Waiting Times to See a Dermatologist Are Perceived as Too Long by Dermatologists

Implications for the Dermatology Workforce

Tina Suneja, MD; Edward D. Smith; G. John Chen, PhD; Kory J. Zipperstein, MD; Alan B. Fleischer, Jr, MD; Steven R. Feldman, MD, PhD

Background: The issue of workforce requirements in dermatology has come to attention in recent years because it affects the delivery of dermatologic care in the United States.

Objective: To determine the waiting times for appointments with dermatologists in order to assess the adequacy of the current level of dermatology workforce.

Methods: Waiting times were determined for new and return patient appointments by telephone survey of a random sample of American Academy of Dermatology members. Physicians’ perception of the adequacy of the number of practicing dermatologists in their area was used as a criterion standard to validate waiting times as a measure of workforce adequacy. Benchmark waiting times of 3 weeks for a new patient appointment and 2 weeks for a return appointment were established.

Results: Physicians’ estimates of the waiting time for a new patient appointment and their perceptions of the adequacy of the number of practicing dermatologists in their area were closely correlated ($r = -0.65; P < 0.001$), validating the use of waiting times as a measure of workforce adequacy. More than 60% of the dermatologists surveyed exceeded the criterion cutoff waiting times, and more than 42% of the US population lives in areas underserved by dermatologists. Dermatologists practicing in areas of higher population density were more likely to have shorter waiting times for new patient appointments and were more likely to include cosmetic dermatology in their practices.

Conclusion: The long waiting times for appointments suggests that the current supply of dermatologists is not adequate to meet the demand for dermatologists’ services.

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THE ECONOMIC disincentives used in some managed care systems to reduce the use of specialist services have been of concern to dermatologists.1-3 Patients enrolled in a health maintenance organization are less likely to have their skin care provided by dermatologists than are patients with commercial insurance.4 The percentage of skin disease visits in the United States managed by dermatologists has decreased from 50% in 1973 to 33% in 1995, and the number of patients seen per dermatologist per year is decreasing.3,5 These changes have been interpreted as being indications of an “over-supply” of dermatologists as well as a need to reduce the “production” of new dermatologists.

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A number of other forces may be increasing demand for dermatologist services, however. Managed care systems may be increasing their use of dermatologists, at least in part in recognition of the cost-effectiveness of dermatologists in the treatment of patients with skin disease.7 Increased use of point-of-service options and reduced use of strict “gatekeeping” managed care systems may also promote greater demand for dermatologists.8 The scope of dermatologic practice is broadening owing to recent advances in cosmetic services; these services reduce the dermatologic workforce resources that can be devoted to medical dermatologic patients.9,10 The success of efforts to promote public awareness of skin disease and of dermatologists’ expertise may increase demand for dermatologic services. Patients prefer direct access to dermatologists for delivery of dermatologic health care.11,12 While not increasing demand directly, a growing number of physicians leaving the workforce early as a result of regulatory changes and managed care hassles would support the need to increase, at least temporarily, the number of dermatologists in training.13
PARTICIPANTS AND METHODS

This study was conducted in 2 phases. Phase A consisted of a brief Internet survey distributed to practicing dermatologists who are members of an Internet dermatology discussion group. Participation in the survey was voluntary, and all responses were kept confidential. The survey inquired about the estimated waiting time for nonemergent new and established patient appointments as well as the zip code of the primary practice location. In addition, the participants were asked if they were searching for a partner, how long they had been searching, and whether they believed the number of practicing dermatologists in their geographic area was adequate, sufficient, or excessive. They were also asked how many hours they spent weekly seeing patients, how many patients were seen weekly, and what percentage of their practice was cosmetic (defined as nonpayable by insurance carriers). Participants were also asked for their estimation of the number of dermatologists practicing in their geographic area and for the approximate population of the draw area of their primary practice. Demographic information describing the phase A dermatologists were not collected; we did compare the waiting times of phase A and phase B dermatologists to assess the similarities of these populations.

Phase B consisted of a telephone survey of 200 practicing dermatologists who were randomly selected using a 2-part randomization scheme from the membership roster of the American Academy of Dermatology. Only practicing dermatologists in the United States were included in the telephone survey (residents and fellows were excluded). The first 100 dermatologists randomly selected were asked about waiting time (in days) for a new, nonemergent patient appointment. The second 100 dermatologists were asked about waiting time (in days) for an established, nonemergent patient appointment. One dermatologist who was on sabbatical was excluded from calculations of mean waiting time.

All 200 dermatologists were asked for the zip code of the office relating to the patient appointment. The ZIP code data were then used to assess the population density (population in thousands per square mile) for the county in which the physician’s practice was located using 1990 US Census Bureau data. Using the ZIP code, the population of the county in which the physician’s practice was located was determined. The urban and rural populations could not be determined for 9 ZIP codes that were not included in the census on-line database. County population densities could not be determined for 47 ZIP codes.

All data were entered into a spreadsheet (using Microsoft Excel). The data were analyzed using Pearson correlation coefficients and SAS software (SAS Institute, Cary, NC).

Decreasing visits per dermatologist per year could reflect chosen practice patterns rather than a decrease in demand for dermatologists’ services. Similarly, the decreasing proportion of skin care provided by dermatologists could reflect a lack of dermatologic workforce needed to care for the growing demand. These measures cannot distinguish cause from effect. A more specific measure of workforce needs in dermatology is needed.

The number of days between the request for and the date of a new or return patient appointment with dermatologists may be such a measure. At steady state, long waiting times for patient appointments would indicate a need for more dermatologists. The purpose of this article is to determine the waiting times for appointments with dermatologists in order to assess the adequacy of the current level of dermatology workforce. We validate this approach by using physicians’ qualitative and quantitative perceptions of the adequacy of the number of practicing dermatologists in their geographic areas as a criterion standard. We supplemented the analysis of waiting times with other measures of workforce needs, such as physician demand for partners, proportion of practice spent on cosmetic dermatology, and geographic differences in the distribution of physicians.

RESULTS

VALIDITY OF WAITING TIMES AS A MEASURE OF WORKFORCE NEEDS

The Internet survey yielded 31 responses from dermatologists (Table 1). In response to their perception of the number of dermatologists practicing in their geographic area, 9 (29%) dermatologists believed that the number was “somewhat too few,” 6 (19%) believed that the number was “far too few,” 8 (26%) reported that the number was “just enough,” 5 (16%) believed that the number was “somewhat too many,” and 3 (10%) perceived the number to be “far too many.” Their estimation of the waiting time for a new patient appointment and their perceptions of the adequacy of the number of practicing dermatologists in their area were negatively correlated ($r = -0.65; P < .001$). There was considerable overlap in the range of waiting times for the different perceived dermatology workforce levels (Table 2). Published benchmarks for waiting times for patient appointments range from 7 to more than 12 days. Based on the mean values and existing benchmarks, criterion cutoffs of 3 weeks to wait for a new patient appointment and 2 weeks to wait for a return patient appointment were established.

<table>
<thead>
<tr>
<th>Table 1. Responses of Dermatologists to the Internet Survey</th>
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<tbody>
<tr>
<td>Waiting time for a new patient appointment, d*</td>
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<tr>
<td>Waiting time for an established patient appointment, d*</td>
</tr>
<tr>
<td>No. of patients seen weekly*</td>
</tr>
<tr>
<td>Hours spent weekly seeing patients*</td>
</tr>
<tr>
<td>Proportion of practice that is cosmetic dermatology, %*</td>
</tr>
<tr>
<td>Dermatologists searching for a partner, %</td>
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<tr>
<td>Search time for a partner, mo*</td>
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*Values are given as mean ± SD (median).
Table 2. Comparison of Waiting Times and Population Density to Perceived Dermatology Workforce Levels*

<table>
<thead>
<tr>
<th>Density to Perceived Dermatology Workforce Levels</th>
<th>Too Few Dermatologists</th>
<th>Just Enough Dermatologists</th>
<th>Too Many Dermatologists</th>
</tr>
</thead>
<tbody>
<tr>
<td>New patient waiting time, d</td>
<td>Range 18-84</td>
<td>2-70</td>
<td>2-42</td>
</tr>
<tr>
<td>Mean ± SD (median)</td>
<td>50 ± 20 (49)</td>
<td>24 ± 23 (23)</td>
<td>16 ± 15 (14)</td>
</tr>
<tr>
<td>Established patient waiting time, d</td>
<td>Range 21-84</td>
<td>2-25</td>
<td>2-28</td>
</tr>
<tr>
<td>Mean ± SD (median)</td>
<td>38 ± 17 (35)</td>
<td>14 ± 9 (21)</td>
<td>10 ± 20 (12)</td>
</tr>
<tr>
<td>County population density</td>
<td>Range 163.0-3050</td>
<td>28.0-2183</td>
<td>680.8-15 502</td>
</tr>
<tr>
<td>Mean</td>
<td>770 000</td>
<td>766 000</td>
<td>4 044 000</td>
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</table>

*Based on an Internet survey of dermatologists. The responses “too few” and “far too few” were combined, as were the responses “too many” and “far too many.”

ASSESSMENT OF OVERALL WORKFORCE NEEDS

Of the 100 dermatologists surveyed for waiting time for new patient appointments, 11 (11%) were not accepting new patient appointments. For the remaining 89 dermatologists, the waiting time for a new patient appointment ranged from 0 to 197 days; the mean ± SD waiting time was 33 ± 32 days. Sixty-four percent of the appointments exceeded the criterion cutoff of 3 weeks. Of the 100 physicians surveyed for waiting time for established patient appointments, the waiting time for an appointment ranged from 1 to 132 days. The waiting time for an established patient appointment was 32 ± 30 days. Sixty-three percent of the appointments exceeded the 2-week criterion cutoff for established patients. These results suggest that, at least from the perspective of dermatologists, there is an undersupply of dermatologists in the United States.

To estimate a benchmark number for the appropriate number of dermatologists needed, we used the Internet survey data to compare the number of dermatologists per 100 000 persons with the perceived level of the dermatology workforce by practicing dermatologists (Table 3). Dermatologists’ estimate for the number of practicing colleagues in their geographic area was divided by the reported estimated population of the draw area of their practice. Based on these data, we estimate that at least 3.3 dermatologists per 100 000 persons are required to meet the demand for dermatologic services. Estimates of the current number of dermatologists in practice (excluding residents and fellows) range from 8050 to 836017 (Frank Lamantia, American Academy of Dermatology, and Jean Modaffare, American Board of Dermatology, oral communication, July 15, 2000). With a US population of approximately 275 million,14 we estimate that at least 9075 practicing dermatologists are needed at the present time to adequately provide dermatologic care to the population.

Table 3. Comparison of Perceived Dermatology Workforce Levels With the Estimated Number of Dermatologists per 100 000 Persons*

<table>
<thead>
<tr>
<th>No. of Dermatologists per 100 000 Persons, Mean (Median)</th>
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<tbody>
<tr>
<td>Far too few</td>
</tr>
<tr>
<td>Too few</td>
</tr>
<tr>
<td>Just right</td>
</tr>
<tr>
<td>Too many</td>
</tr>
<tr>
<td>Far too many</td>
</tr>
</tbody>
</table>

*Based on an Internet survey of dermatologists.

GEOGRAPHICAL VARIATION IN THE DERMATOLOGY WORKFORCE

An overall undersupply of dermatologists does not preclude an oversupply in certain geographical areas. Dermatologists tend to practice in areas of higher population density. Only 3 (1.5%) of the 200 randomly selected dermatologists were found to practice in rural areas (as defined by the US Census Bureau). Approximately 182 million persons live in the counties served by the 189 dermatologists included in the telephone survey. A total of 111 of 189 dermatologists had waiting times above the cutoff values of 3 weeks for new patient appointments and 2 weeks for established patient appointments. The total population for the counties where these 111 physicians practiced was 77 million. Approximately 28% of the total US population lives in geographic areas that are underserved by the present number of practicing dermatologists in those areas.

Waiting times for new and return appointments were inversely related to the population density in both the Internet and the randomized surveys. As the county population density increases, the waiting time for a new patient appointment decreases ($P < .05$). Moreover, the relationship between physicians’ perceptions of the adequacy of number of practicing dermatologists in their area and the population density of the county in which the physicians practice was significant ($P < .01$). Dermatologists practicing in areas of higher population density were more likely to include cosmetic dermatology in their practices ($P < .01$).

VALIDITY OF WAITING TIMES AS A MEASURE OF WORKFORCE NEEDS

The similar waiting time results between the Internet survey and the larger telephone survey (for new patient appointments, 34.3 days vs 32.6 days) suggest that the respondents to the Internet survey were representative of dermatologist practices in the United States. Longer waiting times for patient appointments were more likely to occur in areas of lower population density and in geographic areas where practicing dermatologists perceived the number of practicing colleagues to be too few. The strong inverse correlation between physicians’
qualitative perceptions of the number of practicing dermatologists in their area and waiting time for patient appointments validates the use of waiting time as a primary outcome that can be used to estimate workforce needs. In addition, waiting time is a structural indicator and measurable parameter of quality in delivery of dermatologic health care. Nevertheless, in considering the validation of waiting times as a measure of workforce needs, we should keep in mind that not everyone would agree with the use of physicians’ perspectives as a “gold standard.”

In creating our wait-time benchmark criteria for undersupply, we chose to be very conservative. First, our benchmarks are based on the perceptions of dermatologists. While a 2-week waiting time for an appointment may seem appropriate to a physician, patients’ expectations are much shorter. For established patient visits other than routine care, such as checkups or preventive care, patients expect appointments in 7 days or less (internal data, Kaiser-Permanente, San Francisco, Calif, August 2000). Second, the 3-week waiting time for a new patient appointment that we chose to use as a criterion is considerably longer than published benchmarks. By choosing such a conservative criterion waiting time to define undersupply, we feel confident that an undersupply of dermatologic services truly exists when it is identified by this methodology.

**OVERALL WORKFORCE NEEDS ASSESSMENT**

More than 60% of the dermatologists’ practices surveyed exceeded the criterion cutoff waiting time for new and established patient appointment times. Clearly, based on the perception of dermatologists, the number of dermatologists currently in practice has not adequately met the demands of the population. Undersupply is a concept that is relatively easily understood and one that requires correction. It can be examined from the perspective of patients as well as practicing dermatologists. Long waiting times for appointments, the inability to find partners, and the overwhelming patient demand for services all point to an undersupply, even when viewed from the perspective of physicians. In the short run, demand that exceeds supply leads to an increase in price. When the monetary “price” is fixed, as it is to a great extent in the traditional market for medical care, the market forces lead to queuing of demand, whereby waiting time adds to the effective cost and lowers the effective quality of care.

In the long run, excess demand should lead to an increase in supply; in this case, to more dermatologists. The supply of dermatologists, however, is limited by the capacity of residency programs to train residents. A myriad of factors prevent programs from training more residents: a freeze on Medicare funding of new residency positions, Medicare’s emphasis on training “primary care” physicians, and the flow of residency training programs through hospitals that see little value in using available funds to support the training of residents in a specialty that is nearly exclusively based in the outpatient setting. Thus, the supply of dermatologists has become inelastic to the level of demand. The forces to increase the supply of dermatologists will not be denied, however, and are manifest by increasing use of physician extenders (physician assistants) to provide dermatologic care. The long-term effects on the specialty of dermatology remain to be seen.

A major limitation of this study’s ability to assess the true magnitude of the population underserved by dermatologists is that the survey does not even consider the most underserved areas; those areas without a dermatologist were not surveyed! Thus, we find that in areas where there are dermatologists, there are generally not enough. The situation is even worse in those health service areas that do not yet have a dermatologist. An increase in the supply of dermatologists is needed to meet public need. Considering that dermatologists provide primary care for patients with skin disease, modification of national policies on the training of dermatologic specialists is warranted. Efforts in this area will need to consider the overall complexity of physician workforce patterns and regulation and their impact on the cost of health care.

Other creative ways to meet the acute need for dermatologic care should be studied: education of primary care providers, greater use of physician extenders, and reorganization of the role of the dermatologist in the context of the health care system. Telemedicine may have a role in this process. Nonetheless, unless more dermatologists become available, the traditional role of dermatologists as direct providers of skin care will change.

**GEOGRAPHICAL VARIATION IN DERMATOLOGY WORKFORCE**

There is extensive geographic variability in the distribution of dermatologists and the dermatologic services they provide. Geographic variation can lead to the paradoxical finding of oversupply in some areas at the same time there is a general undersupply. Should this finding influence the decision to train more dermatologists? Oversupply seems a bit more difficult to define from the perspective of the dermatologist. In this case, there is the report of oversupply in certain geographic areas, but dermatologists still choose to practice in those areas. From the perspective of the dermatologist, practicing in an area of oversupply is of greater value than practicing in underserved areas, where dermatologists’ services are greatly needed. True oversupply might occur if it causes an increase in service price and/or quantity (eg, if dermatologists can induced by recommending treatments and procedures that are not truly necessary). The greater provision of cosmetic services that we observed to be provided by dermatologists in areas with greater density of dermatologists may represent a response to oversupply. Conversely, it may represent numerous other factors, such as (1) socioeconomic differences in urban patients favoring greater demand for cosmetic services and (2) greater interest in cosmetic dermatology expressed by those dermatologists who choose to practice in urban areas). Unless oversupply can be shown to adversely affect the public (through induced demand by dermatologists), societal
efforts to reduce the overall supply of dermatologists are misguided.

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Corresponding author and reprints: Steven R. Feldman, MD, PhD, Department of Dermatology, Wake Forest University School of Medicine, Medical Center Boulevard, Winston-Salem, NC 27157-1071 (e-mail: sfeldman@wfubmc.edu).

REFERENCES


News and Notes

The National Registry for Ichthyosis and Related Disorders is seeking enrollment of all patients with inherited disorders of keratinization (except ichthyosis vulgaris). Serum testing for X-linked recessive ichthyosis, as well as molecular diagnosis of selected disorders, is available without charge. We are eager to assist with research efforts, and we welcome proposals. Information and enrollment forms can be downloaded from our Web site. Please contact us to enroll your affected patients or discuss research interests. Phone: (800) 595-1265; e-mail: info@skinregistry.org; Web site: www.skinregistry.org.