Future Supply and Demand for Oncologists

Challenges to Assuring Access to Oncology Services

By Clese Erikson, MPAff, Edward Salsberg, MPA, Gaetano Forte, BA, Suanna Bruinooge, BA, and Michael Goldstein, MD

Abstract

Purpose: To conduct a comprehensive analysis of supply of and demand for oncology services through 2020. This study was commissioned by the Board of Directors of ASCO.

Methods: New data on physician supply gathered from surveys of practicing oncologists, oncology fellows, and fellowship program directors were analyzed, along with 2005 American Medical Association Masterfile data on practicing medical oncologists, hematologists/oncologists, and gynecologic oncologists, to determine the baseline capacity and to forecast visit capacity through 2020. Demand for visits was calculated by applying age-, sex-, and time-from-diagnosis-visit rate data from the National Cancer Institute's analysis of the 1998 to 2002 Surveillance, Epidemiology and End Results (SEER) database to the National Cancer Institute's cancer incidence and prevalence projections. The cancer incidence and prevalence projections were calculated by applying a 3-year average (2000–2002) of age- and sex-specific cancer rates from SEER to the US Census Bureau population projections released on March 2004. The baseline supply and demand forecasts assume no change in cancer care delivery and physician practice patterns. Alternate scenarios were constructed by changing assumptions in the baseline models.

Results: Demand for oncology services is expected to rise rapidly, driven by the aging and growth of the population and improvements in cancer survival rates, at the same time the oncology workforce is aging and retiring in increasing numbers. Demand is expected to rise 48% between 2005 and 2020. The supply of services provided by oncologists during this time is expected to grow more slowly, approximately 14%, based on the current age distribution and practice patterns of oncologists and the number of oncology fellowship positions. This translates into a shortage of 9.4 to 15.0 million visits, or 2,550 to 4,080 oncologists—roughly one-quarter to one-third of the 2005 supply. The baseline projections do not include any alterations based on changes in practice patterns, service use, or cancer treatments. Various alternate scenarios were also developed to show how supply and demand might change under different assumptions.

Conclusions: ASCO, policy makers, and the public have major challenges ahead of them to forestall likely shortages in the capacity to meet future demand for oncology services. A multifaceted strategy will be needed to ensure that Americans have access to oncology services in 2020, as no single action will fill the likely gap between supply and demand. Among the options to consider are increasing the number of oncology fellowship positions, increasing use of nonphysician clinicians, increasing the role of primary care physicians in the care of patients in remission, and redesigning service delivery.

There is growing evidence that the nation is facing a physician shortage, largely driven by the aging of the population and a physician workforce that has not grown to meet the needs of the nation.[1–4] The Census Bureau projects the number of Americans 65 years and older will double between 2000 and 2030.[5] Oncologists care disproportionately for older patients; therefore, the aging of the population will likely increase the demand for oncology services. Age-related growth in cancer rates will also be accompanied by an increasing number of cancer survivors requiring ongoing monitoring and care from oncologists.[6] New therapies will also influence the demand for services. All of this will come at a time when the oncologist workforce is aging and heading into retirement in increasing numbers.[2]

An ASCO study of the oncologist workforce conducted in the mid-1990s found that supply and demand were in equilibrium.[7] The current analysis shows a similar balance in 2005, but projects that this balance will not be sustained into the future. Oncology will not be the only specialty facing future shortages. There has been a recent surge of reports highlighting future specialty shortages, most citing the aging of the population as a key factor leading to increased demand.[8–21] This article presents a summary of the major findings of the Association of American Medical Colleges (AAMC) Center for Workforce Studies report to ASCO on the Oncology Workforce. A copy of the full report can be downloaded from ASCO's Web site (www.asco.org/workforce).

Methods

Data Collection

In collaboration with the ASCO Workforce in Oncology Task Force, the AAMC Center for Workforce Studies

conducted original data collection through surveys of practicing oncologists, oncology fellows, and oncology fellowship program directors. The Survey of Practicing Oncologists was administered in 2006 to a random sample of 4,000 oncologists (including physicians with a primary or secondary specialty of medical oncology, hematology/oncology, gynecologic oncology, and pediatric hematology/oncology) drawn from the American Medical Association (AMA) Masterfile, and received a 42% response rate. The survey included questions on current practice activities, work hours, visit rates, practice setting, use of nurse practitioners and physician assistants, and options for addressing future workforce shortages.

The surveys of entering and exiting fellows were administered by e-mail using contact information provided by ASCO. The survey of exiting fellows was administered in June 2005 to 442 fellows completing training in 2005, and received a 50% response rate; there were questions included on post-training plans and factors influencing post-training activities. The survey of entering fellows was administered in May 2006 to 438 fellows entering training in 2006, and received a 62% response rate; it inquired about reasons for selecting oncology and future career expectations. The survey of oncology program directors was administered in 2005 to 242 directors using contact information provided by ASCO, and received a 67% response rate; it asked questions about the number of fellowship positions available, practice setting of recent graduates, and plans to expand fellowship positions.

In addition, the Center analyzed existing data sources including the AMA Masterfile, a national database of physicians; cancer registry data from the National Cancer Institute's (NCI's) Surveillance, Epidemiology and End Results (SEER) database; US Census Bureau population projections; and board certification data from the American Board of Internal Medicine and the American Board of Gynecology.

The supply-and-demand projections focus exclusively on medical oncologists, hematologists/oncologists, and gynecologic oncologists. Pediatric hematologists/oncologists were included in the data collection activities but were excluded from the modeling and scenarios, as national data on utilization were only available for the Medicare-eligible population.

Supply Forecasting

The supply of oncologists was forecasted from 2005 through 2020 and then converted into visit capacity estimates. The baseline model was initiated in 2005 using a starting count of 10,422 oncologists derived from the AMA Masterfile of physicians and then refined based on analysis of the results of the practitioner survey (Table 1). Based on an analysis of the trends in the number of fellows completing training between 2000 and 2005, 503 new fellows were added to the model annually. Oncologists were separated from active practice due to deaths, retirements, and other departures from practice. The separation rate was based on national age-specific death rates derived from the National Center for Health Statistics[22] and on rates derived from the Survey of Practicing Oncologists.

The forecasted counts of oncologists were then converted to visit capacity using the age-, sex-, and practice setting–specific visit estimates from the 2006 Survey of Practicing Oncologists. A conservative supply estimate was also calculated by removing outliers from the visit rate data. The baseline forecasts assume that the age-, sex-, and practice setting–specific visit rates, the new entrant rate and the departure from practice rates would not change over time.

Demand Forecasting

Based on sex- and age-specific nonpediatric cancer incidence and prevalence estimates, in addition to visit rate data provided by the NCI, a model was developed to forecast the total number of visits to oncologists (utilization rates) in the United States. The NCI calculated the incidence and prevalence projections by applying a 3-year average (2000 to 2002) of age- and sex-specific cancer rates from SEER to the US Census population projections. The model then translated the forecasted number of cancer cases into annual visits based on average annual visit estimates. The translation relied on NCI's analysis of the SEER database (1998 to 2002) for sex-, age-, and time-from-diagnosis (initial 12 months, monitoring phase, and last 12 months of life) visit rate statistics. A conservative demand estimate was also calculated by removing outliers from the visit rate data. As with the oncologist supply forecasting, the oncologist demand forecast period was 2005 through 2020.

The baseline model did not attempt to project alterations in demand caused by changes in practice patterns, service use, or cancer treatments. These factors are considered in alternate supply-and-demand scenarios.

Alternate Scenarios

The baseline forecasts for supply and demand assume the continuation of present patterns (ie, current cancer rates, visit rates, practice patterns, and retirement rates). To assess the potential impact of changes in the status quo both to better prepare for potential changes and to guide possible changes in programs and policies, the baseline visit capacity and visit forecasts were augmented by the development of possible alternate scenarios for the supply of and demand for oncologists. The scenarios were developed by changing a range of assumptions inherent to the baseline forecasting models.

Alternate supply scenario assumptions included: (1) increasing the number of fellowship slots available; (2) productivity gains resulting from the increased use of nurse

Table 1. Visits per Week by Sex, Age, and Practice Setting

Age Group (years)	Visits Per Week					
	Academic		Private Practice		Other	
	Mean	Standard Error	Mean	Standard Error	Mean	Standard Error
Male oncologists						
45-64	63.9	4.7	103.1	2.3	81.2	2.9
Not 45-64	44.5	3.1	83.9	3.0	72.9	5.4
Female oncologists						
45-64	55.5	6.3	90.6	4.7	76.5	5.7
Not 45-64	39.4	4.2	70.5	4.1	57.5	5.0

NOTE. Source: 2006 Survey of Practicing Oncologists.

practitioners and physician assistants; (3) extending the physician supply through delays in physician retirement; (4) productivity increases; and (5) changing visit rates for the newest generation of physicians (ie, decreased productivity for oncologists 45 years or younger in 2005).

Alternate demand scenario assumptions included: (1) a gradual increase in the percentage of incident cancer cases seen by an oncologist, combined with a gradual increase in the mean visit rates for this population; (2) patients 70 years and older adopting higher visit rates similar to those of patients younger than 70 years; (3) increased use of primary care physicians (PCPs) to monitor patients in remission; and (4) increased use of hospice for cancer patients in the last year of life.

Results

Supply of Oncologist Visits

Results from the practitioner survey provided the practice setting and visit rate data that formed the basis of the visit capacity estimates. Visit capacity varied significantly by oncologists' practice setting, age, and sex (Table 1). Practice setting is the greatest determinant of how many patient visits an oncologist is likely to have in a given week, with those in private practice conducting significantly more patient visits compared with those in academic and other settings. Oncologists 45 to 64 years of age see more patients per week than oncologists at the beginning of their careers, or those 65 years or older who are still active in medicine (Table 2). This productivity arc has also been documented in a workforce study of PCPs.[23] Women generally have lower visit rates than men, though the variation is only significant in the private practice setting.

For the baseline supply model, the setting distribution remained constant, with 27% academic, 65% in private practice, and 8% in government or other settings. The sex and age distribution changed as new physicians entered and exited the workforce, with the percentage of female physicians projected to increase from 23% in 2005 to 39% in 2020 and the mean age decreasing from 50.4 to 47.8 years.

Demand for Oncologist Visits

It is well documented that the incidence of cancer is highly related to patient age, as Figure 1 illustrates. Between 2000 and 2030, the US Census Bureau predicts that the population 65 years and older will double, leading to a sharp increase in overall cancer rates.

Not all cancer patients will see an oncologist. The NCI analysis of visit rates provided age-, sex- and time-from-diagnosis visit rates that were then applied to NCI's cancer projections to calculate total annual demand for visits. Assuming there is no change in cancer incidence or utilization patterns between now and 2020, demand for visits is projected to increase from 41 million in 2005 to 61 million in 2020, yielding a 48% increase in overall demand for oncologist visits in 2020.

Baseline Supply and Demand Projections

The supply of oncologists is projected to move from a relatively comfortable state of balance with demand for oncologists in 2005 to a state of acute shortage in 2020, with visit demand growing at a much quicker pace than the number of visits that oncologists can provide (Figure 2). The number of new entrants into the workforce will exceed the number of retirements, leading to a 20% increase in the number of oncologists. However, this will only translate into a 14% increase in visit capacity because a smaller percentage of the workforce will be in the prime productivity cohort (age 45 to 64 years) as older physicians age out of the workforce and are replaced by younger ones.

While visit capacity is projected to increase by 14% between now and 2020, assuming there are no major changes in the utilization of services by cancer patients during the intervening years, demand is projected to increase 48%. Under the scenario of high supply and low demand, the shortage will be 9.5 million visits. Under the scenario of low supply and high demand, the shortage would be as much as

Table 2. Projected Age Distribution of Oncologists, 2005 to 2020

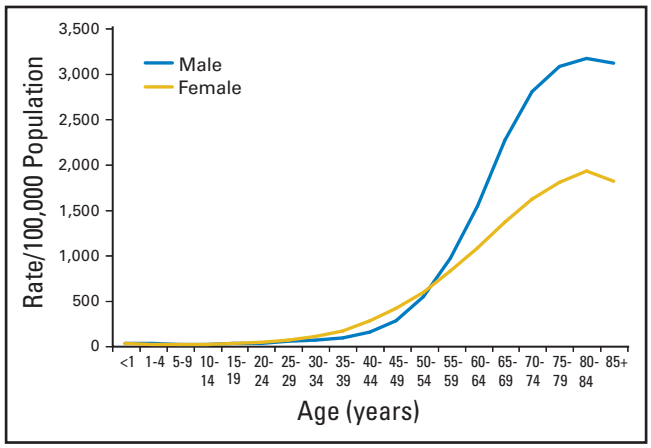
	Year							
	2005		2010		2015		2020	
Age Group (years)	No.	%	No.	%	No.	%	N	%
30-34	260	2.5	936	8.3	1,158	9.7	1,230	9.8
35-39	1,263	12.1	1,527	13.6	1,889	15.9	2,098	16.7
40-44	1,513	14.5	1,501	13.4	1,742	14.6	2,013	16.0
45-49	1,749	16.8	1,613	14.4	1,651	13.9	1,847	14.7
50-54	2,114	20.3	1,792	16.0	1,649	13.9	1,687	13.5
55-59	1,675	16.1	1,805	16.1	1,693	14.2	1,625	13.0
60-64	1,218	11.7	1,339	11.9	1,354	11.4	1,301	10.4
65-69	408	3.9	599	5.3	641	5.4	621	4.9
70+	222	2.1	113	1.0	127	1.0	126	1.0
Total	10,422	100	11,225	100	11,905	100	12,547	100

15.0 million visits. This translates into a shortage of 2,350 to 3,800 oncologists—roughly one-quarter to one-third the available 2005 supply.

Alternate Supply and Demand Scenarios

The baseline supply and demand model assumes there will be no change in cancer incidence and prevalence rates nor in the cancer care delivery system. The supply and demand scenarios presented focus primarily on actionable and plausible assumptions that were developed under the guidance of the ASCO Workforce in Oncology Task Force, and the responses from the surveys. Tables 3 and 4 present how supply and demand could vary under different assumptions compared with the conservative (low) baseline supply and demand estimates. While several of the supply scenarios show potential for increasing visit capacity, even the most aggressive scenario of a phased-in 50% increase in training slots leaves a shortage of 6.4 million visits in 2020. If the younger generation of physicians has lower lifetime productivity than previous generations, the shortage in 2020 could increase by 4.8 million visits. Similarly, alternate demand scenarios demonstrate that, if visit rates for incident cases increase or if patients 70 years or older adopt visit rates that are similar to younger patients, the gap between supply and demand has the potential to nearly double.

Figure 1. Age-specific cancer incidence rates/100,000 population, observed in year 2000. Source: Centers for Disease Control and Prevention, Age-Specific Invasive Cancer Incidence Rates by Primary Site and Race, United States (US Cancer Statistics, 2000).



Discussion

Demand for oncology services is expected to sharply increase throughout the next 15 years—a growth that will be driven by the aging of the population and the age-sensitive nature of cancer, as well as the increase in cancer survivors. Given concurrent aging of the oncology workforce, the current number of training positions and the time and resources needed to expand the supply, the nation is unlikely to be able to meet the future demand with the expected supply of oncologists. Some possible approaches to narrowing the anticipated gap between supply and demand are discussed in this section.

Figure 2. Baseline projected supply of and demand for oncologist visits, 2005 to 2020.

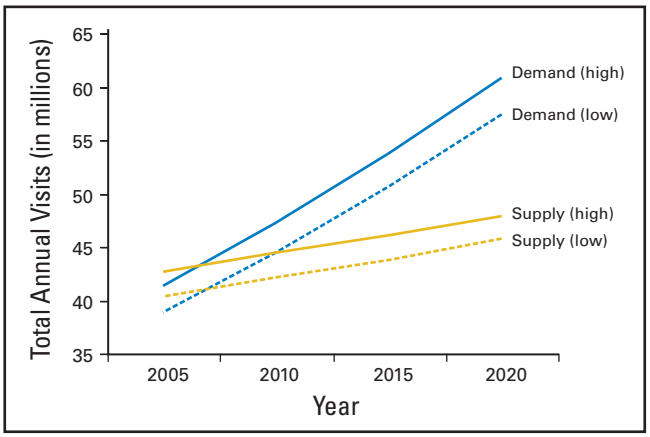


Table 3. Supply Scenarios

Scenario	Assumptions	Potential Yield in 2020 Compared to Low Baseline Supply
Increased number of fellowship slots	Minimum: 8% increase in fellowship positions starting in 2011 Maximum: Phased in 50% increase in fellowship positions between 2011 and 2018	1.3 million to 5.2 million increase in visit capacity
Increased use of electronic medical records	Minimum: Phased in 5% increased visit capacity by 2020 Maximum: Phased in 15% increased visit capacity by 2020	1.5 million to 4.5 million increase in visit capacity
Increased usage of NPs/PAs	Minimum: Phased in increased use of NPs/PAs in traditional roles to 85% of oncologists in 2020 (visit capacity increase of 4% per oncologist) Maximum: Phased in increased use of NPs/PAs in advanced roles (such as assisting with new patient visits, ordering routine chemotherapy, and performing invasive procedures) to 85% of oncologists in 2020 (visit capacity increase of 11% per oncologist)	0.8 million to 3.4 million increase in visit capacity
Delayed retirements	Minimum: 10% of oncologists delay retirement for 5 years Maximum: 50% of oncologists delay retirement for 5 years	0.4 million to 2.1 million increase in visit capacity
Decreased lifetime productivity for new generation of oncologists	Oncologists younger than 45 years in 2005 and all subsequent new oncologists remain at the visit capacity levels of oncologists younger than 45 years through the forecast period.	4.8 million decrease in visit capacity

Abbeviations: NP, nurse practitioner; PA, physician assistant.

Increasing Fellowship Positions

When facing the prospect of physician shortages, one approach is to train more. However, this requires time and resources, and based on a 2005 survey of oncology program directors, current plans for expansion would yield, at most, an 8% increase in available training slots by the 2010–2011 academic year. Even a 50% increase in slots phased in between 2010 and 2018 would leave a significant shortage in visit capacity in 2020. Another major constraint is that the pipeline to medical oncology and hematology/oncology is dependent on physicians completing an internal medicine residency. The number of physicians selecting internal medicine has been relatively constant during the last decade.[24–33] Oncology will be competing with other specialties, many also serving the elderly, as a potential specialty choice of new internists.

Table 4. Demand Scenarios

Scenario	Assumptions	Potential Impact in 2020 Compared With Low Baseline Demand
Increased proportion of incident cancer cases seen by oncologists	2% annual increase in the proportion of incident cancer cases that are treated by oncologists, combined with a 2% annual increase in the number of oncologist visits for this population	Increase of 9.7 million visits
Increased visit rates among cancer patients 70 years and older	Minimum: Difference between oncologist visit rate among cancer patient older than 70 years and those younger than 70 years is halved (those older than 70 years increased) Maximum: Oncologist visit rate among cancer patients older than 70 years raised to equal the oncologist visit rate for those younger than 70 years	Increase of 3.4 million to 7.3 million visits
Increased use of hospice for cancer patients in last year of life	Minimum: 10% reduction in the proportion of cancer patients who see an oncologists in the last 12 months of life Maximum: 20% reduction in the proportion of cancer patients who see an oncologists in the last 12 months of life	0.3 million to 0.6 million fewer visits
Increased use of primary care physicians to monitor cancer patients not in first year of diagnosis or last year of life	Minimum: 10% reduction in the proportion of patients in monitoring phase who see an oncologist Maximum: 20% reduction in the proportion of patients in monitoring phase who see an oncologist	4.5 million to 9.0 million fewer visits

Increasing the Role of PCPs

Increased cancer survivorship is one of the driving forces in demand for oncology services. Two thirds of the projected visits in 2020 will be made by patients who are more than 1 year postdiagnosis. Therefore, having PCPs play a greater role in monitoring patients in remission could potentially alleviate shortages of oncologists. The major constraint on this scenario is the workforce shortage also occurring in primary care.[14,21,34] In addition, PCPs are already facing an expanding scope of practice, which may make their greater participation in oncology care unlikely. Finally, practicing oncologists generally do not think that PCPs will be able to help address shortages according to the 2006 Survey of Practicing Oncologists. Their skepticism could stem from the increasing complexity of cancer care alternatives as well as the discussion of future shortages of PCPs.

Productivity Gains

Inefficiencies in the delivery system, excessive paperwork and regulations, financial disincentives, and other factors are often cited as reducing productivity and effectiveness of physicians. On the 2006 survey of oncologists, electronic medical records (EMRs) were cited as having significant potential to address future shortages, though only 25% of physicians currently use EMRs, and there is limited evidence that use of EMRs actually results in increased productivity.[35,36] This scenario could also be seen as a stand-in for other potential efficiency gains, including reducing paperwork requirements.

Increased Use of Nurse Practitioners and Physician Assistants

Increased use of nurse practitioners (NPs) or physician assistants (PAs) may also improve practice efficiency. According to the practitioner survey, 54% of oncologists already work with NPs/PAs, and on average, have higher weekly visit rates than those who do not. Productivity is highest for physicians who regularly use NPs/PAs for advanced activities such as assisting with new patient consults, ordering routine chemotherapy, and performing invasive procedures. There are also other likely benefits that would stem from increased usage of NPs/PAs in oncology care. The results of the practitioner survey suggest that physicians who work with NPs/PAs believe that use of NPs/PAs improves efficiency and patient care, as well as professional satisfaction.

However, it is unlikely that the numbers of NPs or PAs will be sufficient to bridge the gap between supply and demand for oncology services. First, other specialties will compete with oncology for nurse practitioners and physician assistants. Second, while the number of NPs and PAs has grown rapidly, it is unclear if they will be able to sustain this level of growth.[37,38]

Delaying Retirement of Existing Oncologists

More than half of currently practicing oncologists are 50 years or older and are likely to retire by 2020. It is unclear how likely physicians are to delay retirement, or how willing practices would be to offer incentives, such as part-time hours, to delay retirement and retain their workforce. According to the practitioner survey, the majority of active physicians in their 70s do work part-time, and there is substantial unmet need in terms of physicians who want to work part-time, but who do not have the option in their current work setting. Nearly one third (32%) of physicians ages 50 to 64 years indicated that they were interested in part-time hours, but that the option was not available in their current practice setting. However, there is no way of knowing, based on these data, whether the option to work part-time would lead them to delay retirement or merely to reduce their number of working hours sooner.

Increased Use of Hospice

Increased use of hospice care is plausible but leads to a fairly modest decrease in visits as only 8% of oncologist visits in 2020 are expected to be by patients in their last year of life. It is also important to note that even the modest reduction in visits that was modeled for the hospice scenario likely overestimates the decrease in demand for oncologist visits. While the number of cancer patients using hospice has increased significantly during the last decade, only 37% of hospice patients have stays of more than 30 days, and nearly half have stays of less than 15 days.[39] While the demand scenario for increased hospice use assumed patients had no oncologist visits in the last year of life, current short-term hospice use makes this dramatic shift unlikely.

Potential for Even Greater Shortages

Emerging evidence suggests that younger physicians are increasingly interested in balancing work and private life, which could lead to lower visit capacity for the younger generation of physicians.[40,41] Sixty percent of the respondents to the 2005 survey of fellows completing training in oncology rated balancing work and home life as extremely important in determining post-training plans. Only 20% rated salary/pay as extremely important. It is possible that the next generation of oncologists may practice fewer hours and may therefore have lower lifetime productivity than previous generations. If this is the case, the scenario related to lower productivity for the newest generation of oncologists could be a more accurate reflection of future visit capacity than the baseline supply projections. It will be important to monitor changes in visit rate capacity in the future.

Analysis of the NCI visit data reveals that the percentage of patients who saw an oncologist during the first 12 months postdiagnosis increased by 12% between 1998 and 2002, and the mean visit rates for those patients increased by 25%. This change may reflect the increasing number of treatment options available and the increasing complexity of cancer treatment protocols. Even with a more modest rate of growth, as modeled in the first demand scenario, the gap between supply and demand would nearly double. Given the growth

in adjuvant therapies and the potential for new therapies to be introduced, it is likely that visit rates will continue to increase, though it is unclear at what pace this will occur.

Demand for oncology services could also increase beyond baseline projections if patients 70 years and older have visit rates more comparable with those of younger patients. Baby boomers are already frequently receiving treatments that used to be rare in patients older than 50 years, and overall visit rates for patients ages 50 to 64 years grew by 26% between 1994 and 2001, though they have remained stable since that time.[42,43]

Limitations of the Data

Survey response rate. The surveys of practicing oncologists and oncologists in training that informed the forecasting models were characterized by moderate response rates (42% and 50%, respectively) and entirely self-reported data. The potential for response bias due to nonresponse is, thus, a potential problem. However, a number of steps were taken to alleviate, to the greatest extent possible, this response bias. Analyses of response likelihoods were conducted across many variables, including age, sex, specialty, association membership, and location of medical education. Where appropriate, standard response weighting procedures were implemented to reduce identifiable response bias.

Unpredictability of future health care delivery. The enterprise of forecasting physician supply and demand is an important one.[44,45] However, as has been observed by others, the reliability of this effort is questionable.[46] The predictions seldom seem to come to fruition, as many found out at the end of the 1990s when the projected glut of physicians never appeared. However, a rapidly aging population, coupled with the sobering age-specific cancer incidence rates, requires an understanding of how demand for oncology services and the supply of oncologists will be related in the future. Cognizant of previous failed attempts to forecast physician supply and demand, we have employed a strategy of developing a number of alternate visions of the future to understand the potential trajectories of the supply and demand, rather than predict an absolute figure some 15 years into the future. This strategy also has the advantage of viewing the effects of potential policy decisions (eg, increasing the number of oncology fellowship positions available) on the relationship between supply and demand in the future.

Medicare data for visit rates. Another limitation of the data was the set of statistics derived from the NCI's SEER database on oncologist visit rate and proportion of oncology cases that are treated by an oncologist. The visit data were limited to Medicare claims and thus only represent the experiences of oncology cases involving patients 65 years and older. These data were used to calculate the demand for oncologist visits among adults younger than 65 years as well; specifically, the visit data applied were for those between ages 65 and 70 years. This application could underestimate the true visit rates among the adult, population younger than 65 years, thus underestimating the demand for oncologists.

Aggregated cancer rates. The cancer incidence and prevalence projections are not disease-specific and were developed based on aggregate age- and sex-specific cancer rates. This approach was selected due to data limitations and the uncertainty of future diagnosis, treatment, and survivorship for each cancer type. This limited our ability to reliably model possible decreases in cancer incidence such as the recent evidence of a reduction in breast cancer or possible decreases in cervical cancer that might result from the new cervical cancer vaccine. Similarly, the demand data did not support separate models for gynecologic oncology in the analysis. While supply and demand for gynecologic oncology might be different since it includes surgical cancer treatments, this work is intended to provide an aggregate analysis of demand for oncology services, and not to be oncology-specialty specific.

Conclusion

No single potential remedy will fully address the likely future shortage of oncologists. Furthermore, the expected gap between supply and demand in 2020 could be much larger than baseline projections suggest if younger physicians have lower lifetime productivity than their predecessors and/or if visit rates increase due to changing practice patterns or demand for services. There are opportunities to reduce the gap between projected supply and demand by increasing the number of oncology training slots and by increasing the use of other practitioners such as NPs or PAs, PCPs, and hospice care providers. However, none of these solutions alone can offset the projected shortages.

ASCO, policy makers, and the public face major challenges ahead to forestall likely shortages in the capacity to meet demand for oncology services. The nation is facing a potential crisis, but action taken throughout the next several years can minimize the crisis and may even lead to more effective approaches to delivering high-quality oncology services. More will need to be done to assure that we make the best use of our limited supply of oncologists.

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The authors indicated no potential conflict of interest.

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