some cancers. Radioembolization is a procedure in which small radioactive beads are placed inside blood vessels that feed a tumor.)	88%	4.41	1.01
Discuss the role and rationale of proton and heavy ion therapy in older adults (For consumers: proton therapy uses a beam of protons to target a tumor and heavy ion therapy uses a beam of carbon ions to target a tumor.)	68%	3.85	1.28
Discuss the various management options for skin cancer and appropriate adaptations in older adults	91%	4.70	0.74
E. Palliative and supportive care for the older adult with cancer			
1. Demonstrate an understanding of how pharmacokinetics and pharmacodynamics of medications commonly used in symptom control can be altered in older adults with cancer†	93%	4.58	0.76
2. Integrate a geriatric assessment into end-of-life care†	92%	4.49	0.82
3. Discuss the effect of comorbidities on prognosis and symptoms in older adults with cancer	99%	4.85	0.46
Demonstrate the ability to evaluate and integrate the health status and needs of older caregivers into end-of-life planning	88%	4.47	0.88
F. Communication with the older adult with cancer			
1. Demonstrate ability to recognize the differences between cognitive impairment and capacity†	99%	4.91	0.41
2. Describe the key components required for an older adult with cancer to demonstrate they have capacity to make decisions about their treatment†	99%	4.91	0.41
3. Demonstrate understanding of the role and the relevant local legalization for a surrogate decision-maker in cases in which an older adult is unable to make decisions regarding medical treatments†	100%	4.84	0.37
4. Demonstrate an ability to elicit and integrate an older adult's priorities and goals of care†	100%	4.93	0.25
5. Demonstrate ability to communicate with an older adult's family, friends, and caregivers whose information needs and opinions may diverge from those of the patient†	96%	4.77	0.67
Demonstrate ability to obtain designation of an older adult's caregiver who may assist patient during oncology treatment	82%	4.38	0.96
G. Research- and evidence-based education in geriatric oncology			
1. Demonstrate awareness of the barriers to clinical trial participation for older adults with cancer	96%	4.68	0.55
2. Describe endpoints in clinical trials that may be of greater relevance to older adults with cancer†	97%	4.59	0.60
3. Apply current internationally recognized guidelines and recommendations regarding best practices and specific treatment approaches for older adults with cancer†	100%	4.91	0.30
4. Demonstrate the ability to integrate emerging geriatric oncology evidence into clinical reasoning and/or practice	95%	4.76	0.54
Discuss alternative clinical trial designs for older patient populations	82%	4.15	0.97
Demonstrate awareness of the need for improved training and education in geriatrics and geriatric oncology training in the global oncology workforce	82%	4.35	0.97
Critically evaluate oncology trials that include older adults	86%	4.49	0.82
H. Biology of aging and cancer			
Explain concepts regarding the biology of aging (including cellular damage and the process of aging, the concept of survivor effects and late-life mortality deceleration versus Gompertz-Makeham law of aging)	69%	3.85	1.05
Explain the biology of cancer in older adults and how it may affect oncologic treatment	89%	4.57	0.88
I. Cancer screening in the aging population			
Demonstrate awareness of the existing evidence for and limitations of screening programs for common cancers in the elderly population	88%	4.42	0.77

(*Continued*)

Table 2 (*Continued*)

Learning outcome	Total consensus percentage achieved*	Mean	Standard deviation
J. Systemic therapy: Special considerations in the older adult with cancer			
Demonstrate understanding of the variables that influence pharmacokinetics and pharmacodynamics of anticancer agents in older adults†	95%	4.69	0.720
Describe how geriatric assessment-related factors correlate with chemotherapy-induced toxic effects†	91%	4.46	0.797
Where responsible for the administration of systemic therapy, demonstrate an ability to use supportive care measures for older adults receiving systemic therapy	93%	4.68	0.704
Discuss the age-related toxic effects of different chemotherapy classes, including hormone therapies, signal transduction inhibitors, gene expression modulators, apoptosis inducers, angiogenesis inhibitors, immunotherapies, and monoclonal antibodies	86%	4.38	0.947
Explain the relevance of renal, hepatic, and cardiac function, comorbidities, and past reactions for older adults undergoing systemic therapy	88%	4.51	0.940
Demonstrate an awareness of risk prediction models for severe side effects from chemotherapy in older adults that are available	84%	4.32	0.846
Where responsible for the administration of systemic therapy, demonstrate an ability to appropriately consider renal and hepatic function, labs, comorbidities, and past reactions when prescribing systemic therapy for older adults	85%	4.49	1.050
Where responsible for the administration of systemic therapy, demonstrate an ability to make appropriate dose adjustments for older adults receiving systemic therapy	89%	4.57	1.074
K. Surgery: Special considerations in the older adult with cancer			
Demonstrate awareness of the importance of perioperative management including preoperative assessment tools for older adults	68%	3.78	1.24
Demonstrate awareness that geriatric assessment can predict complications, postoperative mortality, and hospital stay in older adults	85%	4.28	0.97
Demonstrate awareness of the age-related peri- and postoperative risks associated with surgery and anesthesia versus potential benefit in common cancers of older adults	76%	4.08	1.16
L. Health advocacy for the older adult with cancer			
Demonstrate awareness of the issues affecting patient access to coordinated geriatric oncology and geriatric programs worldwide	74%	3.91	0.97
Apply expertise and influence, whether individually or as part of a group, to improve cancer services on behalf of older adults with cancer	85%	4.18	0.94
Define elder abuse and how it may be recognized in older adults and appropriate measures to be taken	86%	4.39	0.84
Understand the needs of particularly vulnerable groups (eg, patients with dementia) undergoing cancer treatment and optimal care	95%	4.73	0.65

* Ninety percent of responses fall within the Likert scale of inclusion categories defined as "definitely include" or "possibly include".
† Learning item reworded by expert reference panel.
Outcomes A2, B1, B7, and B8 did not reach 90% consensus in round 1 specifically owing to problematic wording or clarity. These outcomes were reviewed in the expert reference panel and subsequently deemed for inclusion after appropriate rewording and edits. Unnumbered learning items were ultimately excluded.

number of publications to include patients and caregivers in a Delphi consensus process for curriculum development across all areas of health care.[38]

This study was also successful in adopting a global approach, which was intentional for several reasons. First, the need to improve care for the rapidly rising numbers of older adults with cancer is a global problem.[3,4,20] The authors also recognize that the medical workforce and medical education as a discipline is already globalizing.[47] Therefore, the application of a worldwide approach to an educational challenge within RO was deemed most appropriate. Given RO is also a relatively small specialty with an increasingly interactive international community, a global approach may provide efficiencies in improving dissemination and standardization as findings are adopted.[47]

Furthermore, although there is no universal agreement on the ideal sample size for Delphi studies, the response rate of 60% in round 1 and 52% in round 2 of the Delphi process was high in comparison to similar Delphi and survey-based studies.[33,46,48] We attribute the attrition of participants between the 2 rounds to the common phenomenon of survey fatigue. This effect was anticipated by the authors and strategies to minimize survey fatigue were used, including providing detailed feedback regarding round 1 results to participants and ensuring the estimated time taken to complete round 2 was kept as short as possible and clearly communicated.

The authors note several potential limitations of this study. Although there are advantages to the global approach to developing learning outcomes, as outlined earlier, it is recognized that as training bodies apply findings to their regional settings, adaptations will be required. It will be important that learning outcomes are adjusted to ensure relevance to local health system and population contexts.

Similarly, although members of the ERP and Delphi participants were from a broad array of geographic locations, there was a marked skew toward Australia, North America, and the United Kingdom. There was limited representation from lower- and middle-income and non-English speaking countries, emphasizing again the likely need for local modifications. Lastly, the period in which the final data analysis and manuscript write up for this study coincided with the onset of the COVID-19 pandemic with disruption to academic and clinical working arrangements delaying study completion. The authors believe that the pandemic will have little effect over the longer term on the significance or relevance of the final results.

RO trainees are the end-knowledge targets of this research, and the authors acknowledge that proportionally the number of trainees included is relatively low with a total 4 completing the 2 Delphi rounds. However, this is arguably appropriate to this design stage of the curriculum development process. A previous education needs analysis was conducted directly with RO trainees by our group, which demonstrated many RO trainees self-rated their knowledge around geriatrics and geriatric oncology as very low.[28] This may limit many trainees' ability to contribute to the development geriatric oncology focused learning outcomes, simply due to a lack of basic knowledge around the subject matter itself. It may also account for the low numbers of trainees who met eligibility criteria, given the early stage of their careers and hence lack of high-level expertise in education, curriculum design, geriatrics, and geriatric oncology. Conversely, a relatively high proportion of qualified radiation and clinical oncologists who have been in clinical practice for 1 to 5 years (20 in total) did participate in the Delphi rounds. Arguably these "early career" clinicians are well placed to represent the trainee perspective (having recently completed training) but concurrently have the appropriate expertise and knowledge to develop the learning outcomes.

This study is the first key step in developing a comprehensive, globally applicable geriatric RO curriculum aimed at improving future radiation oncologist's ability to care for older adults. The next priority in building a complete competency-based curriculum is to design, implement and evaluate novel learning interventions to integrate learning in this area within existing training programs. Learning, assessment, and feedback tools will need to be developed to complement these learning outcomes. Training program structures and where learning best fits into current programs will require consideration. Collaboration with the geriatric oncology expert community will be fundamental to ensuring that RO educators and supervisors are adequately upskilled to design, deliver, and assess geriatric RO content. Only with ongoing educational research and curriculum development dedicated to geriatric RO learning will we ensure the next generation of radiation oncologists can provide optimal care for the rapidly growing number of older adults with cancer.

References

1. World Health Organization. World report on ageing and health. Available at: https://apps.who.int/iris/handle/10665/186463. Accessed June 30, 2022.
2. National Cancer Intelligence Network. Older people and cancer. Available at: www.ncin.org.uk/view?rid=2950. Accessed January 11, 2018.
3. Balducci L, Ershler WB. Cancer and ageing: A nexus at several levels. *Nat Rev Cancer* 2005;5:655–662.
4. Yancik R. Population aging and cancer: A cross-national concern. *Cancer J* 2005;11:437–441.
5. Wildiers H, Heeren P, Puts M, et al. International Society of Geriatric Oncology consensus on geriatric assessment in older patients with cancer. *J Clin Oncol* 2014;32:2595–2603.
6. Mohile SG, Xian Y, Dale W, et al. Association of a cancer diagnosis with vulnerability and frailty in older medicare beneficiaries. *J Natl Cancer Inst* 2009;101:1206–1215.
7. Bouchardy C, Rapiti E, Blagojevic S, Vlastos A-T, Vlastos G. Older female cancer patients: importance, causes, and consequences of undertreatment. *J Clin Oncol* 2007;25:1858–1869.
8. Fentiman IS, Tirelli U, Monfardini S, et al. Cancer in the elderly: Why so badly treated? *Lancet* 1990;335:1020–1022.
9. Hutchins LF, Unger JM, Crowley JJ, Coltman Jr CA, Albain KS. Underrepresentation of patients 65 years of age or older in cancer-treatment trials. *New Engl J Med* 1999;341:2061–2067.
10. Murthy VH, Krumholz HM, Gross CP. Participation in cancer clinical trials: Race-, sex-, and age-based disparities. *JAMA* 2004;291:2720–2726.
11. Puts M, Hardt J, Monette J, Girre V, Springall E, Alibhai S. Use of geriatric assessment for older adults in the oncology setting: A systematic review. *J Natl Cancer Inst* 2012;104:1134–1164.
12. Kimmick G, White H. Getting beyond screening for frailty in older patients with cancer. *J Geriatr Oncol* 2014;5:8–10.
13. Hamaker ME, Jonker JM, de Rooij SE, Vos AG, Smorenburg CH, van Munster BC. Frailty screening methods for predicting outcome of a comprehensive geriatric assessment in elderly patients with cancer: A systematic review. *Lancet Oncol* 2012;13:e437–e444.
14. Rostoft S, O'Donovan A, Soubeyran P, Alibhai SMH, Hamaker ME. Geriatric assessment and management in cancer. *J Clin Oncol* 2021;39:2058–2067.
15. Mohile SG, Mohamed M, Xu H, et al. A geriatric assessment (GA) intervention for older patients with advanced cancer: Secondary outcomes from a University of Rochester cancer center NCI community oncology research program cluster randomized controlled trial (CRCT). *J Clin Oncol* 2020;38:33.
16. Kirkhus L, Benth JŠ, Rostoft S, et al. Geriatric assessment is superior to oncologists' clinical judgement in identifying frailty. *Br J Cancer* 2017;117:470–477.
17. Li D, Sun CL, Kim H, et al. Geriatric assessment-driven intervention (GAIN) on chemotherapy-related toxic effects in older adults with cancer: A randomized clinical trial. *JAMA Oncol* 2021;7:e214158.
18. To T, Devitt B, Lane H. Is geriatric assessment being incorporated into general oncology? *J Geriatr Oncol* 2014;5:219–220.
19. O'Donovan A, Mohile S, Leech M. Expert consensus panel guidelines on geriatric assessment in oncology. *Eur J Cancer Care (Engl)* 2015;24:574–589.
20. Extermann M, Aapro M, Audisio R, et al. Main priorities for the development of geriatric oncology: A worldwide expert perspective. *J Geriatr Oncol* 2011;2:270–273.
21. Barton MB, Jacob S, Shafiq J, et al. Estimating the demand for radiotherapy from the evidence: A review of changes from 2003 to 2012. *Radiother Oncol* 2014;112:140–144.
22. Chen H, Laba JM, Boldt RG, et al. Stereotactic ablative radiation therapy versus surgery in early lung cancer: A meta-analysis of propensity score studies. *Int J Radiat Oncol Biol Phys* 2018;101:186–194.
23. Palma DA, Olson R, Harrow S, et al. Stereotactic ablative radiotherapy versus standard of care palliative treatment in patients with oligometastatic cancers (SABR-COMET): A randomised, phase 2, open-label trial. *Lancet* 2019;393:2051–2058.

24. Brunt AM, Haviland JS, Wheatley DA, et al. Hypofractionated breast radiotherapy for 1 week versus 3 weeks (FAST-Forward): 5-year efficacy and late normal tissue effects results from a multicentre, non-inferiority, randomised, phase 3 trial. *Lancet* 2020;395:1613–1626.
25. Morgan SC, Hoffman K, Loblaw DA, et al. Hypofractionated radiation therapy for localized prostate cancer: Executive summary of an ASTRO, ASCO, and AUA evidence-based guideline. *Pract Radiat Oncol* 2018;8:354–360.
26. McAleese J, Baluch S, Drinkwater K, Bassett P, Hanna G. The elderly are less likely to receive recommended radical radiotherapy for non-small cell lung cancer. *Clin Oncol* 2017;29:593–600.
27. O'Donovan A, Morris L. Palliative radiation therapy in older adults with cancer: Age-related considerations. *Clin Oncol (R Coll Radiol)* 2020;32:766–774.
28. Morris L, Thiruthaneeswaran N, Lehman M, Hasselburg G, Turner S. Are future radiation oncologists equipped with the knowledge to manage elderly patients with cancer? *Int J Radiat Oncol Biol Phys* 2017;98:743–747.
29. Leifer R, Bristow B, Puts M, et al. National survey among radiation oncology residents related to their needs in geriatric oncology. *J Cancer Educ* 2019;34:9–13.
30. Akthar AS, Hellekson CD, Ganai S, et al. Interdisciplinary oncology education: A national survey of trainees and program directors in the United States. *J Cancer Educ* 2018;33:622–626.
31. Kalsi T, Payne S, Brodie H, Mansi J, Wang Y, Harari D. Are the UK oncology trainees adequately informed about the needs of older people with cancer? *Br J Cancer* 2013;108:1936–1941.
32. Dittrich C, Kosty M, Jezdic S, et al. ESMO/ASCO recommendations for a Global Curriculum (GC) in medical oncology-edition 2016. *Ann Oncol* 2016;27:1378–1381.
33. Okoli C, Pawlowski SD. The Delphi method as a research tool: An example, design considerations and applications. *Information & Management* 2004;42:15–29.
34. Niederberger M, Spranger J. Delphi technique in health sciences: A map. *Front Public Health* 2020;8:457.
35. Bandiera G, Sherbino J, Frank JR. *The CanMEDS Assessment Tools Handbook: An Introductory Guide to Assessment Methods for the CanMEDS Competencies*. Ontario, Canada: Royal College of Physicians and Surgeons of Canada; 2006.
36. World Heath Organization. Elder abuse fact sheet. Available at: https://www.who.int/news-room/fact-sheets/detail/elder-abuse. Accessed June 30, 2022.
37. Giuliani ME, Gillan C, Milne RA, Uchino M, Millar B-A, Catton P. Determining an imaging literacy curriculum for radiation oncologists: An international Delphi study. *Int J Radiat Oncol Biol Phys* 2014;88:961–966.
38. Turner S, Seel M, Trotter T, et al. Defining a leader role curriculum for radiation oncology: A global Delphi consensus study. *Radiother Oncol* 2017;123:331–336.
39. Oar A, Yap ML, Rodin D, McNiven A, Papadakos J, Giuliani M. Postgraduate global health competency profile for radiation oncology. *Clin Oncol (R Coll Radiol)* 2018;30:810–816.
40. Adleman J, Gillan C, Caissie A, et al. Development of a quality and safety competency curriculum for radiation oncology residency: An international Delphi study. *Int J Radiat Oncol Biol Phys* 2017;98:428–437.
41. Zygowski N, Bristow B, McGuffin M. Radiation therapists' knowledge and attitudes regarding specialized clinics for geriatric assessment of older women with early stage breast cancer: A cross sectional study. *J Geriatr Oncol* 2021;12:1107–1109.
42. Hsu T, Soto-Perez-de-Celis E, Burhenn PS, et al. Educating healthcare providers in geriatric oncology: A call to accelerate progress through identifying the gaps in knowledge. *J Geriatr Oncol* 2020;11:1023–1027.
43. Naeim A, Hurria A, Rao A, Cohen H, Heflin M, Seo P. The need for an aging and cancer curriculum for hematology/oncology trainees. *J Geriatr Oncol* 2010;1:109–113.
44. Maggiore RJ, Dale W, Hurria A, et al. Hematology-oncology fellows' training in geriatrics and geriatric oncology: Findings from an American Society of Clinical Oncology—sponsored national survey. *J Oncol Pract* 2017;13:e900–e908.
45. Moy B, Flaig TW, Muss HB, Clark B, Tse W, Windham TC. Geriatric oncology for the 21st century: A call for action. *J Oncol Pract* 2014;10:241–243.
46. Hsu T, Kessler ER, Parker IR, et al. Identifying geriatric oncology competencies for medical oncology trainees: A modified Delphi consensus study. *Oncologist* 2020;25:591.
47. Turner S, Eriksen JG, Trotter T, et al. Establishing a global radiation oncology collaboration in education (grace): Objectives and priorities. *Radiother Oncol* 2015;117:188–192.
48. Keeney S, Hasson F, McKenna H. The Delphi technique in nursing and health research. *Int J Nurs Stud* 2001;38:195–200.