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LEGISLATURE  
COMMITTEE HEARING  
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2005-06

(session year)

Assembly

(Assembly, Senate or Joint)

Committee on  
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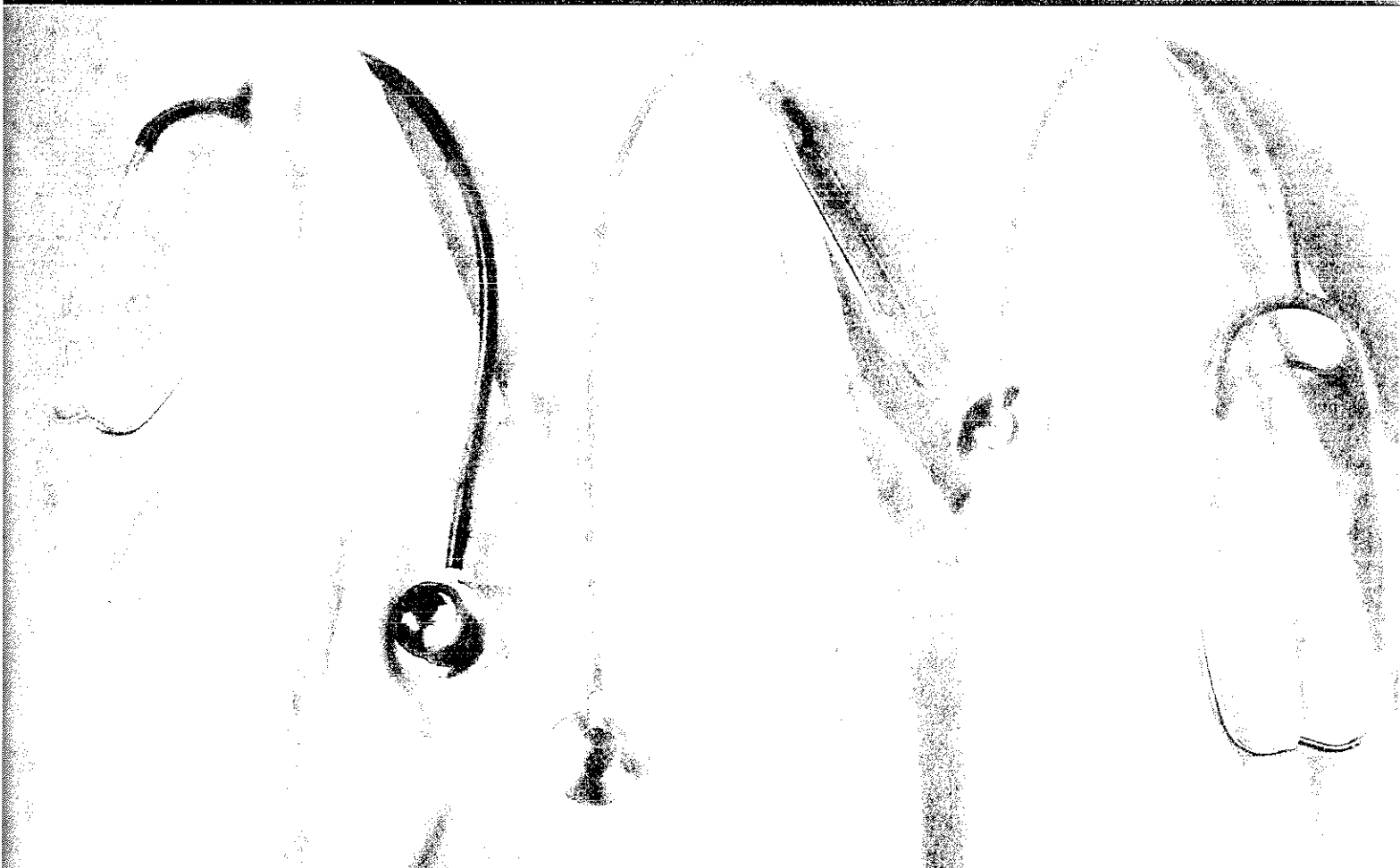
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# Who Will Care For Our Patients?

*Wisconsin Takes Action to Fight a Growing Physician Shortage*



A report by the Wisconsin Hospital Association and the Wisconsin Medical Society.

# Who Will Care For Our Patients?

*Wisconsin Takes Action to Fight a Growing Physician Shortage*

March 2004

A report by the Wisconsin Hospital Association and the Wisconsin Medical Society

# Executive Summary

In early 2003, the Wisconsin Hospital Association, together with the Wisconsin Medical Society, established a Task Force on Wisconsin's Future Physician Workforce. The charge to the Task Force was:

- Undertake a needs assessment of current and future physician supply and distribution issues.
- Identify factors that are impediments to meeting those needs.
- Find specific strategies that will help assure adequate future access to physicians for Wisconsin patients and communities.

The work plan included the following tasks:

- Understand the current supply of physicians in Wisconsin.
- Identify and understand issues relating to estimating physician demand.
- Estimate the current and future demand/need.
- Identify strategies for meeting the specific needs.

Task Force membership included representation from physician practice groups, the Wisconsin Medical Society, the Wisconsin Academy of Family Physicians, hospitals and health systems, the medical schools in Wisconsin and others. Four meetings were held. Information and data were shared that represented a number of perspectives on the issue. This final report provides a comprehensive set of recommended solutions to the physician shortage problem.

## Conclusions Regarding Physician Supply

After reviewing existing data and analysis, the Task Force concluded that an unmet current need exists for physician services and that the problem will likely grow worse in the future unless aggressively managed.

The current supply is not sufficient when measured several different ways:

- There is a shortage of primary care physicians in rural Wisconsin and inner city Milwaukee.
- In general, non-primary specialty physicians are in demand and are hard to recruit on a statewide basis.
- General surgeons and radiologists are critically needed in rural areas.

These unmet needs are projected to grow even more in the future. By 2015, we anticipate demand for physicians to grow:

- By an additional 13.5% for primary care physicians.
- At rates exceeding 20% for all other physicians.

At the same time, physician supply is projected to lag even further, due to projected negligible growth in Wisconsin's physician workforce over the next 10 years. This compares to a projected increase in population of 8.8%, with demographic factors expected to drive demand for health care services in excess of that total.

## Our Action Plan

A number of major changes are necessary to have a sufficient number of physicians to meet the anticipated demand in the future. These changes focus on:

- Enrolling students in medical schools who will practice in Wisconsin.
- Developing new care delivery models.
- Retaining physicians in and attracting physicians to Wisconsin.
- Targeting and enhancing funding for medical education.
- Creating an infrastructure to guide medical education in Wisconsin.

## Goals and Action Steps

GOAL I: Recruit, enroll and train in Wisconsin's medical schools individuals who are likely to practice in Wisconsin, with particular attention towards underserved parts of Wisconsin.

### Action Steps:

- Increase the number of students in medical school.
- Establish goals for medical schools to set and achieve targets for successful recruitment and retention of students from underserved areas.
- Create regional specialty training networks to expose trainees to underserved areas.
- Develop/replicate programs that attract to medical school, students most likely to practice in underserved areas.
- Create a programmatic focus or a "School within a School" to focus on underserved areas.
- Start promoting health careers at the middle school level.

GOAL II: Develop care delivery models that will enhance and leverage physician resources.

### Action Steps:

- Provide funds for pilot projects demonstrating "team care models."
- Conduct pilots and studies of alternative delivery models.
- Prepare medical students and residents to work with advanced practice providers.
- Investigate potential mentoring opportunities using retired, part-time and administrative physicians.
- Evaluate shortening the timeframe for medical education.

GOAL III: Create policy and practice that encourages physicians to enter and remain in practice in Wisconsin. Create similar policies to encourage physicians to return to Wisconsin to practice.

### Action Steps:

- Create funds for loan forgiveness for physicians to stay in the state after their residencies.
- Establish incentives to ensure specialists are adequately dispersed across the state.
- Identify and publish best practices for recruitment and retention.
- Maintain Wisconsin's favorable medical malpractice environment.
- Ensure adequate payment rates to support physician recruitment.
- Provide monetary incentives to address selection of locale and specialty.

GOAL IV: Provide for adequate and targeted funding for medical education.

### Action Steps:

- Increase state funding for medical education.
- Increase Medicaid GME and tie increases to Task Force goals.

GOAL V: Develop an infrastructure to guide medical education policy in Wisconsin.

### Action Steps:

- Create a Wisconsin advisory council to monitor, predict and recommend activities to maintain an adequate supply of physicians for Wisconsin.
- Create a process to maintain adequate data about physician supply and demand.

## Conclusion

These goals and action steps require the efforts of Wisconsin's medical schools, the provider community and policy makers to enact changes in medical education and physician practice. If that work is successful, we can be assured that our future physician workforce will be able to provide needed services to all of Wisconsin's citizens.

## Task Force Members

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## Staff to the Task Force

George Quinn, Senior Vice President, Wisconsin Hospital Association, Madison, WI

Judy Warmuth, Vice President, Wisconsin Hospital Association, Madison, WI

## Introduction

Early in 2003, Wisconsin Hospital Association staff began to hear from member hospitals that they were having increasing difficulties recruiting physicians. While many rural and inner city communities have struggled with this issue for years, the statewide nature of these reports created a new urgency. Information was shared at the WHA Rural Health Council and at the WHA Board of Directors, which led the Board to establish a Task Force on Wisconsin's Future Physician Workforce. WHA also discussed the issue with the Wisconsin Medical Society, resulting in their co-sponsorship of the Task Force. The charge to the Task Force was:

- Conduct a needs assessment to understand current and future physician supply and distribution issues.
- Identify factors that are impediments to meeting those needs.
- Find specific strategies that will help assure adequate future access to physicians for Wisconsin patients and communities.

The charge to the Task Force work plan included the following tasks:

- Understand the current supply of physicians in Wisconsin.
- Identify and understand issues relating to estimating physician demand.
- Estimate the current and future demand/need.
- Identify strategies for meeting the specific needs.

Members of the Task Force included representatives from physician practice groups, the Wisconsin Medical Society, the Wisconsin Academy of Family Physicians, hospitals and health systems, the medical schools in Wisconsin and others. Four meetings were held. Information and data shared represented a number of perspectives on the issue, and the Task Force spent considerable time evaluating the evidence and arriving at potential solutions to the problem.

This document is organized into the following sections:

- A summary of the existing physician workforce in Wisconsin.
- An assessment of whether the current supply is adequate to meet the needs of Wisconsin's citizens now.
- A projection of future demand for physician services.
- A summary of the structure of physician preparation in Wisconsin.
- Analysis and conclusions regarding the supply, demand and education structure.
- A plan for action to address the issues and problems.

## Physicians in Wisconsin

### A Snapshot of the Current Physician Workforce

In 2000 there were 9,533 physicians working in Wisconsin (*Health Counts in Wisconsin*, BHI, 2000). Compared to other states, Wisconsin's 184 physicians per 100,000 population ranked 26 among the states (*HRSA, State Health Workforce Profiles, 2000*).

Physicians are commonly grouped by specialty, either as *primary care physicians* (physicians whose practice is family medicine, internal medicine or pediatrics) account for 34% of the total or as *other specialists* (surgery, radiology, neurology, etc.). The physician workforce reflects other health care workforce demographics in that 29% of the physicians in Wisconsin are over 55 years of age.

### Is the Current Supply Adequate for Today's Needs?

The question of whether there is an adequate supply of physicians should be analyzed along two dimensions – geographic distribution and specialty. In other words, two questions must be answered: "What population and what geographic region are we referring to?" and "Which type of physician specialty – primary or other – are we looking at?"

The question of physician availability is a complex one involving elements of geography, culture and financing. Within the scope of this paper, the focus is not on the various financing mechanisms for health care delivery. But geographic and cultural barriers remain as very important factors that can prevent access to care for many patients, which is the focus on this analysis.

It is important to note that there are distinct differences between rural and urban areas when analyzing access. For rural areas, the issue is largely, although not entirely, one of geographic distance. For residents of rural areas, it may be too time consuming to seek care. In urban areas, on the other hand, residents may be as close as a few blocks from a physician practice, but because of cultural barriers, do not access nearby physician services. In the analysis that follows, we will focus on both of these situations.

The following sources were used to provide a framework for our analysis:

- The American Medical Association 2002 physician data base.
- The 2000 Wisconsin Bureau of Health Information survey of physicians.
- 2000 census data.
- Research in the area of physician supply and demand.

### Primary Care Physicians

In looking at the adequacy of primary care physicians, one could mistakenly conclude that based on statewide averages, Wisconsin's current supply is adequate. The number of primary physicians in 2000 was 68 per 100,000 population. That is above the national average of 59 per 100,000 and well within the range considered as reasonable. *However, the problem with drawing this conclusion is that it ignores the differences in distribution of primary care physicians among individual counties in Wisconsin.* The exhibit below highlights those differences.

County	Primary Physicians Per 100,000
Dane	115
Milwaukee	88
Waukesha	72
Jefferson	42
Iowa	27
Pierce	24
Statewide	68

Source: BHI Physician Survey, 2000

Wisconsin's 72 counties range from a low of 20 primary care physicians per 100,000 people in Florence County to a high of 463 per 100,000 in Wood County (BHI 2000 Survey of Physicians, WHA analysis). The median is 31 physicians per 100,000 population. *Thus, with respect to primary care physicians, Wisconsin appears to have a maldistribution problem, not one of total supply.*

The fact that there are disparities does not, by itself, prove that there is an insufficient supply in those counties at the low end of the distribution. A number of studies have been conducted that attempt to answer the question of "How many are sufficient?"

Donald Libby, PhD and David Kindig, MD, PhD, in their paper "Estimates of Physicians Needed to Supply Underserved Americans Adequately until Universal Coverage," used an "expert average" approach to determining the adequate number of primary physicians, by geographic area. They surveyed a number of researchers who study issues related to the physician workforce and arrived at a consensus number per 100,000 population. The geographic areas were defined around population concentrations.



The resulting matrix is displayed below. It should be noted that this study did not intend to say what was needed but what might be reasonably achievable under current conditions; obviously advocates for rural communities would argue (as the national Council On Graduate Medical Education [COGME] has done) that these "expert averages" are too low for rural communities.

Type of County	"Expert Average" Recommendation per 100,000
Metro Core	72
Metro Fringe	58
Small City	72
Rural	55
Sparse	51

The "Metro Core" geographic unit is further subdivided between areas that include urban shortage areas and those that do not. Urban shortage areas are geographic areas, often very small, that have been defined by the Bureau of Primary Health Care, an agency of the Health Resource and Services Administration, as being medically underserved. Using this construct, WHA compared the number of primary care physicians in each geographic unit to the recommended levels. The results are displayed in the table below.

Geographic Unit	Primary Physicians	2000 Population	Primary Physicians per 100,000	Recommended Average per 100,000	Unmet Need for Primary Physicians
Metro Core	1,137	1,383,248	82	72	77
Metro Fringe	500	943,626	53	58	110
Small City	1,426	1,890,031	75	72	205
Rural	496	862,759	58	55	69
Sparse	114	284,011	40	51	45
Statewide	3,674	5,363,676	68	68	506

Source: 2000 BHI Physician Survey; WHA Analysis

Using the recommended average for primary physicians per 100,000 and applying that to the 2000 population in each of the categories above, this analysis suggests that *there is currently an unmet need for primary physicians in Wisconsin totaling 506*. Note that several geographic areas, in total, appear to have a surplus. Yet a deficit is indicated. This is because a deficit exists for certain counties within those areas, and it is assumed that primary care physicians in neighboring counties will not fill the deficit. While one could make an argument that patients could travel into counties with surpluses to seek primary medical care, this would deny the right of patients to have access to care in their own communities, and ignores the circumstances of those unable to travel. While patients may travel outside of their community to seek specialized care, that is rarely the case for primary medical services. So we make the assumption that if a county shows a deficit, that deficit is valid regardless of whether it is adjacent to a county with a surplus.

With respect to the "Metro Core" area, the calculation shows a deficit of 72 primary physicians in the medically underserved areas of Milwaukee County. As stated above, access issues in urban areas are not necessarily related to distance. Other barriers, including income and ethnicity, often prevent access to care to residents in these areas. So even though the populations in the urban medically underserved areas may be quite close to concentrations of physicians, patients will not access that care.

Even though the overall statewide total appears to be sufficient, the distribution of physicians is skewed toward the urban (but not inner city) areas. The populations of the "Metro Fringe," "Rural," "Sparse," and the medically underserved areas of the "Metro Core" units represent 45% of Wisconsin's population, while having only 35% of primary physicians.

## Specialty Physicians

The methodology used to analyze the need for primary care physicians cannot be applied to specialists. There is no consensus evidenced in the literature on the number of specialists that are needed across a population. Instead, the need for specialists was determined using two sources of information:

- A recent national survey, conducted by Dr. Richard Cooper, of medical school deans and state medical societies.
- Information provided to WHA by The MHA Group, a physician recruitment firm regarding their national experience and in recruiting physicians for Wisconsin.

Cooper's survey, which was published in the December 10, 2003 issue of the *Journal of the American Medical Association*, received responses from 70 medical school deans and 44 state medical societies. Each group was asked to assess the status of the physician supply in their areas or states. In each case, more than 80% of respondents said that they thought there was a shortage of physicians. A summary of their responses is provided in the following table:

**Table.** Perceived Specialty Shortages and Surpluses of Physicians

	No. (%)			
	Medical Schools (n = 70)		Medical Societies (n = 44)	
	Shortages	Surpluses	Shortages	Surpluses
Anesthesiology	35 (50)	1 (1)	10 (23)	
Radiology	31 (44)		5 (14)	
Pathology	0		1 (2)	1 (2)
Family/general practice, general internal medicine, primary care	21 (30)	2 (3)	24 (54)	4 (9)
Pediatrics	5 (7)		2 (4)	
Pediatric subspecialties	8 (11)		3 (7)	
Obstetrics/gynecology	4 (6)		11 (25)	
Medical subspecialties	27 (39)	2 (3)	19 (43)	3 (7)
Cardiology	7 (10)		5 (14)	
Gastroenterology	9 (13)		5 (14)	
Geriatrics	5 (7)		0	
Pulmonary/critical care	3 (4)		3 (7)	
Dermatology	14 (20)		7 (16)	
Neurology	5 (7)		4 (9)	
Surgery (general/trauma)	12 (17)		6 (14)	
Surgery subspecialties	15 (21)		13 (30)	
Neurosurgery	8 (11)		3 (7)	
Orthopedic surgery	3 (4)		8 (18)	
Otolaryngology	3 (4)		1 (2)	
Urology	4 (4)	1 (1)	3 (7)	
Psychiatry	9 (13)		8 (18)	
Child psychiatry	3 (4)		2 (4)	
Emergency medicine	7 (10)		7 (16)	

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JAMA, December 10, 2003—Vol 290, No 22 2993

The two types of respondents differ regarding specialty, and the severity of the shortages is not indicated. However, in the opinion of those who are likely to have some knowledge about the supply of specialists, *there is a shortage in a number of specialty areas.*

The MHA Group provided WHA with the following results from their "2003 Physician Recruitment Trends" report, which is the product of an annual nationwide survey of hospitals and medical groups.

### Specialties Rated "Very Difficult" to Recruit

Radiologist	63%
Orthopedic Surgery	58%
Anesthesiologists	49%
Cardiologists	47%
Rheumatologists	46%
Urologists	42%
Dermatologists	41%

Source: MHA Group, 2003 Physician Recruitment Trends

In addition, The MHA Group shared their national experience regarding the number of physician search engagements that they have had over two time periods. The table below summarizes that comparison.

	Number of Searches in 1997/1998	Number of Searches in 2002/2003	Percent Change
Radiology	11	230	1991%
Orthopedic Surgery	76	191	151%
Cardiology	97	188	94%
Anesthesiology	9	134	1389%
Family Practice	585	122	Minus 79%
Internal Medicine	231	113	Minus 51%
Obstetrics/Gynecology	124	110	Minus 11%
General Surgery	21	84	300%
Gastroenterology	7	69	886%
Psychiatry	42	59	40%

Source: MHA Group, 2003

The first analysis is suggestive of a shortage across a number of specialties such as radiology and orthopedic surgery. The second reveals a shift away from searches for primary physicians in 1997/1998 and towards more specialists in 2002/2003; but also shows a dramatic increase in the number of searches for the ten specialties listed. Overall, searches for the top 10 specialties increased during that period by 8%.

Both of the MHA Group analyses provide a clear indication of the increased demand for specialty physicians. These results represent national totals. Wisconsin data is not available by specialty, but for the same periods, MHA searches for specialists in Wisconsin increased from 38 in 1997/1998 to 60 in 2002/2003, a 58% increase, indicating that at least in terms of using physician recruiting firms, Wisconsin activity greatly exceeded the national averages.

With regard to distribution of specialty physicians within Wisconsin, disparities exist that are similar to those with respect to primary care physicians. The table below compares physician totals per 100,000 for urban and rural areas of Wisconsin.

Geographic Unit	Specialty Physicians	Physicians per 100,000
Metro Core	2,232	152
Metro Fringe	770	90
Small City	2,594	137
Rural	451	49
Sparse	19	8
Statewide	6,066	113

Source: 2000 BHI Physician Survey; WHA Analysis

While the average for the entire state is 113 specialty physicians per 100,000, the range is quite wide: from a low of eight in the "Sparse" geographic unit to a high of 152 in "Metro Core."

### Foreign Born International Medical Graduates

The foreign born international medical graduates (IMG) provide access to care in underserved areas throughout the U.S. Just under a quarter of the nation's physicians are IMGs. They represent a similar percentage among physicians that admit to *Critical Access Hospitals*.

For Wisconsin, IMG physicians represent 16% of total physicians. They enter practice in underserved areas as part of the J1 Visa Waiver Program. The Wisconsin Office of Rural Health, as part of a study of this program, found that these physicians are seen as good providers and work well with staff, but have more difficulty integrating into the community. Two thirds of these physicians were still at their original practice site after three years (the length of the J1 Visa Waiver Program), but this number dropped to 30% after six years. This is far less than non-IMG physicians.

In addition, the application of Homeland Security laws has created more barriers for these physicians to enter the U.S. Recent HHS regulations will also significantly reduce the number of underserved sites that will qualify for this program. IMGs have played an important role in providing access to health care in underserved areas; however, their overall numbers in Wisconsin are small, and regulatory changes will likely limit this further. Because of these considerations, the IMG component of the physician work force in Wisconsin is not one that has potential as a solution to the work force needs.

## Conclusions Regarding Current Supply and Demand

An analysis of the current situation indicates an unmet need for both primary care and specialty physicians in Wisconsin, particularly in rural areas and in the inner city of Milwaukee.

The implications are that patients are increasingly waiting longer to receive care, traveling long distances for that care, or because of these and other barriers, are deciding to not seek necessary medical care.

The implications are that patients are increasingly waiting longer to receive care, traveling long distances for that care, or because of these and other barriers, are deciding to not seek necessary medical care.

One illustration of the impact that lack of access to physician services causes is inappropriate emergency room utilization. WHA conducted a study of emergency room use in hospitals in Milwaukee County by the uninsured. In 2002, almost 36,000 emergency room visits were considered urgent or otherwise non-emergent. Most of these visits took place between the hours of 6 p.m. and 10 p.m.

In addition to the substantial misallocation of resources this involves, this is evidence that needed primary medical care services are not being met in a timely or cost efficient way.

Lack of access to physician services causes inappropriate emergency room utilization.

## What About Future Needs?

The Task Force was also charged with assessing the supply of, and demand for, physician services in the future. This is critical because of the long timeframe, a decade or longer, needed to train physicians. If it is determined that a physician shortage is likely to exist in the future, action must be taken now to begin to address that forecasted shortage.

Making predictions about the future is always fraught with risk. There are many factors that will affect the demand for physician services, most of which no one can forecast with any great degree of confidence. Consequently, the following approach was used:

- Identify factors that influence the supply of and demand for physician services.
- Assess the usefulness of each factor in the forecast.
- Arrive at a set of assumptions about how the remaining factors will change in the future.
- Calculate the supply and demand.

## Factors That Influence the Demand for Physician Services

- Utilization patterns
- Population and demographic factors
- Payment for health care in the future - insurance/payment changes
- Technology
- Reduced need for health care because of better disease management

## Factors That Influence the Supply of Physician Services

- Changes in graduate medical education (GME)
- Physician attitudes and cultural changes
- Changes in the delivery of care
- Technology
- Malpractice environment
- Government policies

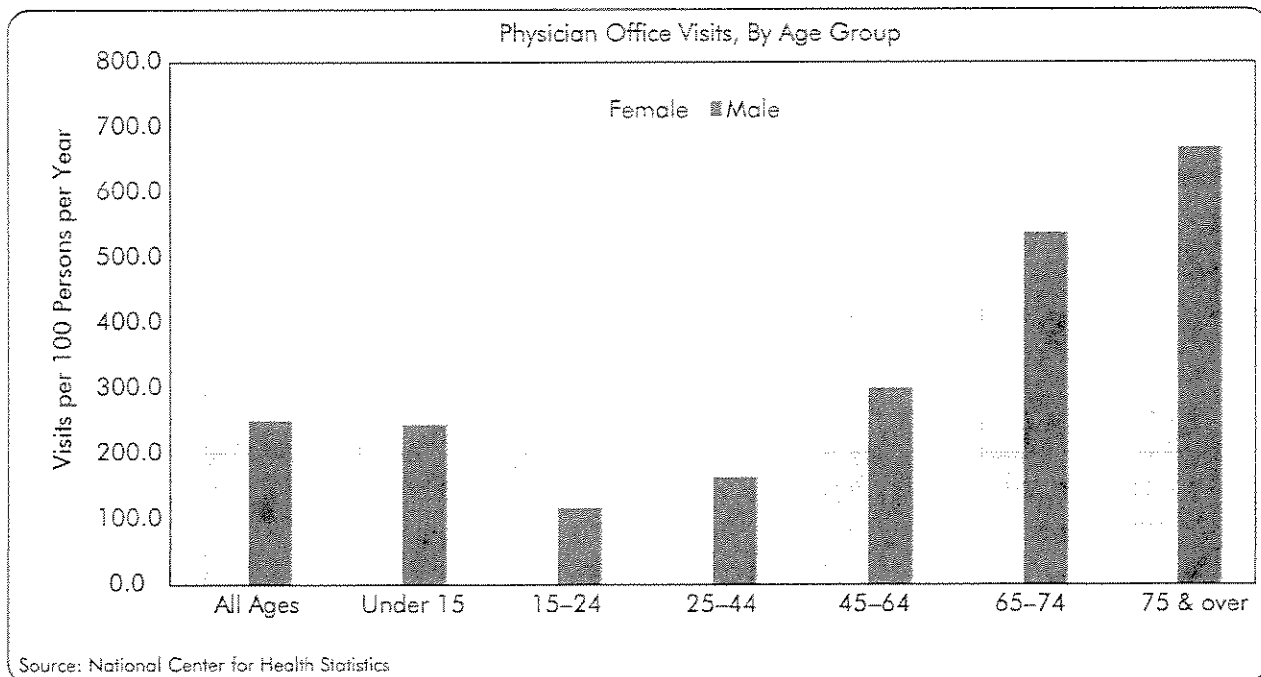
From the lists above, the population and demographic factors and utilization patterns were chosen as tools to project demand. To estimate the supply of physicians, Wisconsin's existing physician workforce was used as a baseline, with those expected to be trained and stay in Wisconsin and those from other states expected to enter practice in Wisconsin added in. Those expected to retire or otherwise leave practice were subtracted from the total. Also factored in was the expected impact of changes in physician work hours. All the other factors were found to be either lacking in adequate documentation or too speculative to project; or they were items that need to change, and therefore were more appropriately incorporated into the Task Force's recommendations.

## Utilization Patterns

Age, gender and cultural factors have a significant influence on the use of physician services. In general, elderly patients and females consume a higher number of physician services than younger, male members of the population.

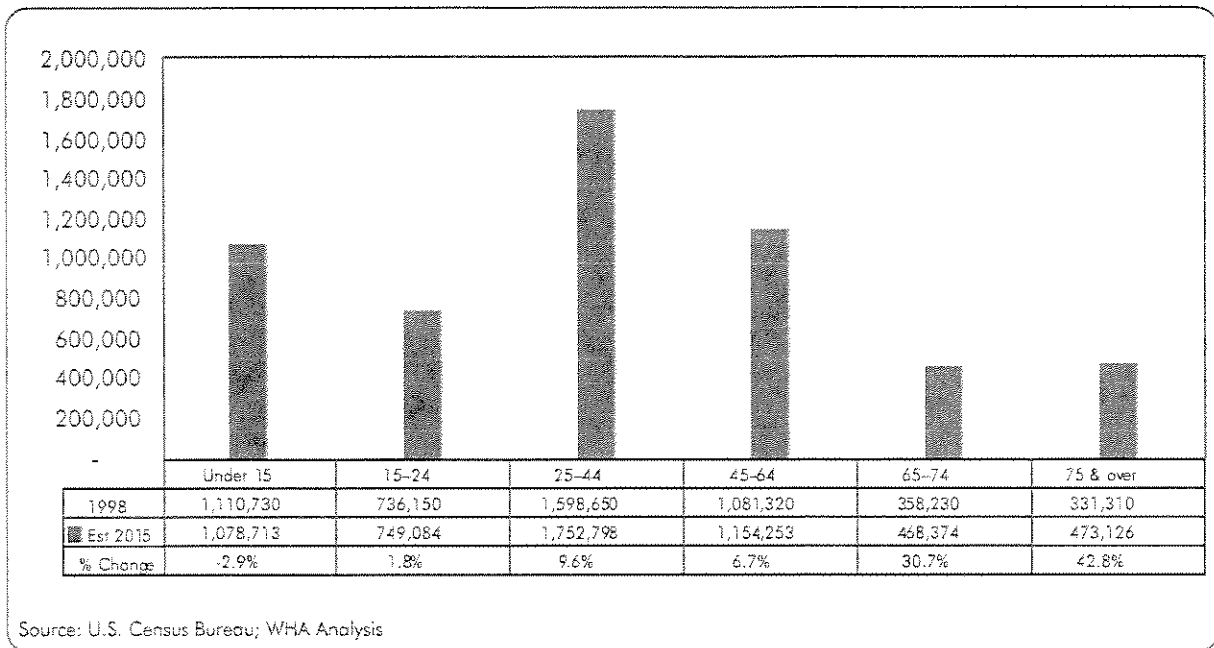
Elderly patients and females experience a higher number of physician services than younger, male members of the population.

The chart below illustrates the magnitude of the difference for physician office visits. For example, a male aged 75 or older will, on average, have four times as many office visits as a male between the ages of 25 and 44. A female between the ages of 25 and 44 will have, on average, twice as many office visits as a male of the same age. It is not clear whether the relationships of office visit frequency among various population components will be the same in the future. Much speculation has been made about, for example, a healthier future elderly population lessening the need for as much health care services. That point is covered in Appendix A, but the Task Force concluded that predictions about that couldn't be made with any confidence. Therefore, the analysis assumed the same relative ratios of visits, as currently is the case.



## Population and Demographic Factors

The U.S. Census Bureau has developed a forecast of Wisconsin's population in 2015 by age range. The chart below summarizes that forecast. One can observe that the populations in the "65 to 74" and "75 and over" age ranges are predicted to increase substantially.



## Projected Demand

Combining the existing ratio of visits by age category and the projected changes in demographics, one can project the number of visits. The table below shows that, while the total population is projected to increase by 8.8%, visits are projected to increase by 13.5%. This results from assuming that the current relationships for visits by age cohort hold true, combined with the increase in the percentage of the population having a higher frequency of visits.

Actual and Projected Office Visits			
	1998 Actual	2015 Projected	Percent Change
Wisconsin Population	5,216,390	5,676,349	8.8%
Visits per 100	302.9	316.0	4.3%
Physician Visits	15,799,000	17,937,000	13.5%

Visits are considered to be a reasonable measure of demand for primary physicians. Without any further assumptions regarding changes in delivery of care, the conclusion is that there will be a double-digit increase in the demand for primary physicians.

The conclusion is that there will be a double-digit increase in the demand for office visits.

Demand for specialists will, to a large extent, also be driven by the change in population and demographics. But technology and its increasing availability and effectiveness for treating patients is at least as important in making such projections for specialists.

While much research has been done on this subject, the most recent work by Dr. David A. Etzioni, of the UCLA Medical School is noteworthy. Etzioni used a methodology similar to the one used above to project the demand for surgical procedures in 2010 and 2020. His data sources included the 1996 National Survey of Ambulatory Surgery and the National Hospital Discharge Survey, combined with the population forecasts from the U.S. Census Bureau.

Etzioni concluded that demand for surgery would increase by nearly 50% by the year 2020. Surgeries performed predominantly on older adults, such as cataract and heart surgery, will have the highest increase in demand. The following table summarizes his projections:

Specialty	2010	2020
Cardiothoracic Surgery	18%	41%
General Surgery	13%	28%
Neurosurgery	14%	27%
Ophthalmology	15%	47%
Orthopedic Surgery	13%	25%
Otolaryngology	6%	14%
Urology	14%	33%

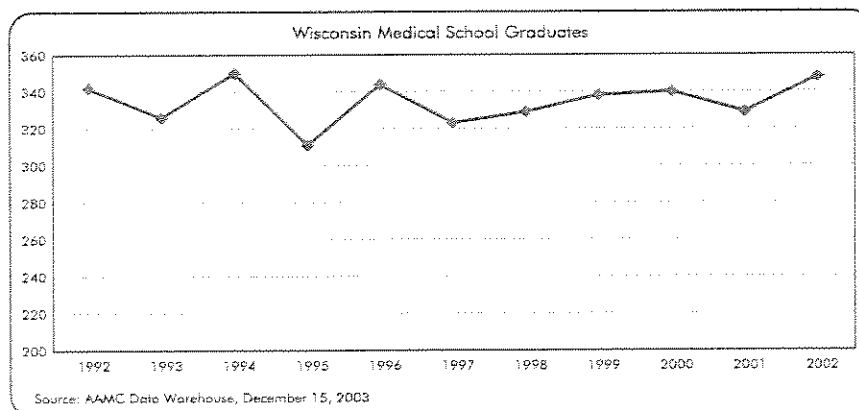
Source: David Etzioni, UCLA Medical School; WHA Analysis

While this study focused on surgery specialties, one can assume that the increase in surgical volume would result in an associated increase in demand for other specialists, such as radiologists and anesthesiologists. In summary, a reasonable conclusion is that the demand for most specialists will increase by double-digit percentages.

### Supply of Physicians - Methodology

As stated above, the existing ratio of physicians per 100,000 people was used, and factored in were the number of physicians trained and retained in Wisconsin, expected retirements and number of physicians from other states entering practice into Wisconsin.

The first component of the above formula relates to the number of graduates from Wisconsin's medical schools. The total number of graduates from those schools has remained relatively constant for over a decade, as the following chart illustrates:

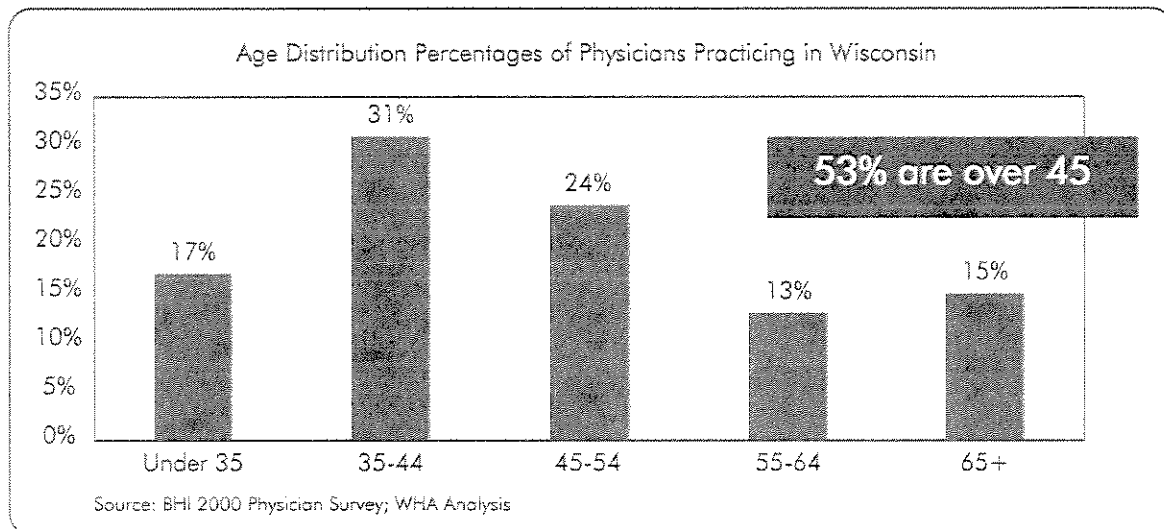


The chart shows that Wisconsin's medical schools have graduated between 325 and 350 students per year. Historically, about 38% of Wisconsin's medical school students are retained and practicing in Wisconsin. This would imply that between 125 and 133 per year would be practicing in Wisconsin, resulting in an additional 1,500 to 1,600 physicians by 2015.

Historically, about 38% of Wisconsin's medical school students are retained and practicing in Wisconsin.

Incoming physicians are defined as those who choose to practice in Wisconsin but neither attended a Wisconsin Medical School, nor did a residency in Wisconsin. Wisconsin Medical Society information and the last ten years of data from the Wisconsin Department of Regulation and Licensing on newly licensed physicians was used to calculate the number of physicians coming into Wisconsin.

Physician retirement represents the largest component of expected reductions in Wisconsin's physician workforce. To calculate the expected number of retirements per year over the next 10 years, the age demographics of the currently available data were analyzed. The following chart provides an analysis of the age distribution of physicians practicing in Wisconsin in the year 2000.



The chart indicates that 28%, or 2,660, of the 9,533 physicians currently licensed in Wisconsin will either retire or significantly reduce their practices within the next 10 to 12 years. This timeframe is within the prediction horizon of 2015.

Another emerging factor that will have an impact on the available workforce relates to cultural demographic factors within the physician workforce. Survey results and anecdotal comments from health care recruiters are pointing towards a desire on the part of recent medical school graduates for fewer practice hours, and an expression of a greater emphasis on family life. Further, research by Cooper and others indicates that physicians entering the workforce today are choosing lifestyles that devote less time to medical practice and more balance with family and personal activities. Based on the admittedly limited data at this point, the Task Forces estimates that, by 2015, this phenomenon will have the effect of reducing the "raw count" of physicians by a minimum of 2%.

Physicians entering the workforce today are choosing lifestyles that devote less time to medical practice and more balance with family and personal activities.

### Projected Supply of Physicians in 2015

In summation, this study projects that the Wisconsin physician workforce for 2015 results from the summing of the current workforce; adds future graduates from Wisconsin medical schools who are anticipated to stay in the state, as well as those from other states who are expected to enter practice in Wisconsin, subtracts retiring physicians and applies an FTE reduction factor to estimate the effect of a growing pretence for lifestyle balance.



The following table provides a summary of the projection.

	Low Estimate	High Estimate
Currently licensed in Wisconsin	9,533	9,533
Physicians produced by Wisconsin medical schools	1,500	1,600
Physicians from other states obtaining Wisconsin license	1,050	1,800
Retiring physicians	(2,660)	(2,660)
FTE reduction factor (2% of total)	(190)	(205)
Projected total for 2015	9,283	10,068

The projections range from a slight decrease of 2.6% to an increase of 5.6% in the number of physicians. *In either case, the projections indicate a shortage overall compared to the projected double-digit percentage increases in demand.* There is insufficient data to segment the projections by primary versus specialty physicians.

## Physician Preparation

The standard track for medical education in the United States starts with baccalaureate preparation for the study of medicine, followed by a university-based medical school, finishing with direct clinical experience as part of medical education (referred to as a residency). The total number of years for physician preparation under this model ranges from 11 years for generalists to 15 years or more for specialists. Physicians trained in Wisconsin's medical schools follow this structure.

### Medical Education in Wisconsin

Medical schools in Wisconsin graduated 348 new physicians in 2002. Wisconsin has traditionally ranked higher than average in the number of medical school graduates. In 1997, Wisconsin ranked 19 among the 46 states with medical schools in the number of graduates. On a per capita basis, Wisconsin graduated 6.4 new physicians per 100,000 population, comparable to the national average of 6.6 and ranked 20 among the 46 states in medical school graduates per capita. Overall, approximately 38% of medical students who have attended one of the two schools in Wisconsin are practicing in Wisconsin.

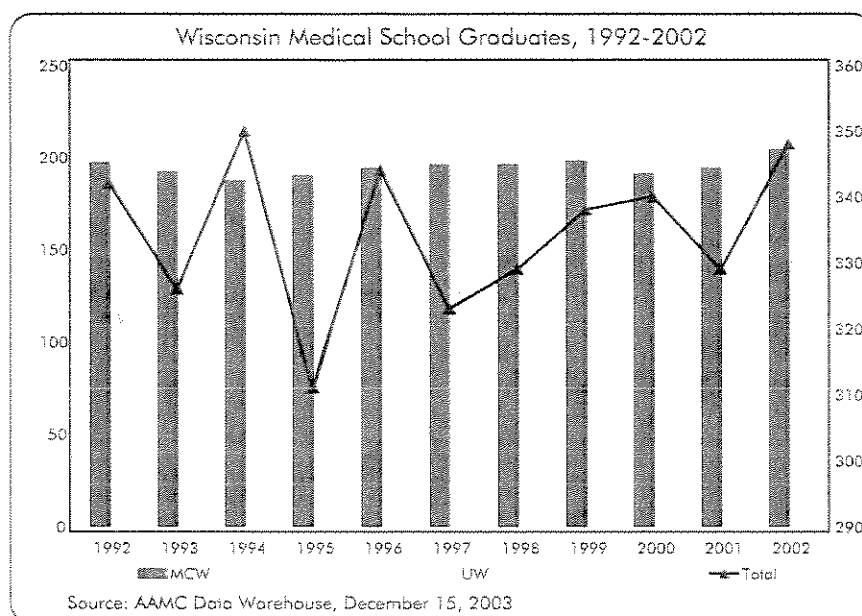
### Wisconsin's Medical Schools

The state of Wisconsin has two medical schools: The University of Wisconsin-Madison School of Medicine (UW), and The Medical College of Wisconsin (MCW).

The UW Medical School opened in 1907 as a two-year program. The school averages about 550 medical students and graduates approximately 138 each year. Approximately 17% of physicians practicing in Wisconsin are graduates of the University of Wisconsin Medical School.

The Medical College of Wisconsin is located in Milwaukee. While it is a private academic institution, it has received significant federal and state assistance over the years. MCW began in 1893 as the Wisconsin College of Physicians and Surgeons, in 1913 it became the Marquette Medical School and in 1967 it became a freestanding institution. The school averages about 780 medical students and graduates, on average, 197 students each year. Approximately 17% of Wisconsin physicians are graduates of the Medical College of Wisconsin or its antecedent institutions.

The chart below provides an overview of graduates for the period 1992 through 2002.



## Residency Programs

Wisconsin had more than 1,400 allopathic physicians in training (residents) in 1999 and ranked 21 among states in the number of allopathic residents. On a per capita basis, Wisconsin ranked 23 among states, with 27.5 residents per 100,000, lower than the national average of 35.9. Between 1989 and 1999, the number of residents per capita in Wisconsin grew by 6.4%, higher than the national increase of 3.9%.

There are 153 residency programs available in Wisconsin. For the 1999/2000 school year, there were 1,443 physician residents.

Of the 153 residency programs, there are 12 family practice programs. Two of the 12 are focused on inner city programs with 12 slots, while five offer rural fellowships or training tracks, having a total of 24 slots.

## Analysis and Conclusions

### Conclusions Regarding Supply of Physicians

The analysis shows a deficit of physicians, both for current needs and for the anticipated demand for services in the future. To summarize, the current supply is not sufficient along two dimensions:

- There is a shortage of primary physicians in rural Wisconsin and inner city Milwaukee.
- In general, specialty physicians are in demand and hard to recruit on a statewide basis.

For the projected year of 2015, it is anticipated that the demand for physicians will grow:

- By at least 13.5% for primary physicians over and above current shortages.
- At rates in the high teens to a low 20% range for specialists.
- Overall, we can conclude that there will be a significant increase in demand.

The change in physician supply is projected to be between a 2.6% decrease and a 5.6% increase.

The change in physician supply is projected to be between a 2.6% decrease and a 5.6% increase. This compares to a projected increase in population of 8.8%, with demographic factors expected to drive demand for health care services in excess of that total.

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*The projected supply is expected to lag the demand in either of the supply projection scenarios, both of which the Task Force considered to be conservative.*

### Observations on the Current Medical Education Structure

While the medical schools in Wisconsin graduate and train a substantial number of physicians, fewer than 40% of those trained practice in the state. Furthermore, the programs that are currently in place to address underserved populations, the rural and inner city residency programs, have not supplied enough physicians to meet the demand. As indicated above, there is currently a shortage in rural areas of over 400 primary physicians and in the inner city areas of Milwaukee, the shortage is calculated at 72 primary physicians. Yet there are only 24 residency slots targeted at serving rural areas, and 12 that focus on the inner city.

*Based on the needs that have been identified, it is unlikely that these programs, as currently constituted, will ever produce the required number of physicians for rural or inner city areas. A fundamental reassessment and potentially a restructuring of the state's medical education institutions will be necessary.*

### Other Factors That Need to Change in Order to Meet the Anticipated Demand

Increasing the production of physicians by Wisconsin's medical schools will not, by itself, solve the physician shortage problem. It would be difficult for our medical schools to increase the numbers rapidly enough to keep up with the increasing demand. Stakeholders need to consider other factors that would enhance the ability of Wisconsin's citizens to access physician services. The Task Force considered two such factors:

- *Develop strategies to attract physicians currently practicing elsewhere.*

Obviously, there is a supply of physicians outside the state of Wisconsin. If Wisconsin implemented strategies to market the advantages of practicing in Wisconsin, the physician supply could increase in a more timely way than if producing physicians relied solely through the medical education establishment. Caution is in order here, however, because there is growing evidence of a significant national physician shortage. Redistributing physicians among the states merely shifts the supply problem.

- *Evaluate the current system of care delivery to identify whether there are ways to leverage and enhance the existing complement of physicians.*

Currently, the methods for delivering services relies on physicians, supplemented with nursing personnel, making one-on-one contacts with patients, making assessments regarding diagnosis, and developing and implementing treatment plans. This model relies heavily on the physician, and if left unchanged, will do nothing to solve the physician shortage issue.

A number of health care systems have been using innovative approaches to provide care to more patients with the same number of providers.

Wisconsin should analyze current delivery systems to identify ways in which changes could help leverage the existing base of physicians to provide more care. A number of health care systems have been using innovative approaches to provide care to more patients with the same number of providers. Stakeholders should study these methods for their potential in improving supply.

In addition, attention needs to be given to the possibility of making available and using a greater number of other health care providers, including physician assistants and nurse practitioners. These providers could provide many of the services currently provided to patients by physicians. Moreover, the educational and training timeframe to adequately prepare them is significantly less than it is for physicians. However, it needs to be recognized that a number of barriers, including patient expectations, physician culture and licensing requirements, would have to be overcome in order for this solution to be viable.

## A Plan for Action

A number of major changes are necessary in order to have a sufficient number of physicians to meet the anticipated demand in the future. These changes focus on:

- Enrolling students in medical schools who will practice in Wisconsin.
- Developing new care delivery models.
- Retaining physicians in and attracting physicians to Wisconsin.
- Targeting and enhancing funding for medical education.
- Creating an infrastructure to guide medical education in Wisconsin.

The changes would affect Wisconsin's medical schools, the provider community as a whole, and the ways in which the state finances medical education and physician practice. The Task Force identified five major goals that address the major objectives outlined above.

### Goals and Action Steps

**GOAL I:** Recruit, enroll and train in Wisconsin's medical schools individuals who are likely to practice in Wisconsin, with particular attention towards underserved parts of Wisconsin. This recommendation would require Wisconsin's medical schools to both increase the number of students, and to structure the recruitment and admission process to assure that students from underserved areas and students with an expressed interest in working in such areas would constitute a significant portion of each class.

Responsibility: Schools of Medicine, health care providers

#### Action Steps:

- Increase the number of students in medical school.
- Establish goals for medical schools to set and achieve targets for successful recruitment and retention of students from underserved areas.
- Create regional specialty training networks to expose trainees to underserved areas.
- Develop/replicate programs that attract, to medical school, students most likely to practice in underserved areas.
- Create a programmatic focus or a "School within a School" to focus on underserved areas.
- Start promoting health careers at the middle school level.

**GOAL II:** Develop care delivery models that will enhance and leverage physician resources. This recommendation would include researching and developing new care delivery models, including, for example: new teaching methods to expose students to teams of care, working with advanced practice providers and utilizing distance-learning methods for practitioners in isolated locations. It would also set the expectation that teaching/learning would be conducted in areas where physicians would be expected to practice.

Responsibility: Schools of Medicine, hospitals and medical groups

#### Action Steps:

- Provide funds for pilot projects demonstrating "team care models."
- Conduct pilots and studies of alternative delivery models.
- Prepare medical students and residents to work with advanced practice providers.
- Investigate potential mentoring opportunities involving retired, part-time and administrative physicians.
- Evaluate shortening the timeframe for medical education.

GOAL III: Create policy and practice that encourages physicians to enter and remain in practice in Wisconsin. Create similar policies to encourage physicians to return to Wisconsin to practice. This recommendation would create incentives to practice in targeted areas and specialties.

Responsibility: Policy makers, funding sources, employing organizations

Action Steps:

- Create funds for loan forgiveness for physicians to stay in Wisconsin after their residencies.
- Establish incentives to ensure specialists are adequately dispersed across the state.
- Identify and publish best practices for recruitment and retention.
- Maintain Wisconsin's favorable medical malpractice environment.
- Ensure adequate payment rates to support physician recruitment.
- Provide monetary incentives to address selection of locale and specialty.

GOAL IV: Provide adequate and targeted funding for medical education. Current funding for residency programs is inadequate to cover true costs. Furthermore, no specific targeted funding is made available. This recommendation would focus on federal and state sources to fund resident education.

Responsibility: Federal policy makers, state policy makers, medical schools

Action Steps:

- Increase state funding for medical education.
- Increase Medicaid GME and tie increases to Task Force goals.

GOAL V: Develop an infrastructure to guide medical education policy in Wisconsin. The state of Wisconsin does not have a plan for identifying the numbers and specialties of physicians necessary to provide services to its citizens. In addition, it does not have the means to monitor and adjust any plan. This goal establishes an infrastructure to guide and monitor policy for medical education in Wisconsin.

Responsibility: Health care providers, medical schools

Action Steps:

- Create a Wisconsin advisory council to monitor, predict and recommend activities to maintain an adequate supply of physicians for Wisconsin.
- Create a process to maintain adequate data about:
  - Demographics.
  - Practice patterns and specialties.
  - Practice components such as call schedules and referral patterns or retirement plans.
  - Tracking physicians to identify where they are practicing – Wisconsin or elsewhere.
  - Students who graduated from Wisconsin high schools, who attended Wisconsin Medical Schools, and whether they did their residencies in Wisconsin, and their current location of practice.
  - Data on where physicians who graduated from Wisconsin medical schools are practicing at present. If not practicing in Wisconsin, recruit them back.
  - Medical school applications, acceptances and graduations for zip code of origin to determine if students from underserved areas are making it into the system.
  - Determine actual number of years in practice. This could be useful in answering questions about whether physicians are planning to retire at certain intervals.

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## Appendix A

### Factors Influencing Future Physician Supply and Demand But Not Considered in Making Projections

#### Payment for Health care in the Future - Insurance/payer Changes

In many ways, the ability to obtain medical care is a factor of whether one has insurance and what that insurance covers. Today in Wisconsin there are people without medical insurance. Should a program be created which provides coverage for all, demand for particularly primary care could change. Conversely, if benefit levels drop and/or coverage changes dramatically, consumers might reduce their utilization of health care resources. An example of such a change would be broad implementation of defined contribution plans. While there currently is a movement on the part of employers to reduce benefits or implement defined contribution plans, one cannot predict whether this will be a long term phenomenon, nor what impact there will be on utilization.

#### Cultural Changes in Practice Time Commitment

The number of hours a physician spends in medical practice varies. There is increasing evidence that physicians in general are reducing the amount of time spent in their practice and thus their productivity. Female practitioners, on average, spend fewer hours in practice; and recruiters report a greater emphasis on family life, time off and reduced call schedules being important to new physicians entering employment. The lifestyle changes are a relatively recent development, and not enough data has been generated to provide an adequate basis for prediction.

#### Technology

New devices, procedures, hardware and software are announced in the public and professional press every day. The impact of these devices on practice varies widely and while some innovations may reduce the time and effort previously dedicated to a procedure or administrative task, others will increase the amount of services delivered by making new services and procedures available.

#### Reduced Need for Health care Because of Better Disease Management

Recent news reports have suggested that the next wave of 'older' patients will be in better health than today's population. It has been proposed that today's adult is more likely to exercise, monitor fat intake and less likely to smoke. Many believe that we are more health conscious and will use fewer resources as we age. If this is the case, people are more likely to live longer, but have a lower level of utilization during the aging years.

#### Shift to Advanced Practice Providers in Different Ratio Than Today

Many Wisconsin physician practices utilize advanced practice providers (APPs). This is true for both primary care practices and specialist practices. These providers also deliver care in urgent care settings. Preparation time for this level of practitioner is shorter than for a physician and the patient response to care provided by nurse practitioners and physician assistants is positive. Current reimbursement and scope of practice issues place limits on these practices. Changes in either would make a difference in the number of advanced practice providers used in Wisconsin.

#### Demographic/Cultural Changes

The cultural face of Wisconsin is changing. There is a significant Latino population; additionally there is a significant Hmong population and hospitals in the state report additional new cultural and ethnic populations. This may impact physician supply and utilization.

#### Malpractice Environment

The cost of medical malpractice insurance and the degree of physician liability may influence where physicians locate or relocate. Professional journals contain stories of individual physicians moving their practices to Wisconsin because of current protections offered here. Significant in-migration of physicians would change the supply side. Other states passing legislation to offer similar protections is as likely a scenario.

## Appendix B

### What Works: A Compendium of Methods and Programs to Address Physician Shortages in Use in Other States

WHA staff collected examples of how states have addressed their rural physician supply problems. We felt that these approaches might be useful references for the Task Force as it developed its recommendations for addressing Wisconsin's physician workforce issues.

#### Iowa

The Iowa Health Professions Inventory (IHPI) is a computer-based tracking system that contains demographic, educational and professional information on every active Iowa health practitioner in selected professions (physicians, nurse practitioners, physician assistants, dentists and pharmacists). The 31-year-old tracking system allows the state to have "real time" data about both the supply of and demand for health professionals in the state. For example, if a physician moves into the state, retires or changes office location, the information is captured in the database almost immediately. To do this, program staff collects information from many sources-membership rosters at the state's medical and professional organizations, reports from hospitals on staff changes, news clippings and word of mouth, among other sources-and continuously update the database. In addition, they track the number of job openings for health professionals across the state.

According to Roger Tracy, assistant dean at the University of Iowa Medical College where the IHPI was first developed and is now maintained, this tracking system enables the state to do several things: 1) characterize its health workforce in "real time;" 2) monitor workforce trends (age, supply, demand, etc.); 3) provide support and justification for new workforce initiatives, such as recruitment and retention programs; 4) evaluate existing workforce programs; and 5) conduct research that results in policy changes. In the future, Tracy hopes to expand IHPI to include registered nurses.

#### Pennsylvania

Uneven geographical distribution of health care professionals is a major challenge for states, and shortages of physicians in rural areas is a persistent occurrence. Several medical school programs are taking the lead to increase the number of rural physicians by selectively admitting students who come from rural areas in the belief that they will return to practice in those areas. The Physician Shortage Area Program (PSAP) at Jefferson Medical College of Thomas Jefferson University in Philadelphia, Pennsylvania, has been doing this for 25 years with great success. According to the PSAP's comprehensive tracking data, 87 percent of PSAP graduates were practicing rural family medicine 5-10 years after they first located in practice. In addition, PSAP graduates account for 21 percent of rural family physicians practicing in Pennsylvania who graduated from an in-state medical school, even though they represent only one percent of all graduates from the state's medical schools.

The program recruits and then selectively admits students who have grown up in rural areas or small towns and who intend to return to a similar rural area to practice family medicine. Once admitted, students are paired with advisors in the Department of Family Medicine and are provided with financial aid. During their first two years of medical school, PSAP students meet with these advisors several times and are given the opportunity to participate in summer research in family medicine. During their third and fourth years, PSAP students are required to complete their clerkships and subinternships in rural or small town family practice centers. Following graduation, PSAP participants are expected to complete rural family medicine residencies.

The PSAP program began in 1974. It admits about 15 students a year. According to Howard K. Rabinowitz, MD, Professor of Family Medicine at Jefferson Medical College and Director of the PSAP since 1976, the program recruits students who have grown up in a rural area and who are committed to practicing family medicine in the same or similar area. PSAP students follow a curriculum similar to their non-PSAP classmates, but take some courses that focus on practicing family medicine in a rural community, receive training in rural or small town areas and pair with an academic advisor from Jefferson's family medicine department. Overall, PSAP graduates were eight times more all kinds of practice settings and geographic locations — from remote rural towns to suburban settings to major urban hospitals to inner city clinics. Further information about the [School of Medicine curriculum](#), including



curriculum at WWAMI sites, is available.

Participating universities besides the University of Washington are: University of Alaska (UAA), Washington State University (WSU), University of Idaho (UI), and Montana State University (MSU). In 1988, the UI and WSU programs were combined under a single directorship. The University of Wyoming (UWy) joined in 1996 (modifying the acronym to WWAMI).

#### A Collaborative Success

The success of the WWAMI program has depended on the cooperation and partnership of many different parties in each state — state legislatures, state and local medical associations, hospital associations, higher education boards, colleges and universities, and, above all, faculty and community physicians from those states. That cooperation and partnership has become a trademark of the program. WWAMI works thanks to the efforts of thousands of committed individuals throughout the region.

#### Special Programs For Medical Students

Special experiences to encourage medical students to learn about and consider rural medicine have developed through the WWAMI program over the years. The Rural/Underserved Opportunities Program (R/UOP) provides early exposure for medical students to medical care in rural and urban underserved environments. The R/UOP program has received generous financial and organizational assistance from the Area Health Education Centers (AHEC), Washington Academy of Family Physicians, the Hearst Foundation, and many other individuals, communities, and organizations. The WRITE program offers a six-month clinical experience in a rural community for some medical students during their third year of medical school.

Medical students from the University of Washington can complete all of their third-year clinical clerkship requirements in Spokane, WA and Boise, ID. The “tracks” are coordinated through the Regional Medical Education Offices in Spokane and Boise. A similar experience in Anchorage is being developed.

#### Associated Programs

In addition to education for medical students, the WWAMI program focuses on a number of other areas: encouraging K-12 students from underserved areas to consider health careers; developing residency programs throughout the region; providing continuing medical education and consultations for physicians who practice throughout the region; and developing methods to enhance and improve health infrastructures in underserved communities. Programs like the Area Health Education Center (AHEC) Network serve a number of functions. Although not all of the described programs are directly part of the WWAMI program, all of them have grown out of the regional emphasis initiated by the program.

#### An Integral Part of the Medical School

The University of Washington School of Medicine is proud of the WWAMI program. The program serves as a constant reminder to faculty and students that service to and working with one’s community provide rewards and immeasurable gains for all involved.

Just as the WWAMI program has benefited the region, so has the region benefited the medical school. WWAMI believes their medical students receive an education second to none, and a substantial portion of that success is due to the WWAMI program. Graduating classes consistently rank the diversity of the regional clinical training opportunities as one of the School’s great strengths.

## Michigan

#### Rural Physician Program (RPP): A Rural Clinical Experience

The Rural Physician Program (also known as the U.P. Program) is the College of Human Medicine’s rural education program. Each year, eight College of Human Medicine applicants are selected to their clinical years in Michigan’s Upper Peninsula. Preference for this program is given, though not limited to, applicants who have had significant experiences in rural Michigan or are considering eventually practicing in a small-town setting.

#### The Rural Physician Program Application Process

Physician shortages exist in Michigan’s rural areas, and it is a goal of CHM to educate physicians who will practice

there. All applicants who receive a CHM Secondary Application are invited to apply to the RPP by submitting two essays outlining their interests in rural medicine and highlighting their personal characteristics and experiences that are consistent with becoming an excellent rural physician. RPP applicants should have interests and personality traits consistent with living in a smaller community and practicing in underserved, rural areas.

#### Program Description

The College of Human Medicine's mission is explicit about educating excellent, caring physicians who will practice in Michigan's underserved rural communities. The Rural Physician Program is a highly competitive program designed to educate students to become exemplary physicians with the clinical skills needed to meet the needs of rural Michigan.

The College of Human Medicine is a community-integrated medical school. Years 1 and 2, the preclinical years, take place at the Michigan State University East Lansing campus. Years 3 and 4, the clinical years, take place at one of six community campuses: Flint, Grand Rapids, Kalamazoo, Lansing, Saginaw and the RPP campus located in the Upper Peninsula (Marquette).

Each year, eight CHM admitted students are selected for the RPP, a clinical option for students whose goals include becoming able to *serve the people* in small towns and rural communities. The goal of the RPP is to provide students with enriched clinical experiences, community service opportunities, and small town lifestyle advantages that will encourage CHM Rural Physician Program alumni to establish rewarding practices in Michigan's rural communities.

RPP students receive an excellent clinical education from Michigan State University faculty and from CHM selected board certified volunteer physicians from the local community. Students also have the opportunity to work with the Family Practice Residents at Marquette General Hospital.

While the RPP was particularly designed for students entering primary care fields, graduates can and have gone into nearly all specialties. In keeping with the very successful Upper Peninsula (U.P.) Program that was established in 1974, the RPP curriculum emphasizes the caring, compassionate, humane approach to the doctor-patient relationship. Administered by the Upper Peninsula Health Education Corporation, the RPP provides students with outstanding, state-of-the-art facilities while maintaining a humanistic, personalized approach.

#### Rural Physician Program Block III (Years 3 and 4)

As a community-integrated medical school, CHM is uniquely positioned to provide students with comprehensive training in clinical settings that most closely parallel the type of environment in which many physicians will ultimately practice. All CHM students who successfully complete Block I (Year 1), Block II (Year 2), and Step 1 of the United States Medical Licensure Exam (USMLE) advance to Block III (Years 3 and 4), the community-based, clinical experience. Block III is an 80-week curriculum block comprised of physician-supervised required clerkships in family practice, internal medicine, pediatrics, obstetrics and gynecology, psychiatry, and surgery. These experiences take place in a variety of hospital and ambulatory settings. Advanced clerkships are required in surgery and internal medicine. Concurrent with clerkships, students participate in required weekly structured learning seminars on core interdisciplinary topics important to the care and health management of patients. Block III students also have four, four-week elective clerkships that may include an international experience.

After passing Step 1 of the USMLE, students who are accepted to the Rural Physician Program move to the Upper Peninsula for a challenging clinical experience. Students assume increasing responsibility for diagnosing and treating patients during their ambulatory care experience. A variety of outpatient settings, including schools and counseling programs, also enrich this ambulatory care experience. Additional opportunities for students to train at rural sites throughout the Upper Peninsula are continually being developed.

The core clinical disciplines are done at Marquette General Hospital, a 352-bed regional referral center with outstanding state-of-the-art facilities and dedicated physician educators. A hallmark of the program is the two-month Family Medicine clerkship in a small Upper Peninsula community, where one-on-one teaching and tremendous clinical exposure serves to coalesce prior learning and experience in a comprehensive, humanistic approach. Additional required and elective time can be done in Marquette, anywhere in the CHM system, nationally or internationally.

## Applicant Qualifications

Competitive applicants to the College of Human Medicine M.D. program must have strong academic credentials, and personal attributes and career goals that are consistent with the CHM Mission.

Applicants to the Rural Physician Program must be admitted to CHM and have outstanding qualifications for practicing in a rural area, with consideration given for previous rural life experiences, initiative, and the desire to become not only excellent physicians but also community leaders. The RPP Admissions Selection Committee strives to accept students for RPP who reflect the diversity of the College of Human Medicine's entering class.

## Illinois

Illinois ranks as one of the top states in the nation in terms of producing physicians, but it ranks fourth from the bottom for the number of residents living in areas underserved by primary care physicians. Of Illinois' 102 counties, 84 are considered rural by the Center for Rural Health of the Illinois Department of Public Health (IDPH). 75 of these 84 rural counties are designated underserved (using a primary care physician-to-population ratio of 1:2400 or greater in rural areas).

This lack of primary care physicians in less populated areas is a problem that the University of Illinois College of Medicine at Rockford has begun to address with its Rural Medical Education Program (RMED). RMED is designed to prepare students for the unique challenges that face rural physicians. The College of Medicine began matriculating students in the RMED program in August 1993. Students with roots and plans to practice in rural Illinois are encouraged to apply to RMED so they may participate in a special curricular experience designed to assist them in achieving their career goals.

Students meeting the qualifications of the University of Illinois College of Medicine are selected on the basis of evidence of their motivation for becoming a family physician, their desire to return to practice in rural Illinois, and their commitment to serve their communities. Selection involves a dual application process — submission of the regular AMCAS application with supplemental application to the University of Illinois College of Medicine and completion of the RMED application and interview. Fifteen students per year may be recommended for admission to the RMED program and the College of Medicine. Successful applicants must pledge to complete the RMED program, select a family practice residency program, and practice in rural Illinois.

The RMED undergraduate medical education curriculum will integrate with the regular curriculum of the College of Medicine at Rockford, which is noted for its 30 month longitudinal ambulatory primary care experience at the College's rural primary care centers.

The RMED curricular focus during the first two years is on *Foundations in Rural Family and Community Medicine I and II*. RMED students begin to develop an understanding of the core concepts of family medicine and the ways physicians can interact with their communities to affect both individual and community health. They are also exposed to a variety of rural health care topics, settings and providers.

The third year focuses on the interface between family medicine and the community. Students learn about the concepts involved in community-oriented primary care (COPC). They are also taught the skills necessary to design a community project, which will be implemented during their fourth year rural preceptorship.

The fourth-year students participate in a 16-week rural preceptorship experience, which is the capstone of the RMED curriculum. Hospitals and family physicians located in small, rural communities collaborate with the University of Illinois College of Medicine at Rockford to provide a unique educational and clinical experience for senior students. The preceptorship experience focuses on clinical skill development in a rural setting, the implementation of a community-oriented research or programming project, and a study of the rural community's social, economic, cultural, organizational and political structure. There are now 20 sites for this rural clerkship statewide. Curriculum and faculty development, site visits, and the use of telecommunications facilitate the development, monitoring and evaluation of this key educational experience.

## Minnesota

### University Minnesota Duluth School of Medicine Graduates:

- 53% practice family medicine, compared to 13 percent nationally
- 44% practice in communities smaller than 20,000 people
- 63% practice in Minnesota; 75% of graduates practice in Minnesota or Wisconsin

In the past 10 years, the University of Minnesota has graduated more than 8% of the nation's American Indian physicians, while providing less than 2% of the country's medical students.

### School of Medicine Health Professionals Schooled to Serve Small Towns and the Rural Midwest

The University of Minnesota Duluth's School of Medicine is a nationally recognized two-year medical school program focused on training family practice physicians to practice in rural areas. Within the School of Medicine, the University's Rural Health School coordinates medical education and training for nurses, pharmacists, physician's assistants, social workers and advanced nurse practitioners. It is also recognized for its significant research in a number of areas with interests as diverse as molecular brain biochemistry, rural health issues, toxicology, aging, cancer and vascular disease.

Since its opening in 1972, the School has consistently led the nation in the percentage of its students choosing family practice as a career choice.

The School is affiliated with the University of Minnesota Medical School in Minneapolis where UMD students transfer to complete their third and fourth years of medical training.

### Strong Local Support for Medical School Concept

The incentive for a school of medicine in Duluth began in 1966 when Samuel H. Boyer, a Duluth cardiologist, and then Assistant Provost Robert L. Heller discussed the need for a medical school through a chance meeting on a plane to Minneapolis from Duluth.

The idea for a medical school was developed through the efforts of a small group of local physicians, UMD administrators and faculty. Boyer assembled a group of leaders from the Duluth business and medical community to form the Northern Minnesota Council on Medical Education to lobby for the school and raise funds.

Eventually, the two-year Duluth medical school was approved in the face of competing proposals from St. Paul and Rochester. In 1969, the Minnesota Legislature appropriated \$340,000 for planning.

### Early Roots and Innovative Beginnings

The school was originally located on the Old Main campus in the former Laboratory School building at 2205 East Fifth Street. With Dr. Robert Carter as its first dean, the school accepted its first 24 students in the fall of 1972. That first year every medical student received a key to the school building, a tradition that continues today.

Two unique aspects of the medical school's curriculum have been the emphasis on the behavioral sciences and early exposure to patient care. A cornerstone of the school's training is the preceptorship program where a student lives with and shadows a rural family doctor several times a year. In 1990, the School received the prestigious National Rural Health Association's Outstanding Rural Health Program Award as a result of this program.

The School of Medicine moved to new facilities on the upper campus in 1979 near the science department area. The new building provided much needed expanded research facilities, which were designed with faculty input.

In 1987, the Center of American Indian and Minority Health was established to coordinate the various Indian programs administered throughout the School. Gerald Hill, MD, former president of the Association of American Indian Physicians, became the center's director in 1990. The school has always held a strong commitment to the recruitment and training of American Indian students as part of its mission to encourage and educate practitioners of rural medicine.

In 1997, the School of Medicine building was expanded with a four-level addition, which incorporated more student teaching space, a learning resource center and research facilities.

## Definitions

**Advanced Practice Providers** - Non-physician providers of healthcare. This includes, but is not limited to, Physician's Assistants, Nurse Practitioners, and Nurse Midwives.

**Council on Graduate Medical Education (COGME)** - a body authorized by Congress in 1986 to provide an ongoing assessment of physician workforce trends, training issues and financing policies, and to recommend appropriate federal and private sector efforts to address identified. It is housed in the Division of Medicine and Dentistry; Bureau of Health Professions; Health Resources & Services Administration.

**Critical Access Hospitals (CAH)** - A federal category for rural hospitals with less than 25 beds that receive cost-based reimbursement from Medicare and Medicaid.

**Expert Average** - Methodology used by Libby and Kindig to determine physicians needed to supply underserved Americans. The methodology involved polling experts on physician supply using a structured data collection and using that data to create a population-based requirement estimate.

**Foreign Born International Medical Graduate (IMG)** - Physicians who were born and obtained their medical education in a country other than the United States.

**Graduate Medical Education (GME)** - Post MD medical training programs.

**J-1 Visa Waiver Program** - One way for graduates of foreign medical schools to enter the United States for further education is a J-1 Visa. Approximately 45% of IMG's who are not U.S. citizens or permanent residents, enter the U.S. on a J-1 Visa. A J-1 Visa allows six years in the U.S. and then requires a two year residence in the home country. It is possible to have that requirement waived. Providing care in a medically underserved area of the United States is one way to receive a J-1 Visa Waiver.

**Metro Core (Counties)** - Central counties in metropolitan areas that have a population of one million or greater.

**Metro Fringe (Counties)** - Fringe counties in metropolitan areas that have a population of one million or greater, or alternatively, non-metropolitan counties with an urban population of 20,000 or more adjacent to a metropolitan area.

**Primary Care Physician** - a physician who identifies his/her specialty as General Internal Medicine, General Pediatrics, Family Medicine, or General Practice.

**Rural (Counties)** - Non-metropolitan counties with an urban population between 2,500 and 20,000.

**Small City (Counties)** - Counties in metropolitan areas that have a population of fewer than one million, or alternatively, non-metropolitan counties with an urban population of 20,000 or more NOT adjacent to a metropolitan area.

**Sparse (Counties)** - Non-metropolitan counties with an urban population of fewer than 2,500.

**Specialist** - a physician who identifies his/her specialty as any specialty other than those listed for Primary Care Physician.

**Team Care Models** - Models of healthcare delivery in which a physician and one or more advanced practice providers in addition to other healthcare clinicians ( such as Registered Nurses and Pharmacists) provide care to a patient or a group of patients.

**Wisconsin Hospital Association** - The Wisconsin Hospital Association represents more than 130 hospitals and health care systems across the state. WHA's mission is to advocate for the ability of its community-based hospital members to provide high quality, accessible and affordable health care services to Wisconsin communities.

**Wisconsin Medical Society** - The Wisconsin Medical Society, a trusted source for health policy leadership since 1841, is the largest association of medical doctors in the state with more than 10,000 members dedicated to the best interests of their patients.

**Wisconsin Office of Rural Health** - an office within the University of Wisconsin the purpose of which is to improve the quality of health for Wisconsin's rural and underserved communities by collaborating with health care, community and educational organizations to develop programs and provide resources.



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