

# Geriatrics Curriculum Needs Assessment for Dermatology Residency Programs

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## ABSTRACT

**Background** Geriatric patients account for a growing proportion of dermatology clinic visits. Although their biopsychosocial needs differ from those of younger adults, there are no geriatrics training requirements for dermatology residency programs.

**Objective** This study explored the state of geriatrics education in dermatology programs in 2016.

**Methods** This constructivist study employed cross-sectional, mixed-methods analysis with triangulation of semistructured interviews, surveys, and commonly used curricular materials. We used purposive sampling of 5 US academic allopathic dermatology programs of different sizes, geographic locations, and institutional resources. Participants were interviewed about informal curricula, barriers, and suggestions for improving geriatrics education, and they also completed a survey about the geriatrics topics that should be taught. The constant comparative method with grounded theory was used for qualitative analysis. We identified formal geriatrics curricular content by electronically searching and counting relevant key texts.

**Results** Fourteen of 17 participants (82%) agreed to be interviewed, and 10 of 14 (71%) responded to the survey. Themes of what should be taught included diagnosing and managing skin diseases common in older adults, holistic treatment, cosmetic dermatology, benign skin aging, and the basic science of aging. Topics currently covered that could be expanded included communication, systems-based challenges, ethical issues, safe prescribing, quality improvement, and elder abuse. Cosmetic dermatology was the most commonly taught formal geriatrics curricular topic.

**Conclusions** There were discrepancies among topics participants felt were important to teach about geriatric dermatology and curricular coverage of these areas. We identified challenges for expanding geriatrics curricula and potential solutions.

## Introduction

Approximately one-third of dermatology clinic visits in the United States are made by patients aged 65 years and older, and that number is expected to increase as the baby boomers' cohort age and life expectancy rise.<sup>1-3</sup> Older adults are often more medically complex and have added medical and psychosocial needs.<sup>4,5</sup> Failure to address them can result in substantial health care costs and morbidity.<sup>6</sup>

All graduating medical students, regardless of planned specialty, should achieve some minimum basic geriatrics knowledge,<sup>7</sup> yet only 23% of medical schools in 2012 required a geriatrics clerkship.<sup>8</sup> If deliberate geriatrics objectives and explicit learning opportunities are not created, trainees may not learn the nuances of managing older adults.<sup>9</sup>

In light of the growing population of geriatric patients, the National Academy of Medicine recommended that geriatrics be included in graduate

medical education to address patient safety and quality concerns of older adults.<sup>10,11</sup> The quality and quantity of geriatrics training in dermatology programs are currently unknown.

This study explored geriatric dermatology curricula in a sample of dermatology programs from the perspectives of residents, program directors, and faculty. We studied (1) formal didactic curricula; (2) informal curricula (such as teaching in clinical settings); (3) topics interviewees perceived as important to teach; and (4) perceived barriers and potential solutions for expanding geriatrics curricula.

## Methods

We used a constructivist theoretical paradigm with a mixed-methods approach, which allows triangulation to improve trustworthiness. Data sources were program directors, faculty, residents, and curricular materials. Data collection modalities were interviews, surveys, and content analysis of curricula in 2016.

## Setting and Participants

Purposive sampling is used in grounded theory research to collect data "considered likely to provide rich information relevant to [the research]."<sup>12</sup> We

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*Editor's Note: The online version of this article contains geriatrics content within published textbooks and board review materials; triangulated themes and representative quotes from aggregated interviews, surveys, and curricular content analysis; and survey results of faculty and residents.*

used this method to achieve coverage of US dermatology residency programs to improve trustworthiness and transferability with respect to the following characteristics: program size, faculty experience, community-based versus academic center programs, and the presence or absence of affiliated Veterans Administration (VA) hospital and geriatrics fellowship programs.

We contacted 10 institutions chosen from the National Resident Matching Program list based on the aforementioned criteria. Three institutions did not respond, and 2 declined to participate, citing lack of time or interest.

Interview participants were identified through snowball sampling, starting with program directors and programs' websites. TABLE 1 summarizes program characteristics and demographics of the participating institutions and interviewees.

The institutional review boards at the University of Wisconsin and University of Illinois at Chicago approved this study as minimal risk and exempt.

### Data Collection and Analysis

**Interviews and Surveys:** The lead author (J.E.) conducted semistructured interviews of faculty, program and associate program directors, and senior residents to understand the informal curriculum and

#### What was known and gap

With the aging of the US population, the share of geriatric patients in dermatology clinics has grown.

#### What is new

A study of formal and informal geriatric dermatology curricula found variance between the importance assigned to topics by some stakeholders and curricular coverage of these areas.

#### Limitations

Small sample, response, and social desirability bias limit transferability.

#### Bottom line

The authors identified challenges for expanding geriatrics curricula and proposed potential solutions.

interviewees' perceptions of what should be taught. The 20- to 30-minute interviews comprised 14 questions with follow-up probes and 1 open-ended question asking for general comments about geriatrics education training. We used Green's PRECEDE-PROCEED model to design questions. It explores barriers and potential solutions to change: *predisposing factors* that include individuals' attitudes or existing skills that explain the status quo; *enabling factors*, such as additional resources or skills that are necessary to realize change; and *reinforcing factors* of systems-based rewards and disincentives that sustain or impede change.<sup>13-16</sup> We anticipated that programs

**TABLE 1**  
Program Characteristics and Interviewee Demographics

Characteristic	Program A	Program B	Program C	Program D	Program E
Region	Midwest	Mountain	Midwest	East	West
Program size <sup>a</sup>	Medium	Medium	Small	Medium	Large
Affiliated with VA	Yes	Yes	No	No	Yes
% Time residents spend at VA	25	30	N/A	N/A	20
Individuals interviewed	Program director, faculty, resident	Program director, faculty, resident	Program director, faculty	Program director, associate program director, resident	Program director, faculty, resident
Median years of clinical practice of interviewed faculty	23	8	9	5	22
% Continuity clinic patients ≥ 65 years	20-25	30-80 (depending whether resident had a VA continuity clinic)	40	> 50	< 25
Curricular materials reviewed	Last PIF, PowerPoint didactics	Last PIF	Problem-based learning cases	Conference schedule	Online repository of journal articles, resident rotation guide

Abbreviations: VA, Veterans Affairs; N/A, not applicable; PIF, program information form.

<sup>a</sup> Program size was arbitrarily defined as the number of categorical residents compared with the average national dermatology program size based on 2016 National Resident Matching Program match statistics: small, ≤ 9; medium, 10-15; large, > 15.

might not include geriatrics and explored the *null curriculum*, a framework that explores what is *not* taught and why.<sup>17,18</sup>

Interviews were recorded, transcribed, and edited. After analyses were completed, we shared the themes with interviewees via e-mail to solicit reactions or disagreements (member checking).

Participants were invited to complete an 11-item survey about current curricular coverage of geriatrics topics and their interest in expanding them. One item solicited open-ended comments about teaching content the program has added or would like to add beyond the topics in the survey. Survey content was based on a literature search of geriatrics topics in other health professions and specialties. Geriatrics and dermatology medical educators and dermatology residents tested the items to improve wording.<sup>7,19–25</sup>

**Formal Curricular Materials:** We analyzed required reading material for didactic sessions that were used by the sampled programs and other US training programs.<sup>26</sup> These materials included dermatology e-textbooks edited by Bologna et al<sup>27</sup> and James et al<sup>28</sup>; Jain's board review (e-version)<sup>29</sup>; and the online Educational Testing and Assessment Systems Derm In-Review board review question bank and supplemental study guide.<sup>30</sup> We also requested didactic materials from interviewed sites. Availability and format varied, and all but 1 program had primarily resident-led didactics. Two institutions had ad hoc journal club or conference discussions about geriatrics, and 1 program had problem-based learning modules that included geriatrics.

Two authors (J.E. and A.A.) analyzed the content by searching for and counting relevant and unique keyword search instances within formal curricular materials, using search terms synonymous with geriatrics or aging.<sup>7,19–22</sup> We iteratively tested and adjusted search terms within each data source to verify relevance until theme saturation was reached, covering electronic textbooks, PowerPoint files, and Acrobat XI and Kindle files.

Authors J.E. and A.A. used the constant comparative method associated with grounded theory<sup>31</sup> to analyze all data. As curricular themes were identified, we iteratively checked how well they fit all data sources and modified or regrouped themes.<sup>32</sup> We met to discuss and reconcile coding discrepancies, and S.R. independently audited 10% of the data codes. We categorized formal curricular content by the 6 Accreditation Council for Graduate Medical Education (ACGME) core competencies: medical knowledge, patient care, interpersonal and communication skills, professionalism, systems-based practice, and practice-based learning and improvement.<sup>33</sup>

## Results

### Demographics and Response Rates

We purposively sampled from all intended geographic regions except the southern/southwestern United States. The 5 institutions that declined to participate from this region were otherwise comparable with the purposive sampling criteria (eg, size, affiliation with VA).

While interviewees felt that geriatrics was important to teach, none of the 5 responding sites had conducted a geriatrics needs assessment. Two programs that were not VA affiliated more frequently self-reported continuity clinic encounters with geriatric patients than larger programs that were VA affiliated. These sites served a largely rural population. Seventeen potential interviewees were contacted, and 14 agreed to participate (82% response rate). The survey response rate was 71% (10 of 14).

### Informal Curricula

The informal curricula varied by program (TABLE 2). Programs reported covering skin tumors, patient adherence, safe prescribing and drug reactions, patient and caregiver communication, end-of-life ethics decisions, and common conditions and skin eruptions in geriatrics. Fewer programs covered elder abuse, cosmetic dermatology, and pruritus. One reported a grand rounds presentation on common findings in geriatric skin.

### Formal Curricula

Within published textbooks and study materials, the pages or review questions that covered geriatrics topics were relatively low, ranging from < 1% of didactic PowerPoint slides (49 of 16 997) to 18% of cases (11 of 61) in 1 program's comprehensive problem-based learning curriculum (provided as online supplemental material). TABLE 3 summarizes the geriatrics topics covered within all analyzed formal curricular materials. Frequent geriatrics topics were cosmetic dermatology, basic science of aging, skin cancers, and rashes. Most covered geriatrics topics were categorized by the ACGME competency of medical knowledge, followed by patient care.

### Geriatrics Topics That Should Be Taught

Triangulated themes from interviews and surveys (provided as online supplemental material) about what geriatrics topics *should* be taught overlapped with the formal and informal curricula, when materials were analyzed in aggregate. They included diagnosing and treating skin diseases in older adults,

**TABLE 2**  
Informal Curriculum Topics by Program From Interviews With Residents and Faculty

Geriatrics Topic	Program A	Program B	Program C	Program D	Program E
Abuse	X				
Adherence	X		X	X	X
Basic science/pathophysiology		X		X	X
Benign findings		X	X	X	
Consent			X	X	
Coordinating care with other providers	X		X		
Cosmetics				X	
Dementia	X		X	X	
End-of-life ethics decisions		X	X	X	X
Patient and caregiver communication	X		X	X	X
Pruritus					X
Safe prescribing/drug reactions	X	X	X	X	X
Skin eruptions	X	X	X	X	X
Skin tumors	X	X	X	X	X
Wound healing/ulcers			X		X

treating older adults holistically, cosmetic dermatology, benign skin findings in older adults, and the basic science of skin aging.

Opinions about the ideal quantity and quality of curricula somewhat varied among survey respondents (provided as online supplemental material). None of

**TABLE 3**  
Geriatrics Topics Within All Analyzed Formal Curricula<sup>a</sup>

Topic	Total Number of Search Hits
Cosmetics	255
Basic science, aging physiology, procedural anatomy	177
Skin tumors	172
Cutaneous eruptions, excluding drug rashes	132
Benign skin findings	114
Adverse drug reactions and safe prescribing	76
Infectious diseases	61
Dermatopathology	22
Elder abuse	16
Pruritus and xerosis	16
End-of-life and palliative care	11
Billing and coding	10
Care coordination with other specialists	10
Ulcers and wound healing	9
Communicating with family and care providers	4
Health care power of attorney and consent	1
Self-neglect	1

<sup>a</sup> Some search hits might have been coded in more than 1 category, when relevant.

the faculty respondents felt existing geriatrics topics were covered excessively. Based on the survey responses, the areas of greatest need for curricular coverage are overcoming communication barriers with older adults, helping older adults identify resources and overcome systems-based care challenges, addressing ethical issues in geriatrics, applying best practices for safely prescribing medications, involving residents in quality improvement projects to improve care for older adults, and managing elder abuse. A larger proportion of faculty than residents felt that assessing for decision-making capacity should be expanded.

### Barriers and Solutions for Integrating Geriatrics Into Curricula

TABLE 4 summarizes barriers and potential solutions to improving geriatrics curricula. There are 4 *predisposing factors* that explain the status quo of geriatric dermatology education. First, residents and faculty lack formal training in geriatric dermatology. Second, while participants assumed that geriatrics was sufficiently taught in existing curricula, our results highlighted areas for improvement. Third, there are inadequate teaching materials and potential imbalance among topics being taught. Fourth, some curricular materials highlight negative societal views about skin aging and expectations for dermatologists to “fix” it.

There are 4 *enabling factors* to help improve geriatric dermatology, including alignment of local needs and resources and having geriatricians or general dermatologists who see older adults teach geriatrics concepts. Second, programs should

**TABLE 4**  
Barriers to Improving Geriatrics Education and Potential Solutions<sup>a</sup>

Category	Representative Quotes
<b>Predisposing</b>	
Lack of experience	“When our residents come to us, their general medical knowledge about the geriatric population is highly variable.” –F
Assumption that geriatrics is already sufficiently taught	“When I think of the geriatric population [and] medications like... immunosuppressive medications... I would like to know about [that] at the VA. But we’re limited by what we can actually prescribe there [due to the formulary].” –R
Imbalance of geriatrics teaching content	“We don’t have a textbook on geriatric dermatology like we do for pediatric dermatology.” –R
Negative societal views about aging skin	“The sheer number of patients demanding medical therapy or procedural intervention to rejuvenate their skin mandates that dermatologists be well versed in this area.” –B
<b>Enabling</b>	
Consideration of local program and population needs and resources	“Our [residents] are seeing a lot more elderly patients so it’s much more likely to make it into my standard curriculum that I deliver... But if I were at a program [that generally saw younger patients] I don’t think their priorities would be the same.” –PD
Consistency and integration of geriatrics	“[Lectures] that would bring everybody up to speed... What is elderly skin, what about polypharmacy... end-of-life... general concepts of geriatric care that I think internists get but [not dermatology residents during internship].” –F “I think our exposure to geriatric patients is sprinkled throughout multiple clinics and multiple sites, whereas in pediatrics [it is] more concrete and defined through our Children’s Hospital.” –F
Faculty development and teaching resources	“Having [a small number of] premade modules would certainly take us forward a lot further than having to make them on our own... I think the only barrier beyond that [is] just getting the person teaching it comfortable with it.” –PD “It depends... a lot on... the attending in a busy clinic recognizing the opportunity to do... 1-minute precepting, or just learning through experience that there are ways to communicate with older people that are different than... a typical adult or even a child—so different in those 2 populations, thinking about the issues of comorbidities... Sometimes both we as attendings and the residents don’t recognize those informal opportunities.” –PD
Research to guide evidence-based practice and teaching	“The science of geriatric immunology and other [geriatric dermatology topics] lags way behind [general geriatrics knowledge].” –F
<b>Reinforcing</b>	
Competing clinical productivity and financial pressures	“There’s certainly less salary support to devote time to curriculum development. You’re being encouraged to see more patients.” –F
Existing accreditation and certification requirements	“I don’t remember any specific [board examination] questions [in which] the stem really focused on [geriatrics]... You were supposed to think in the context of the elderly patient, minus the Kodachrome... I don’t know that there was a question about identifying morphology that makes you think of elder abuse, or nutritional deficiency.” –F “I really think that nationally our curriculum is focused on the esoteric.” –Associate PD

Abbreviations: F, faculty; VA, Veterans Affairs; R, resident; B, Bologna textbook; PD, program director.

<sup>a</sup> Green’s PRECEDE–PROCEED model was used to categorize predisposing factors (eg, attitudes, skills that explain the status quo), enabling factors (eg, attitudes, resources, skills necessary for desired change), and reinforcing factors (eg, that which could sustain or impede change).

integrate geriatrics into the formal and informal curricula. Third, faculty expressed a need for faculty development in this area. Fourth, more research is needed to inform evidence-based recommendations for improving care and education.

There are 2 *reinforcing factors* that seem to be systems-based challenges, including an already full curriculum and busy clinics, and the lack of certification or accreditation requirements for geriatric dermatology.

## Discussion

In this mixed-methods analysis of geriatrics curriculum content in representative dermatology programs, smaller institutions had more continuity clinic encounters with older patients than larger programs. There was overlap between what is taught and what respondents perceived should be taught, with some gaps in communication, resources for older adults to navigate systems-based challenges, geriatrics ethical issues, safe prescribing, and managing elder abuse. Available teaching materials focused predominantly on ACGME medical knowledge competencies, with cosmetic dermatology being the most commonly represented.

Geriatrics educational needs and competencies of dermatologists have not been well characterized. Other specialties, including anesthesiology, emergency medicine, neurology, obstetrics and gynecology, orthopedic surgery, psychiatry, surgery, and urology, have acknowledged the importance of geriatrics and recommended clinical experiences working with older adults.<sup>21</sup> However, the quantity and granularity of what is *actually* taught in other specialties varies and might not always align with the intended curriculum. This study identified some geriatrics topics that overlap with requirements from other specialties (eg, using appropriate communication techniques, reconciling medications, and facilitating care transitions).<sup>20,34</sup> Some of the methods of exploring the *intended* and *needed* versus *actual* curricula may be applicable to other specialties.

Residency education programs periodically need to review and realign curricula with respect to societal needs.<sup>35</sup> Simply adding more content risks learner cognitive overload. Our analysis of formal curriculum content showed that training in cosmetic dermatology, which is required by the ACGME, is the most commonly covered topic. Other geriatric dermatology topics identified in survey responses as potential areas of educational need (that are not existing accreditation requirements) may be overshadowed by cosmetics. Thus, residency programs might need to consider rebalancing the amount of time spent on cosmetic dermatology and emphasize other geriatrics topics.

A challenge for expanding geriatrics education is overcoming the perceived burden of reviewing and updating existing curricula by maximizing enabling factors and anticipating reinforcing factors. If academic dermatologists and accrediting and certifying bodies explicitly required geriatric dermatology education, programs would be incentivized to include it.

Several survey responses suggested that quality improvement projects might improve educational opportunities and patient care while aligning with ACGME requirements. A quality improvement–based approach might reduce faculty discomfort about lacking geriatrics training.<sup>36,37</sup> Projects could collect data about practice patterns and patient outcomes. Potential examples include chart review of prescribing patterns of first-generation antihistamines, fall risk in phototherapy booths, and dermatology patient hand-offs with nursing homes.

Study limitations include a small sample size, which limits transferability, and the potential for respondent self-selection and social desirability response biases. Also, most programs did not archive lectures and didactics, which limited sampling.

Further research is needed to measure geriatric dermatology knowledge, skills, and attitudes. Qualitative studies might shed further light on the hidden curriculum—the educational contexts and processes that drive policies, resource allocation, and the culture of education.<sup>38,39</sup>

## Conclusion

Dermatology residencies' formal and informal curricula and available resource materials suggest gaps in geriatrics topics needed to safely and effectively care for older adults, a major subpopulation of dermatology patients. These gaps included medication prescribing, ethical dilemmas, communication skills, and resources for older patients. In contrast, cosmetic dermatology was overrepresented in available curricula.

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