100 New Physicians a Year
An Imperative for Wisconsin

A Report by the Wisconsin Hospital Association

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November 2011

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Introduction

At its January 2010 meeting, the Wisconsin Hospital Association Board of Directors created a workgroup and charged it with studying Wisconsin's future physician workforce, to determine whether the projected numbers of physicians would adequately meet the needs of Wisconsin residents, and to identify areas that would need to be addressed together with potential options. Workgroup members included:

- Sandy Anderson, CEO, St. Clare Hospital and Health Services, Baraboo
- Mark Kehrberg, MD, Chief Medical Officer, Affinity Health System, Appleton
- Michael Kryda, MD, Vice President, Medical Affairs, Ministry Health Care, Milwaukee
- Tim Size, Executive Director, Rural Wisconsin Health Cooperative, Sauk City
- Bruce Van Cleave, MD, Chief Medical Officer, Aurora Health Care, Milwaukee

Staffing the workgroup were George Quinn, WHA Senior Policy Advisor, and Chuck Shabino, MD, WHA Senior Medical Advisor.

The WHA workgroup researched methodologies for projecting physician supply and demand, examined the factors that impact Wisconsin's physician workforce, and developed several projections for the supply of and demand for physicians for the year 2030. Their work revealed that a serious deficit will exist between the supply of physicians and the projected demand for their services. The workgroup examined Wisconsin's medical education and training system and compared it to systems nationally. They found that a number of improvements could be made.

Finally, the group laid out issue areas that require attention to address the anticipated gap between physician supply and demand, and they proposed a number of potential options to pursue.

This white paper is meant to facilitate high-level engagement of stakeholders interested in Wisconsin's medical education and training system. We hope that it will result in meaningful changes leading to a significant number—at least 100 more per year—of additional physicians practicing in Wisconsin.

Nick Turkal, MD
Chair, Wisconsin Hospital Association
President and CEO, Aurora Health Care

Stephen Brenton
President, Wisconsin Hospital Association

Executive Summary

Wisconsin faces a shortage of physicians over the next 20 years, and aggressive action must be taken now to meet the challenge. An estimated 100 additional new physicians per year will be necessary to keep pace with demand, a number that will be attainable only if significant changes are made in Wisconsin's medical education and training system.

If the issues outlined in this paper are not acted upon, access to needed health care services will become unavailable, with a harmful impact on Wisconsin citizens, including an increase in preventable hospitalizations and a subsequent deterioration of their health.

The Wisconsin economy will be significantly impacted—if 100 physicians are not added each year, by 2030 the state's economy will be as much as $5 billion smaller than it could be.

Finally, it needs to be noted that 100 physicians per year are adequate only if work begins today. Some issues could be addressed quickly, but others would require several years to implement. The longer the wait, the higher the yearly requirement becomes.

This white paper by the Wisconsin Hospital Association provides projections of physician supply and demand in Wisconsin, analyzes factors that affect supply and demand, evaluates potential options for meeting the anticipated demand, and recommends options for policymakers to pursue.

Demand for physician services was estimated based on population growth and changing demographics. The supply projection was based on the current medical education and training system in Wisconsin, inflow and outflow of physicians, and anticipated physician practice profiles. The estimates necessarily include a number of assumptions, but the workgroup's conclusions tended toward more conservative results.

The projections show a shortfall of over 2,000 physicians by 2030, or the cumulative effect of not filling more than 100 physician vacancies per year. This equates to 20 percent of the current Wisconsin physician workforce. Primary care physicians will be most in demand, with general surgeons and psychiatrists also in short supply.

A number of potential actions were evaluated, but it was clear that only Wisconsin's medical education and training system—and only after significant changes—could provide enough new physicians to meet the anticipated need.

For each issue, the WHA workgroup made an estimate of the time needed to implement it as well as a cost estimate. Issue areas and options include:

Issue Area #1: The Need to Expand Wisconsin Graduate Medical Education Programs

Option A: Increase residency positions without increasing medical school graduates.

Wisconsin's current complement of residency programs and positions would be increased without increasing the number of medical school graduates. In addition, a study should be conducted of current residency programs with an objective of understanding why so few Wisconsin graduates enter the state programs, and implementing changes to improve the numbers. The study would include surveys of third- and fourth-year undergraduates to understand their rationale for choosing certain residency programs, and another survey of final-year residents regarding their plans for clinical practice and their residency experiences.

Option B: Increase residency positions in tandem with increasing medical school graduate options.

Any increase in residency programs or positions would be made in tandem with efforts to increase the number of medical school graduates.

Option C: UWSMPH, MCW, and residency programs should enhance communication.

When graduates of a Wisconsin medical school also have their residencies in a Wisconsin program, there is a 70 percent chance that they will practice in Wisconsin[1]. Given the impact that the combination of these two factors appears to have on physician retention for Wisconsin, both medical schools should identify and implement programs that enhance communication between their undergraduate and residency programs and residency programs should better inform undergraduate medical students about the benefits of their programs.

Issue Area #2: The Need to Increase the Number of Wisconsin Medical School Graduates

Option A: Increase the class size and maximize in-state admissions at UWSMPH and at MCW.

The University of Wisconsin School of Medicine and Public Health (UWSMPH) and the Medical College of Wisconsin (MCW) would each significantly increase their class size while at the same time maximize the percentage of admissions that are Wisconsin residents.

Option B: Open a satellite campus of an existing medical school focused on primary care.

Resources would be focused on primary care and community-based medicine. Preference would be given to Wisconsin applicants.

Option C: Establish a new medical school affiliated with UWSMPH and/or MCW based on the distributive model.

A new medical school would be established in Wisconsin with learners and teachers who are at multiple locations outside of the usual classroom or clinical site.

Option D: Establish a new medical school with a consortium of existing colleges, based on the distributive model.

Similar to Option E, a new medical school would be established by a consortium of existing Wisconsin colleges with learners and teachers who are at multiple locations outside of the usual classroom or clinical site.

Option E: Establish a new independent medical school.

A new medical school not associated with a current medical school or college would be established. It could be either for-profit or non-profit. The school would maximize the percentage of admissions that are Wisconsin residents.

Issue Area #3: The Need to Focus on Tuition and Tuition-Related Debt as Incentives to Attract and Retain Physicians

Option A: Restore tuition assistance at the Medical College of Wisconsin.

The historical level of tuition assistance, offsetting the difference in tuition cost between the Medical College of Wisconsin and the UWSMPH, would be restored.

Option B: Provide loan forgiveness to graduates who stay.

Graduates who stay and practice for five years would have their tuition loans forgiven, with funding tailored to the specialty and practice location needs of Wisconsin.

[1] 2008 AMA Masterfile, WHA analysis

Issue Area #4: The Need for a Coordinated Effort to Address Anticipated Changes in Care Delivery, Including the Team Approach and the Focus on Care Management. This Includes the Need for Interprofessional Training and Having Appropriate Resources Available to Carry Out Team-based Care Delivery in the Future.

Option A: Further study the future medical care delivery system.

There is a need to better understand how medical care is likely to be delivered in the future. The results of this study could be used as reference for developing curriculum and in identifying the demand for non-physician providers.

Option B: Increase the number of non-physician providers being trained in Wisconsin colleges and universities.

Based on projected need as determined in Option A, increase the number of non-physician providers trained in Wisconsin colleges and universities.

Option C: Incorporate team-based care delivery models into the medical education curriculum and provide clinical situations where physicians and other health professionals can practice in team settings.

Medical education curricula would need to change to incorporate team-based care delivery. Several models are already in place, including, for example, the interprofessional education (IPE) model. Jefferson University Medical School and Quinnipiac School of Medicine are examples of medical schools that currently use this model.

Option D: Establish an infrastructure and a vehicle for the dissemination of best practices regarding team-based medical delivery.

Health systems in Wisconsin and nationwide have begun to move toward team-based care delivery. Whether referred to as the medical home or other models, the team-based approach appears to hold promise as a way to more efficiently deliver care. There needs to be a resource to disseminate information on best practices for other health providers to use as they evaluate this model.

Issue Area #5: The Need for an Infrastructure and Ongoing Financial and Clinical Support for Enhancing the Long-Term Viability of our Medical Education and Training System.

Option A: Update WCMEW's mission and strengthen its role within its sponsors to make it a more effective voice on medical education and training in Wisconsin.

The Wisconsin Council on Medical Education and Workforce (WCMEW) would provide an infrastructure, and facilitate ongoing financial and clinical support, to enhance the long-term viability of Wisconsin's medical education and training system.

WCMEW's authority and responsibility should:

1. Identify the health care workforce needs of Wisconsin communities and meet those needs through the support and development of medical education programs.
2. Monitor and forecast the supply and distribution of physicians in Wisconsin.
3. Ensure an adequate supply, specialty mix, and geographic distribution of physicians and other health care workers to meet the health care needs of Wisconsin.
4. Coordinate health care workforce planning with state funding for medical education and training.
5. Develop and support education programs required to meet health care workforce needs.

With a strengthened WCMEW, Wisconsin would have an avenue to set statewide policy on meeting its health care workforce goals.

Option B: Create consortiums to manage collaborative medical education and training initiatives.

Each of the various stakeholders in Wisconsin medical education and training—medical schools, health care organizations, providers, students and teachers— has skills and resources to contribute to medical education and training. But none has all of what is necessary. In addition to financial resources, medical education requires teachers, classrooms, and sufficient clinical experiences to meet basic training and accreditation requirements. Bringing together all of the stakeholders and making use of their assets will enhance the likelihood of meeting their collective goals.

One way to formalize this relationship would be the creation of one or more consortiums, in the form of 501c3 corporations that would manage the operations of medical education and training collaboratives. The consortiums could be regional or statewide, and would reflect the specific needs and circumstances of the sponsoring organizations. There are many such consortiums in existence across the country. Some have a focus only on medical school education, others on residency training, and others on managing both medical school and residency programs.

Option C: Enact into statute an entity that will advise the Governor and Legislature on medical education and training in Wisconsin.

The role of the entity could include advising the Governor and Legislature on the health care workforce needs of Wisconsin, assisting with planning and budgeting to meet those needs, and monitoring programs to ensure compliance with the goals set by the new entity and that the programs are accomplishing their purposes.

Other Issue Areas That Need to be Addressed:

- **Maintain Wisconsin's favorable malpractice climate** – One of the often-mentioned reasons for physicians relocating to Wisconsin is our favorable malpractice climate. Wisconsin must ensure that it maintains that advantage.

- **More information and data is needed in order to make good decisions on physician workforce issues.**
    - Survey those physicians over the age of 60 to gauge their interest in being involved in medical education activities – physicians who are phasing down their medical practice are potential education/ mentoring resources.
    - Wisconsin should, on a biennial basis, survey physicians regarding their career plans and expectations and be aware of developments as physician career plans change.

Estimates of Resources and Timeframes

(See table on next page.)

The following table provides estimates for the resources and timeframes necessary to carry out each of the options outlined above.

Option	Estimated Resources	Estimated Timeframe
ISSUE AREA #1: EXPAND GME		
Option A/B: Increase Residency Positions	$150,000 per position	Between 1 and 4 years
Conduct a study of GME	Less than $100,000	Less than 1 year
Option C: Enhance Coordination between GME and Undergraduate Programs	Less than $1 million	Less than 1 year
ISSUE AREA #2: INCREASE THE NUMBER OF MEDICAL SCHOOL GRADUATES		
Option A: Increase the class size and maximize in-state admissions at UW and MCW	More than $10 million	Between 1 and 4 years
Option B: Open a satellite campus of an existing medical school focused on primary care	Between $5 and $10 million	Between 1 and 4 years
Option C: Establish a New Medical School Affiliated with UWSMPH and/or MCW Based on the Distributive Model	More than $10 million	More than four years
Option D: Establish a New Medical School with a Consortium of Existing Colleges, Based on the Distributive Model	More than $10 million	More than four years
Option E: Establish a New Independent Medical School	More than $10 million	More than four years
ISSUE AREA #3: TUITION AND TUITION-RELATED DEBT AS INCENTIVES		
Option A: Restore tuition assistance at MCW	Between $5 and $10 million	Less than 1 year
Option G: Provide loan forgiveness to graduates who stay	Between $5 and $10 million	Less than 1 year
ISSUE AREA #4: ANTICIPATE CHANGES IN CARE DELIVERY, INTERPROFESSIONAL TRAINING AND APPROPRIATE RESOURCES AVAILABLE FOR TEAM-BASED CARE DELIVERY		
Option A: Further study the future medical care delivery system	Less than $100,000	Less than 1 year
Option B: Increase the number of non-physician providers being trained in colleges and universities in Wisconsin	Unknown	Unknown
Option C: Incorporate team-based care delivery models into the medical education curriculum and provide clinical situations where physicians and other health professionals can practice in team settings	Between $1 and $5 million	Between 1 and 4 years
Option D: Establish an infrastructure and a vehicle for the dissemination of best practices regarding team-based medical delivery	Less than $1 million	Less than 1 year
ISSUE AREA #5: INFRASTRUCTURE AND ONGOING FINANCIAL AND CLINICAL SUPPORT	Dependent on Scope	Dependent on Scope
OTHER ISSUE AREAS		
Maintain Wisconsin's favorable malpractice climate	Less than $1 million	Less than 1 year
Survey physicians on being involved in medical education activities	Less than $100,000	Less than 1 year
Survey physicians on their plans	Less than $100,000	Less than 1 year
Study future of care delivery	Less than $100,000	Less than 1 year
Increase the number of non-physician providers being trained in colleges and universities in Wisconsin	Between $1 and $5 million	Between 1 and 5 years
Incorporate the medical home model concepts into the medical education curriculum	Less than $1 million	Less than 1 year
Disseminate best practices regarding medical homes	Less than $1 million	Less than 1 year

Background

In late 2008, the Wisconsin Council on Medical Education and Workforce (WCMEW) released its second report on the status of the physician workforce in Wisconsin. The report concluded that Wisconsin faces a significant shortage of physicians in the future, and that Wisconsin's medical education system would need to change in order to meet the challenge.

> **WCMEW was founded in 2004 by the Wisconsin Medical Society, the Wisconsin Hospital Association, the University of Wisconsin School of Medicine and Public Health, and the Medical College of Wisconsin. Its mission is to examine physician workforce issues, to serve as a forum for stakeholders in medical education and workforce, and to make the public aware of issues related to the physician workforce.**

In 2011, the Board of Directors of the Wisconsin Hospital Association formed a workgroup to further study Wisconsin's future physician workforce and to identify issues that would need to be addressed. This white paper, prepared by the WHA workgroup, is the result of the study. The WHA white paper:

- ***Projects physician supply and demand in Wisconsin.***
  Projections for both the anticipated supply of physicians, and the demand for physician services, are made for the year 2030. The projections show that the demand for physician services will outstrip supply.

- ***Analyzes the assumptions that underlie the projections to gain an understanding of their implications for satisfying demand for physician services.***
  Each of the assumptions that underlie the projections is based on current or anticipated populations, demographics, utilization patterns, physician behaviors and expectations, and Wisconsin's medical education system. The degree to which the anticipated shortfall of physicians can be reduced or eliminated is dependent upon whether changes can be made to one or more of those factors.

- ***Highlights issue areas that need to be addressed together with alternative strategies for increasing the supply of physicians in Wisconsin.*** The focus is on those factors that affect supply of physicians:
  - The in-migration of practicing physicians to Wisconsin
  - The out-migration of practicing physicians to other states
  - Physicians leaving the practice of medicine
  - Changes in medical care delivery
  - Changes in physician lifestyles
  - The number of graduates of Wisconsin's two medical schools who stay and practice in Wisconsin

The Health Consequences of Not Meeting Anticipated Demand/The Economic Benefits of Expanding Our Physician Workforce

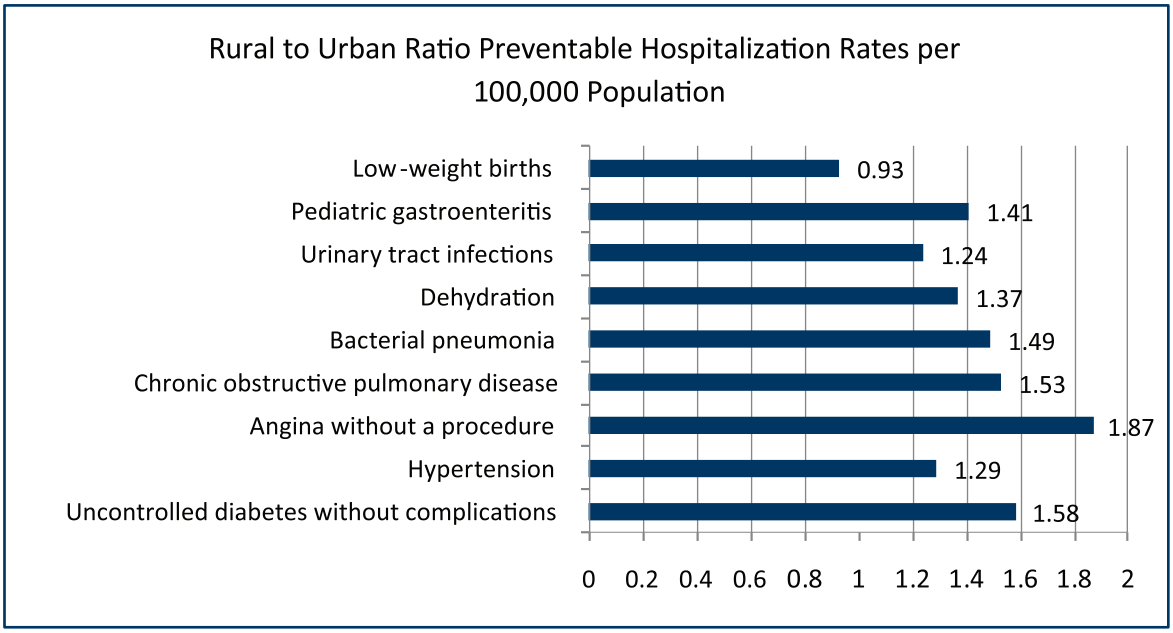
The Adverse Health Impact of Physician Shortages

While there are differing opinions about what defines adequacy of physician supply, most will agree that it should include meeting patient needs. The implications of not meeting those needs are significant. For example, if there is limited access to primary care, chronic illnesses can worsen or preventable acute episodes can occur. One way of measuring the impact of this deficiency in appropriate care is in examining inpatient hospital admissions that could otherwise have been avoided, known as preventable hospitalizations.

Preventable hospitalizations, their causes, and how they vary between population segments, have been studied for a number of years. For example, a 1999 study published in The Archives of Family Medicine found that Medicare beneficiaries in fair or poor health were 1.70 times more likely to experience a preventable hospitalization if they esided in a primary care shortage area[2].

[2] "Preventable Hospitalizations in Primary Care Shortage Areas," Archives of Family Medicine, 1999.

The Agency for Healthcare Research and Quality (AHRQ), a federal agency that focuses on quality in the United States health care system, has published a study on preventable hospitalizations. Among other results, AHRQ found that patients living in rural areas experienced a much higher rate for eight preventable hospitalizations, which AHRQ largely attributed to the generally lower supply of primary physicians in rural areas.



Significantly, "low-weight births" was a category where the urban ratio exceeded that of rural. We highlight this category because it is an area in need of improvement and one where lack of access to primary care in inner city areas is mentioned as a major reason for this adverse outcome.

To the extent that current shortages would worsen if physician supply is not expanded due to projected population increases and the accompanying aging of the population, the disparities illustrated above are likely to increase.

The Economic Impact of Physicians on Communities

While the health care benefits of having a physician in the community are widely recognized, the economic impact does not receive as much attention. Yet the economic factors can have a significant, even vital, impact on the well-being of a community. A physician practice provides employment and income and helps enhance the community's attractiveness as a place to work and live.

The reverse situation can have equally deleterious effects on a community. If a physician leaves, the residents must access health care in another community, and likely shop and make purchases while there. Those that had been employed by the physician practice must find work in a different job or new location.

A number of studies have been conducted regarding the economic impact of a physician practice on a community. Typically, three elements of economic impact are examined: employment; wages, salaries, and benefits; and revenue brought into the community. If there is a hospital in the community, additional benefits are included. The following table illustrates the estimated impact of a primary care physician on a community[3,4].

[3] Modified from "The Economic Impact of a Rural Primary Care Physician and the Potential Health Dollars Lost to Out-Migrating Health Care Services," National Center for Rural Health Works, 2007.

[4] "Economic Impact of family Physicians in Wisconsin," American Academy of Family Physicians, 2010.

Revenue	Direct Impact	Total Impact*
Clinic	$459,809	$629,938
Hospital	$751,918	$992,532
TOTAL	**$1,211,727**	**$1,622,470**
Wages, Salaries, Benefits	**Direct Impact**	**Total Impact**
Clinic	$334,616	$388,155
Hospital	$434,609	$556,299
TOTAL	**$769,225**	**$944,454**
Employment	**Direct Impact**	**Total Impact**
Clinic	4	5.5
Hospital	12.7	17.5
TOTAL	**16.7**	**23**

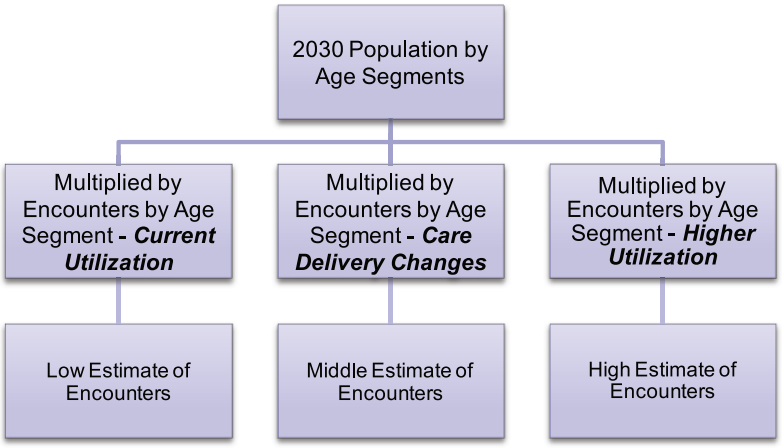
*Total impact includes the multiplier effect of money being spent in the community which, in turn, leads to more economic activity

As illustrated in the preceding chart, just one physician can have a significant economic impact on a community: $2.5 million in revenue and wages, and the employment of 23 full-time employees. When expanded to include an entire region or state, the impact becomes very substantial (recognizing that some of the multiplier effect is lost when moving beyond the local community). For example, filling all of the projected 2030 Wisconsin statewide shortage of 2,000 primary physicians would have a positive impact of as much as $5 billion, while employing about 45,000 workers. The reverse case can also be made. If Wisconsin fails to meet the anticipated demand for the 2,000 physicians, the state's economy would be $5 billion smaller.

Projected Physician Supply and Demand in Wisconsin

The following projections are made for the year 2030. The timeframe is necessary because it takes seven to ten years for a physician to complete his or her training, which means that action is required in the near future to forestall the expected significant physician shortage.

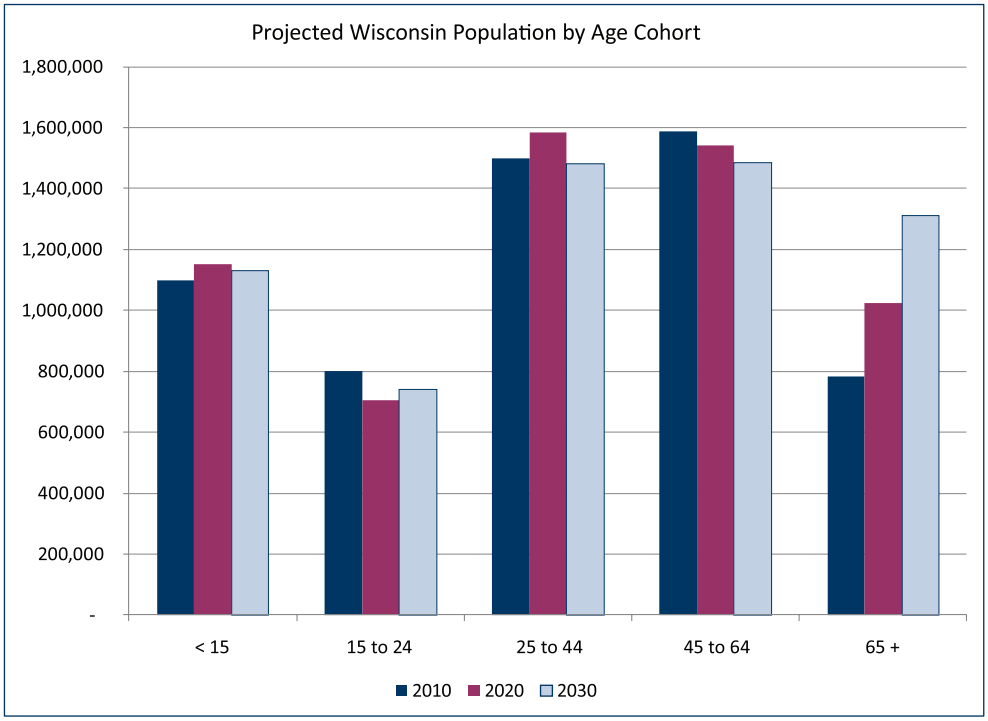
Methodology for the Projections



Demand Projections: Demand is projected for the year 2030 using 2005 national average utilization patterns for physicians by physician specialty type and by population segment (FTE physicians required)[5] combined with projected populations for those years.

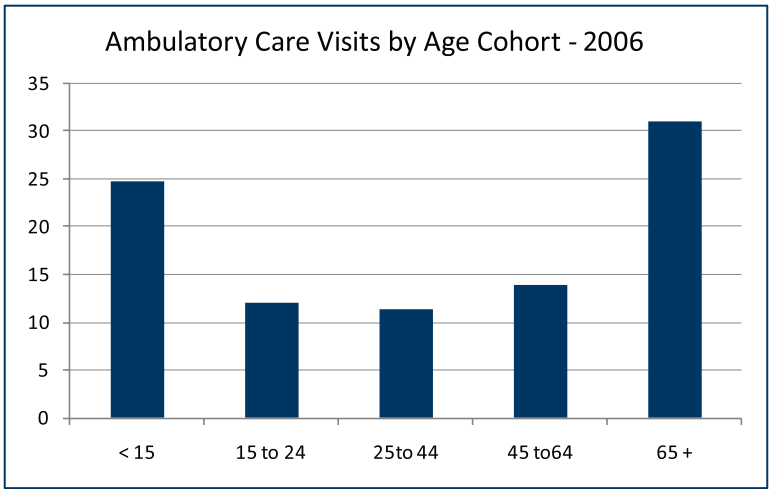
[5] 2005 National Ambulatory Medical Care Survey, National Hospital Ambulatory Medical Care Survey, Nationwide Inpatient Sample, AAMC analysis.

The following chart shows how Wisconsin's population is projected to change over the next 20 years by age cohort.



In total, the population is projected to increase by 6.5 percent, with the age 65 and older age cohort increasing by 67.6 percent.

The number of ambulatory care visits differs dramatically for certain segments of the population. The following chart shows the number of ambulatory visits by age cohort for all care settings in 2006. The total change in population, combined with the higher utilization for those age cohorts that have shown higher utilization, will result in a higher number of visits than when using population projections alone.



The Association of American Medical Colleges (AAMC) has combined the population and utilization projections, discussed above, with utilization patterns by physician specialty type to arrive at a full-time-equivalent requirement matrix. The chart that follows shows how the demand for each physician specialty type changes for each age cohort. WHA used this matrix in its projected physician demand for Wisconsin.

FTE Physician Requirements by Specialty Type (per 100,000 population)					
Age Group	Specialty*				
	Primary Care	Medical Specialties	Surgery	Other Care	Total
0-17	97	10	16	30	153
18-24	44	15	56	49	165
25-44	60	24	54	64	202
45-64	91	42	61	84	278
65-74	179	100	129	150	558
75+	276	134	166	227	804
Weighted Avg	96	34	57	73	261

* **Primary Care**: general and family practice, general internal medicine, and general pediatrics; **medical specialties**: cardiovascular disease, gastroenterology, internal medicine subspecialties, nephrology, pulmonology, and other medical specialties; **surgery**: general surgery, obstetrics and gynecology, ophthalmology, orthopedic surgery, otolaryngology, thoracic surgery, urology, and other surgical specialties; and **other patient care**: anesthesiology, emergency medicine, neurology, pathology, psychiatry, radiology, and other specialties.

Combining the population projections with the matrix above allows projections of the total number of required physicians, yielding the *first projection* (refered to as the **Low Estimate**).

A *second projection* assumes that the increases in utilization that have been seen over the last two decades[6] will continue at the same pace (referred to as the **High Estimate**). The following table shows how utilization has changed for each age cohort. For example, the utilization of services for the 65 to 74 age cohort has increased 34.8 percent during that timeframe.

Age Category	Total Increase	Avg. Annual Change
< 15 years	5.9%	0.4%
15-24 years	-14.0%	-1.0%
25-44 years	2.5%	0.2%
45-64 years	22.3%	1.4%
65-74 years	34.8%	2.0%
75+	34.7%	2.0%

A *third projection* assumes that care delivery will change to a significant degree during the next two decades. This scenario assumes that there will be strong pressure to constrain health care costs over the next 20 years as a response to the anticipated increased demand for health care services resulting from the aging of the baby boomer population as well as the continuing increases that have been seen over the past 30 years. This scenario is the **Middle Estimate**.

A change in the manner in which care is delivered is likely to be the most effective way to provide permanent cost savings. For purposes of this analysis, WHA assumed that the medical home model of care delivery will become the norm in the health care system. The medical home model represents a mode of care delivery using a team consisting of physicians and other practitioners. A number of groups have collaborated on a definition of the medical home[7]:

- Personal Physician
- Physician Directed Medical Practice
- Whole Person Orientation
- Coordinated and/or Integrated Care
- Quality and Safety
- Enhanced Access

[6] 2005 National Ambulatory Care Data.

[7] American Academy of Family Physicians, American Academy of Pediatrics, American College of Physicians, American Osteopathic Association. Joint Principles of the Patient-Centered Medical Home. March 2007.

Enhanced payments—increased fee-for-service, per member per month, and performance incentives—combined with better coordinated and intensive primary care and an infrastructure that supports it have been the main ingredients in the medical home model system success stories so far.

Much of the cost savings has been gained in reduced emergency room and inpatient hospital utilization. There have also been striking examples of quality improvement. The following table provides some examples[8]:

Pilot	# of Patients	Population	Incentive Payment	Staffing Increase	Results			
					Lower IP Admit	Lower ER Visit	Lower Total Costs	Q Measures
Care Oregon	10,000	Medicaid	P4P	1 FTE per 1K to 2K Population	13%	N/A	N/A	Improved diabetes mgmt
Care Management Plus	3,000	Medicare	None	1 FTE per 292 Population	N/A	N/A	$200K per clinic through greater phys prod	Improved diabetes mgmt; improved depression mgmt
Group Health Cooperative	8,100	Commercial	None	15% phys; 44% PA; 17% nurse	11%	29%	No net savings	Improved ACES scores
Special Care Center	1,200 medically complex	Commercial (Union Fund)	PMPM	2 FTE phys; 6 FTE health coaches; 1 FTE NP	24%	22%	35% lower cost than control group; no ROI data	Improved control hypertension; lower LDL; Improved control of A1c
Guided Care	900 high-risk	Medicare	None	1 RN per 50 to 60 Population	24%	15%	11% lower per recipient; $1,365 per year; no ROI data	Higher patient satisfaction
HealthSpring	7,468	Medicare	P4P	1 RN per 1,000 Population	11%	7%	12% lower per recipient; $55 PMPM; No ROI data	Higher screening and process scores; better outcomes
Geisinger ProvenHealth	8,634	Medicare	PMPM; P4P	1 case manager per 800 for age 65+; 1 per 3,000 for 65 & under	18%	N/A	7% lower per recipient; 2 to 1 ROI	Improved preventive, coronary artery disease, and diabetes care

While there are numerous other examples of these pilots and their evaluations[9], the seven listed in the table are characteristic of those that we have reviewed. All of the pilots required some additional staffing, but only the Group Health Cooperative and Special Care Center pilots added physicians. It is noteworthy that neither of those two pilots showed overall savings when comparing health care cost savings to additional resources required for implementation. All of the others showed some overall savings. Every pilot showed some increase in quality.

In most cases, while there was a decrease in acute care utilization, primary care utilization was either neutral or saw an increase. The increase, however, was not necessarily in face-to-face visits, but in the telephone or Internet encounters, and these additional visits did not include physicians. For the most part, the encounters involved communications between patients and care coordinators, coaches, or other non-physicians.

[8] Compiled from Agency for Healthcare Quality and Research "Innovation Exchange."
[9] For example, see "Driving quality gains and cost savings through adoption of medical homes," Health Affairs, May 2010, or "Outcomes of Implementing Patient Centered Medical Home Interventions: A Review of the Evidence from Prospective Evaluation Studies in the United States," Patient-Centered Primary Care Collaborative, November 2010.

While the data is still somewhat new, and there have been impediments to implementing medical homes[10], we feel that the results are compelling enough to draw the following conclusions:

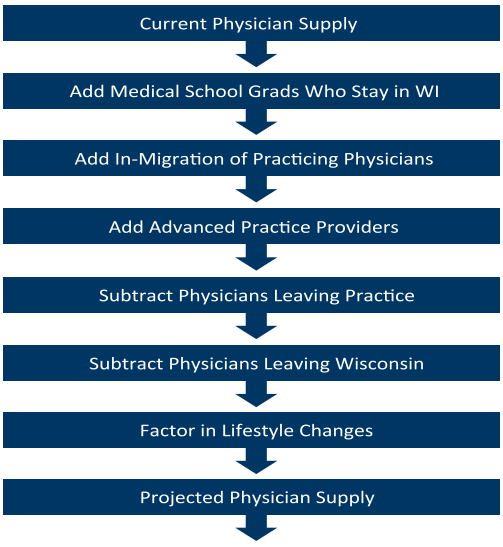
- Demand for this model will increase as its benefits are shown over time.
- Payment systems will be adjusted to encourage the adoption of more medical home systems and to reward savings and improvements.
- There will be an increased demand for non-physician professionals to serve as care coordinators and case managers in these systems.
- The data suggest that there is reason to expect a greater number of primary care visits, but the mix of professionals will change to include a greater proportion of non-physicians. We therefore incorporate this component as a "middle" projection in our physician demand model.

The table below provides a projection of demand using three scenarios of utilization. In each case, the starting point is the 2010 total for each specialty category. The 2030 projections are, first, a baseline projection assuming population and demographic changes alone. The second includes the increases in utilization discussed above. The third is the "middle" projection.

Combining the increase in population with the higher demand for office visits among older age cohorts leads to a projected increase in demand exceeding the projected increase in population alone. Using the baseline estimate, the number of encounters is projected to increase by 22 percent by 2030. However, if the utilization of physician services continues to change at rates seen over the past 15 years, the projections increase by an additional 17 percent (for a total of 39 percent) by 2030. Note that there is a deficit at the start for primary physicians. This is the same estimated deficit from the 2004 Wisconsin physician workforce report, *"Who Will Care for Our Patients?"*

DEMAND	Primary	Medical	Surgical	Other	Total
2006	4,660	1,864	1,989	1,343	9,856
2010 Estimate	4,735	1,940	2,071	1,398	10,144
2010 Starting Deficit	374				374
First Projection - Low Estimate	6,205	2,495	2,518	1,703	12,921
Second Projection - High Estimate	7,277	2,926	2,953	1,998	15,154
Third Projection - Medium Estimate	6,741	2,711	2,735	1,850	14,038

Supply Projection: The projection of the future supply of physicians is shown on the following diagram. It incorporates each of the elements that are expected to impact the supply of physicians over the next 20 years.

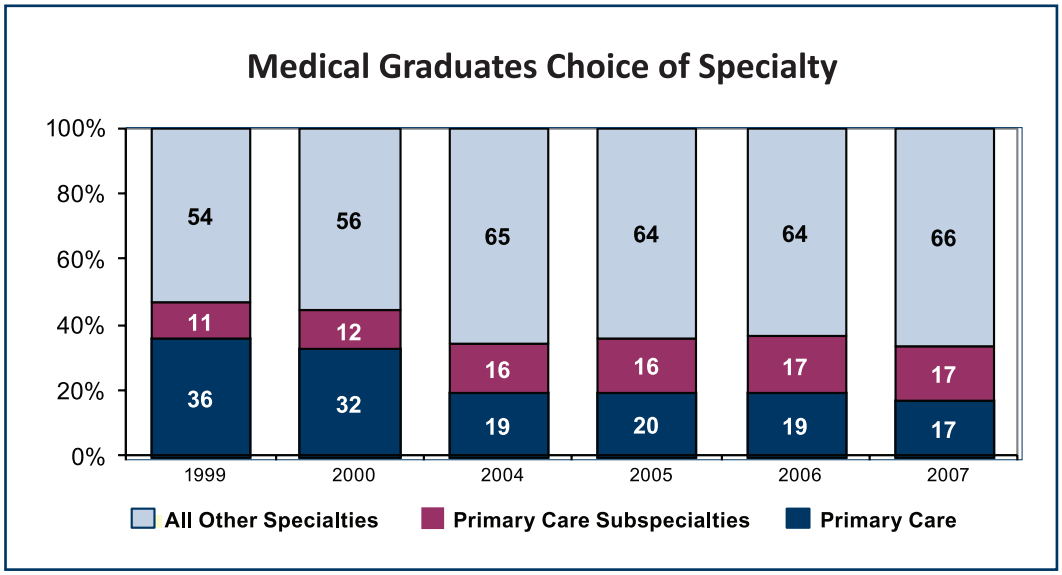


[10] Transforming Physician Practices To Patient-Centered Medical Homes: Lessons From The National Demonstration Project, Health Affairs, March 2010.

Starting with the estimated number of practicing physicians in 2010, and using the methodology outlined in the previous table, we project the following physician supply for 2030.

SUPPLY	Primary	Medical	Surgical	Other	Total
2006	4,660	1,864	1,989	1,343	9,856
2010 Estimate	4,735	1,940	2,071	1,398	10,144
20-year Impact of the Following Factors:					
Wisconsin Medical Schools Production	452	792	845	571	2,660
WARM	330				330
Recruited from Other States	6,290	3,115	3,324	2,244	14,973
Leaving Wisconsin	(3,310)	(1,639)	(1,749)	(1,181)	(7,880)
Retiring and Other	(3,090)	(1,530)	(1,633)	(1,102)	(7,355)
Lifestyle Changes	(433)	(214)	(229)	(154)	(1,030)
2030 Estimate	4,974	2,464	2,629	1,775	11,842

One important difference in the supply calculations for primary care physicians is in the changing preferences among medical students regarding primary versus other specialties. Historically, about a third of graduating students have chosen primary specialties. However, over the last ten years there has been a shift in overall preferences. As the chart below illustrates, until the year 2000, about a third of medical school graduates indicated a preference for primary care. However, for the last six years, only about one in five has shown the same preference. WHA used the average for the last several years of 17 percent for its 2030 projections.



Surplus or Deficit – Comparing the supply with the demand projections leads to the following surplus/deficit projections:

SUPPLY	Primary	Medical	Surgical	Other	Total
2006	4,660	1,864	1,989	1,343	9,856
2010 Estimate	4,735	1,940	2,071	1,398	10,144
20-year Impact of the Following Factors:					
Wisconsin Medical Schools Production	452	792	845	571	2,660
WARM	330				330
Recruited from Other States	6,290	3,115	3,324	2,244	14,973
Leaving Wisconsin	(3,310)	(1,639)	(1,749)	(1,181)	(7,880)
Retiring and Other	(3,090)	(1,530)	(1,633)	(1,102)	(7,355)
Lifestyle Changes	(433)	(214)	(229)	(154)	(1,030)
2030 Estimate	4,974	2,464	2,629	1,775	11,842
DEMAND	**Primary**	**Medical**	**Surgical**	**Other**	**Total**
2006	4,660	1,864	1,989	1,343	9,856
2010 Estimate	4,735	1,940	2,071	1,398	10,144
2010 Starting Deficit	374				374
First Projection - Low Estimate	6,205	2,495	2,518	1,703	12,921
Second Projections - High Estimate	7,277	2,926	2,953	1,998	15,154
Third Projection - Medium Estimate	6,741	2,711	2,735	1,850	14,038
DEFICIT/SURPLUS	**Primary**	**Medical**	**Surgical**	**Other**	**Total**
2030 Demand – Low Estimate	(1,231)	(32)	111	72	(1,080)
Average Annual Amount	(62)	(2)	6	4	(54)
2030 Demand - High Estimate	(2,303)	(463)	(324)	(223)	(3,312)
Average Annual Amount	(115)	(23)	(16)	(11)	(166)
2030 Demand - Middle Estimate	(1,767)	(247)	(106)	(75)	(2,196)
Average Annual Deficit Growth in Each of Next 20 Years	(88)	(12)	(5)	(4)	(110)

The base demand uses demographic and population changes, while a higher figure is derived by adding the average utilization increases experienced over the past 20 years.

One could argue for either scenario. The high estimate merely assumes that trends showing increasing utilization will continue, while the base assumes a constraint on that increase due to, for example, increased physician efficiency or diminishing resources available for health care. The middle projection incorporates changes in care delivery reflecting the movement toward the medical home model.

Each demand scenario, compared to the projected supply, arrives at a surplus or deficit for each physician specialty type. For example, base supply compared to base demand yields a deficit of 1,080 physicians by 2030, meaning that the physician deficit will increase by an average of 54 positions for the next 20 years. The high demand projection shows an annual shortfall of 166 physicians, and the midpoint yields an annual deficit growing by 110 physicians for each of the next 20 years.

Analysis of the Supply/Demand Projections

To reiterate, the factors that affect physician supply are:

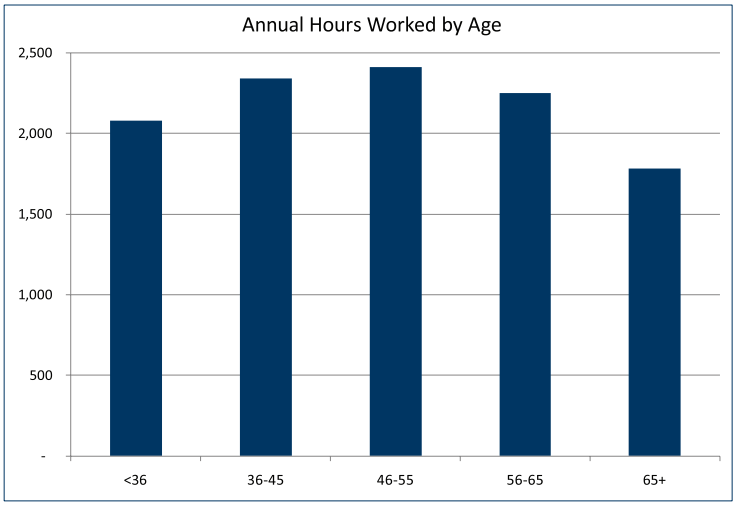
- The in-migration of practicing physicians to Wisconsin
- The out-migration of practicing physicians to other states
- Physicians leaving the practice of medicine
- Changes in medical care delivery
- Changes in physician lifestyles
- The number of graduates of Wisconsin's two medical schools who stay and practice in Wisconsin

For each of these factors, we will provide detailed explanation and analysis.

In-migration of Practicing Physicians – Each year, an estimated 750 physicians are recruited into Wisconsin from other states[11]. Wisconsin's hospitals, medical groups, and health systems are very active in this effort, as evidenced by the many job search and health system websites advertising openings for physician positions in Wisconsin. The Internet has become the most relied-upon source for physician job searches[12]. A recent scan of these sites showed more than 900 physician openings in Wisconsin being advertised.

Out-migration to Other States – At the same time as in-migration is occurring, out-migration is taking place. An estimated 390 physicians per year leave Wisconsin to practice in other states[13]. The demand for physicians is not unique to Wisconsin, and other states are just as aggressive in their recruitment efforts. Indeed, the Association of American Medical Colleges has forecasted a nationwide shortfall of more than 130,000 physicians by 2025, an estimate they recently doubled due to the passage of national health reform. One would assume that competition among states for physicians will not abate, but in fact, increase.

Physicians Leaving Practice – Physicians are also leaving their practices. Whether due to retirement, or for other reasons (taking up another profession, death, etc.) an estimated 370 Wisconsin physicians per year are leaving the practice of medicine[14]. Even before actual retirement takes place, on average, physicians slow down their practices by reducing the number of office hours they work, as is shown on the following chart[15]. As the chart suggests, if the average age of the physician workforce increases because of not replenishing the pool with younger physicians, the total hours worked would decrease. Currently, Wisconsin has a relatively younger physician workforce, with 20 percent being older than 60 compared to the national average of 25 percent[16].



[11] This estimate is based on averages of other upper Midwest states where data is readily available. Wisconsin has no similar repository of in- or out-migration data.
[12] Merritt and Hawkins 2008 survey of final year residents.
[13] This estimate is based on averages of other upper Midwest states where data is readily available. Wisconsin has no similar repository of in- or out-migration data.
[14] The national average of 3% (from AMA data) is used for this estimate.
[15] Source: AMA/HRSA analysis, 2002.
[16] 2009 State Physician Workforce Data Book, AAMC.

Changes in medical care delivery – As discussed previously in this report, the medical home model is expected to become the norm in primary care delivery. This will increase the demand for non-physician professionals, including nurse practitioners, registered nurses, social workers and other health professionals. The impact on specific classifications of professionals, however, is difficult to gauge given the many different ways organizations have designed and configured their particular medical home models. The WHA workgroup concluded that the involvement of these personnel in delivering a significant percentage of services will to some degree lower the rate of increase in physician demand below the high estimate.

Physician Lifestyle – The number of hours that physicians work has steadily declined over the past 30 years, as the following table illustrates[17]:

Average Hours Worked per Week					
	1976-1978	1986-1988	1996-1998	2006-2008	% Change - '96-98 and '06-08
All Physicians	55.2	55.6	54.9	51.0	-7.2%
Nonresident	53.6	53.3	52.6	49.6	-5.7%
Residents	60.8	65.0	65.7	59.3	-9.8%
Excluding Residents					
Age < 45	55.9	55.3	54.2	50.2	-7.4%
Age > 45	51.7	51.1	51.2	49.3	-3.7%
Men	54.6	54.4	54.4	51.7	-5.0%
Women	44.2	47.0	46.7	44.4	-5.1%
Hospital	50.2	52.0	52.2	50.1	-4.0%
Non-hospital	54.4	53.6	52.8	49.4	-6.4%
Self-employed	54.3	52.8	54.2	50.9	-6.0%
Non-self-employed	53.1	53.5	51.5	49.0	-4.7%

Overall, average hours worked decreased by 5.7percent for nonresident physicians from 1998 to 2008, with the largest decrease among those aged 45 or younger. Other notable differences, both in terms of changes and in hours worked, are for gender, and in the self-employed and non-self-employed categories.

The lifestyle expectations of physicians have significantly changed over the past several decades. Surveys of medical school graduates have shown that younger physicians expect a different balance between work and leisure. For example, in a 2006 survey conducted by physician-staffing firm Merritt, Hawkins & Associates, 63 percent of medical residents said the availability of free time was causing them "a significant level of concern" as they entered the profession, up from 15 percent in 2001[18].

Those sentiments are reflected in the data. The following table[19] shows how the number of annual work hours by age group has changed over the past several decades.

Age	1985	2002	% Change
<36	2,330	2,080	-11%
36-45	2,370	2,340	-1%
46-55	2,315	2,410	4%
56-65	2,250	2,250	0%
66+	2,065	1,780	-14%

[17] JAMA 2010; three year rolling averages; Current Population Survey data.
[18] 2006 Merritt, Hawkins survey of final year residents.
[19] AMA Masterfile, non-resident physicians, AMA analysis.

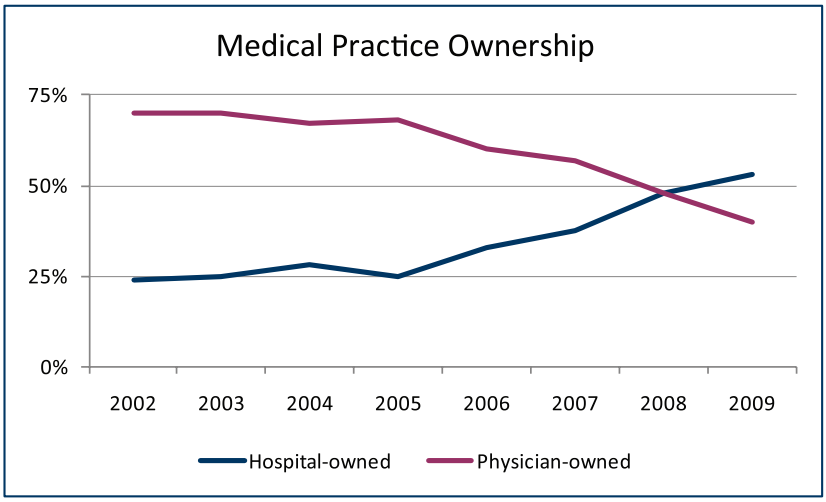
Moreover, female physicians work about 14 percent fewer hours than their male colleagues. Women are becoming a larger proportion of the physician workforce. In 1990, 83 percent of practicing physicians were men. By 2009, the percentage was 71 percent[20]. In 1990, 65 percent of medical school students were men. In 2009, 53.5 percent were men[21]. Ultimately, this same percentage (about 54 percent) should be representative of the active physician population; so one must assume that the number of hours worked by the average physician will diminish accordingly as the supply of older male physicians is replaced increasingly by younger females.

Finally, the self-employed/non-self-employed difference is important because non-self-employed physicians, on average, work four percent fewer hours than those who are self-employed. According to a review by the *New England Journal of Medicine*, "The percentage of U.S. physicians who own their own practice has been declining at an annual rate of approximately two percent for at least the past 25 years"[22]. The Center for Studying Health System Change, in its August 2007 Tracking Report, provided the following summary[23]:

Physicians Who are Full/Part Owners, by Specialty, 1996-97 to 2004-05				
	1996-97	**1998-99**	**2000-01**	**2004-05**
All Physicians	61.6%	56.7%	55.9%	54.4%
Primary Care	54.3%	49.6%	50.1%	51.8%
Medical Specialists	58.1%	51.8%	51.7%	47.3%
Surgical Specialists	75.5%	72.7%	71.2%	68.4%

This phenomenon is more pronounced in Wisconsin, where over 65 percent of all physicians are in medical groups having more than 100 physicians, and only 5 percent in solo practice[24].

The trend in the percentage of medical practices owned by hospitals shows a similar pattern[25].



Combining the three factors of gender practice differences, lifestyle expectations, and employment, we estimate that the average work hours, and therefore the supply of physician FTEs, will decline by 8 percent by 2030.

Wisconsin Medical School Graduates Who Stay – Wisconsin has two medical schools: the University of Wisconsin School of Medicine and Public Health (UWSMPH), a public school, and the Medical College of Wisconsin (MCW), which is private. Each year, UWSMPH graduates an average of 175 students, while MCW averages 212.

[20] AMA
[21] AAMC
[22] New England Journal of Medicine, February 12, 2009.
[23] HSC Community Tracking Study Physician Survey.
[24] Wisconsin Medical Society "Doctors by Group Size 2008-2010."
[25] Medical Group Management Association Physician Compensation and Production Survey Report.

The 175 class size for UWSMPH includes 25 students in the Wisconsin Academy for Rural Medicine (WARM), a program started in 2007 that attracts students who are likely to practice in rural areas after graduation. UWSMPH recruits and screens applicants for their potential to practice in rural areas, and has designed a curriculum with rural training tracks. MCW has initiated a comparable program targeted at inner-city practice, but has not increased its class size.

Important determinants of whether a state's medical education system produces physicians who stay and practice in that state include:

- Whether students are graduating from medical schools within the state
- Whether physicians-in-training are completing residencies within the state
- The percentage of the medical school students who were state residents at enrollment
- The number of residency positions relative to the state population and medical school students
- The percentage of residency positions filled by graduates of the state's medical schools

The following table[26] shows how many physicians who graduated from Wisconsin's medical schools or residency programs are still practicing in Wisconsin.

Physicians Retained		
	WI	**U.S.**
Percent When Graduating from Med School in State	37.8%	38.8%
Percent When Completing Residency in State	46.8%	47.4%
Percent When Graduating from Med School in State and Completing Residency in State	70.0%	66.2%

Note the additive effect when both graduation and completing medical residency occur in the same state. Graduation from a Wisconsin medical school means 38 percent retention; completing a residency only means 47 percent retention; but when both occur, there is a 70 percent chance of retaining those physicians. Another additive factor is whether the physician is originally from Wisconsin. When that factor is included, there is an even greater likelihood of retention, as shown in the following table[27].

Physicians Retained		
	From WI	**Overall**
Wisconsin Medical School Graduate Only	56%	38%
Wisconsin Residency Program Graduate Only	Unknown	47%
BOTH Medical School and Residency Program	86%	70%

Wisconsin compares well with other states when physicians both graduated from a Wisconsin medical school and completed their residency in Wisconsin, but not as well when they experienced one without the other. A closer look at the data[28], with UWSMPH and MCW compared to one another, shows a substantial difference.

Physicians Retained		
	WI	**U.S.**
Percent When Graduating from Medical School in State	37.8%	38.8%
Percent When Graduating from Public Medical School in State	42.8%	46.9%
Percent When Graduating from Private Medical School in State	33.5%	28.7%

In this comparison, UWSMPH has a significantly lower percentage than the national average for public medical schools of physicians who graduate from its program and are still practicing in the state. MCW has a significantly higher percentage than the national average for private medical schools. The percentages largely offset one another so that the overall percentage for Wisconsin is near the national average.

[26] 2009 AAMC, WHA analysis.
[27] 2009 State Physician Workforce Data Book, Nov. 2009, AAMC; WHA analysis.
[28] Ibid.

The table below provides a comparison including Midwest states in the percentage of first-year medical students who were state residents at the time of enrollment[29]. State-sponsored schools are shown in bold, while state totals are in regular font. As the chart shows, the national average is 61.9 percent for this measure, while Wisconsin's percentage is 51.7 percent. This is a weighted average of 73.1 percent for UW and 33.8 percent for MCW. Other surrounding states show higher averages. If one examines only the percentages for public schools in surrounding states, the UW figure is lower than the average.

	In State	Out of State	% In State	% In State Matriculants	% Out of State Matriculants
Wisconsin	194	181	51.7%	14.9%	2.1%
MCW	69	135	33.8%	10.8%	2.4%
UWSMPH	***125***	***46***	***73.1%***	***18.8%***	***1.6%***
Iowa	95	54	63.8%	28.4%	1.8%
Indiana	271	51	84.2%	39.9%	1.7%
Minnesota	212	68	75.7%	17.5%	1.0%
University of Minn	***195***	***34***	***85.2%***	***24.1%***	***1.1%***
Michigan	470	190	71.2%	12.6%	1.7%
Michigan	***87***	***83***	***51.2%***	***8.8%***	***2.0%***
Michigan St	***157***	***43***	***78.5%***	***11.7%***	***0.9%***
Wayne St	***226***	***64***	***77.9%***	***16.2%***	***2.7%***
Illinois	647	481	57.3%	7.8%	1.2%
Univ. of Illinois	***258***	***64***	***80.1%***	***15.5%***	***1.0%***
S. Illinois University	***72***	***0***	***100.0%***	***6.8%***	***0.0%***

The percentage of in-state applicants accepted to Wisconsin's medical schools is 14.9 percent, as shown in the table below[30]. Again, this is a result of combining the MCW admission rate of 10.8 percent and the UW rate of 18.8 percent. The overall rate is higher than the national average, but below the rates of several Midwestern states such as Iowa and Indiana. In addition, the admission rate for UWSMPH is lower than that of other public institutions, such as the University of Iowa and Indiana University. Finally, the ratio of in-state to out-of-state matriculating applicants can be used as a measure of how preferentially a medical school treats in-state applicants. The ratio for UWSMPH is 11.7, compared to 16.2 for the University of Iowa, 23.2 for Indiana University, and 17.1 for the state of Minnesota, which includes both a public school, University of Minnesota, and a private school, Mayo.

	Applications			Matriculants					
	In State	Out of State	% In State	In State	Out of State	% In State	% In State Matriculants	% Out of State Matriculants	In/Out State Ratio
Wisconsin	1,305	8,477	13.3%	194	181	51.7%	14.9%	2.1%	7.0
Medical College of WI	638	5,617	10.2%	69	135	33.8%	10.8%	2.4%	4.5
University of Wisconsin	667	2,860	18.9%	125	46	73.1%	18.8%	1.6%	11.7
Iowa	334	3,076	9.8%	95	54	63.8%	28.4%	1.8%	16.2
Illinois	8,341	39,612	17.4%	647	481	57.3%	7.8%	1.2%	6.4
Indiana	680	2,956	18.7%	271	51	84.2%	39.9%	1.7%	23.2
Michigan	3,718	11,208	24.9%	470	190	71.2%	12.6%	1.7%	7.5
Minnesota	1,212	6,630	15.5%	212	68	75.7%	17.5%	1.0%	17.1
Ohio	5,891	16,984	25.8%	574	405	58.6%	9.7%	2.4%	4.1
U.S.	136,952	443,352	23.6%	11,591	7,074	62.1%	8.5%	1.6%	5.3

[29] Ibid 2009 AAMC.

[30] AAMC, WHA Analysis.

The locations where physicians experience their residency training are also predictors of where they will ultimately practice medicine. If there are not a sufficient number of residency positions in a state, medical school graduates will travel to other states and, in many cases, stay there to practice medicine. Again, Wisconsin is lower than the national average, as shown in the following table.

	Residents	Per 100k Pop	Rank
U.S.	108,488	35.7	
Wisconsin	1,726	30.7	21
Illinois	5,832	45.2	8
Indiana	1,331	20.9	38
Iowa	801	26.7	26
Michigan	4,603	46.0	7
Minnesota	2,211	42.4	12

Another way to measure whether there are a sufficient number of residency positions is by comparing the positions to the number of medical school undergraduates. The higher the ratio, the more likely that graduates from a state's medical schools will find a residency in that same state. The following chart shows that Wisconsin's ratio is lower than the national average ratio[31].

	Under-graduates	Residents	Ratio	Rank
U.S.	88,883	110,298	1.24	
Wisconsin	1,498	1,653	1.10	25
Illinois	5,586	5,978	1.07	28
Indiana	1,178	1,318	1.12	21
Iowa	1,477	801	0.54	42
Michigan	3,249	5,598	1.72	8
Minnesota	1,138	2,117	1.86	4

The third measure, the percentage of residency positions filled by graduates of the state's medical schools, shows similar figures for both MCW and UWSMPH. Analysis of the 2008 AMA Masterfile of physicians currently in clinical practice shows the following:

Wisconsin Practicing Physicians Who Had First Year Residency in Wisconsin*			
	MCW	UW	Total
First-Year Residency in a Program in Wisconsin	1,767	1,445	3,212
Graduated	5,412	4,509	9,921
Percent	32.6%	32.0%	32.4%

** Source: 2008 AMA Masterfile, WHA Analysis*

Of the 9,921 physicians currently practicing in Wisconsin who attended a Wisconsin medical school, only 32 percent had their first-year residency in a Wisconsin program.

[31] 2009 AAMC.

Three specialties – Family Medicine, Psychiatry, and General Surgery – are the focus of this report because they are either key to providing primary care or are seen as being in short supply. The chart that follows shows the percentage of the UW and MCW residency program positions filled by graduates of UW and MCW in these specialties.

Percentage of UW and MCW-Based Residency Program Positions Filled by UW and MCW Graduates	
Family Medicine	23%
Psychiatry	22%
General Surgery	33%

Issues and Options

As outlined above, WHA projects a shortfall of physicians ranging from 1,080 to 3,312 by 2030. Of the totals, primary care physicians are projected to make up the bulk of the shortfalls, comprising more than 80 percent of the total if the middle demand scenario is used.

The options considered for reducing or eliminating the shortfalls relate to those factors that affect supply:

- The in-migration of practicing physicians to Wisconsin
- The out-migration of practicing physicians to other states
- Physicians leaving the practice of medicine
- Changes in medical care delivery
- Changes in physician lifestyles
- The number of graduates of Wisconsin's two medical schools who stay and practice in Wisconsin

1. **In-Migration and Out-Migration of Physicians** – These two factors need to be considered together because they reflect the same dynamics, only in opposite directions.

A recent study of final-year residents in Illinois found that the major considerations for a choice of practice location included:

Consideration for Choice of Practice Location*	
Proximity to family	78%
Overall opportunities in my specialty/practice	77%
Employment opportunities for spouse/partner	73%
Salary/compensation	64%
Medical liability environment	54%
Cost of living	48%
Economic conditions of the state	28%
Climate (weather)	25%

* Illinois Survey of New Physicians 2010. Percent of respondents rating consideration important or very important.

While these considerations are those of new physicians, they also seem to reflect those of the overall physician workforce—or at least those physicians who have chosen to practice in upper Midwest states like Wisconsin. Physician recruitment and relocation firms are a good source of information on the reasons why physicians leave their existing practices and relocate. The following is typical based on a review of literature on this issue[32]:

[32] Franklin Joseph and Associates.

- Salary
- High Malpractice Premiums
- Underutilized Medical Skills; Need for Upward Advancement; Long Hours and Busy Call Schedule
- Lack of Autonomy/Appreciation
- No Choice Due to Restructuring/Declining Practice
- Proximity of Work to Family
- Poor Relationships with Hospital Administration
- Poor Relationships with Medical Faculty/Colleagues
- Desires Another Climate
- Family Uncomfortable in the Community

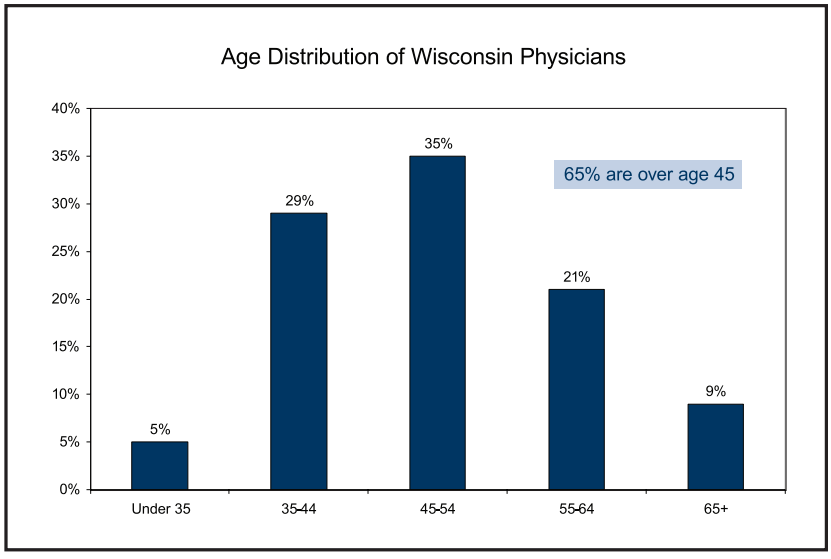
Most of these reasons are unique to the particular setting in which the physician is practicing, and not related to the general practice environment. Some, such as the malpractice climate, are more regional or statewide, and therefore amenable to potential policy actions.

It is also important to note that the AAMC has recently doubled its projected national shortfall of primary care physicians based on the expected increased demand for services as a result of health reform.

Reform is expected to increase the number of people with insurance by 32 million, or 10.3 percent of the U.S. population; those individuals with coverage, on average, use twice as many health care services as those who do not. Wisconsin already has a high percentage of its citizens covered by insurance or government programs. The increased number of covered individuals is expected to be only 120,000, or two percent of the Wisconsin population. Therefore it is likely that there will be a much greater NEW demand for health services outside of Wisconsin than within the state, meaning that there will be increased efforts at recruiting away Wisconsin physicians by organizations outside the state; likewise is will be more difficult for Wisconsin to maintain its current level of in-migration of new physicians. This means that Wisconsin must compete at a higher level to retain its workforce. The outflow of physicians from Wisconsin could increase as a result of this dynamic; however, in this analysis, WHA has assumed no change in outflow due to anticipated increased efforts to retain these physicians.

Physician practice in Wisconsin has certain advantages and disadvantages, as is the case in other states. The Wisconsin advantages include a favorable malpractice climate, a progressive style of medicine as reflected in the integrated systems found throughout the state, and a relatively higher percentage of employed physicians—all factors that physicians, especially younger physicians, find attractive. In those instances where advantages can be strengthened or disadvantages minimized, those steps should be taken. **Wisconsin should maintain its favorable malpractice climate**, but apart from that, there appears to be little by way of policy initiatives that can be done to improve the overall practice environment.

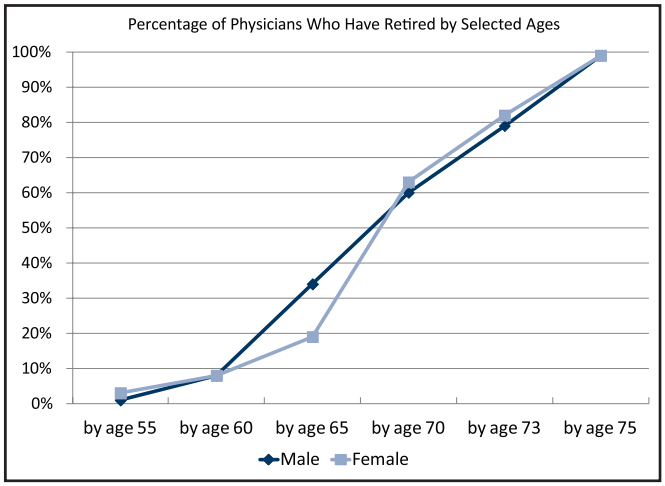
2. **Physicians Leaving the Practice of Medicine** – This largely means retirement. The age distribution of Wisconsin physicians is shown on the following chart[33].



[33] 2008 AMA Masterfile, WHA Analysis.

Note that by 2030, 65 percent will no longer be in practice. In a related study, the Center for Studying Health System Change concluded that by 2020, a third of all physicians would no longer be practicing medicine.

The following chart summarizes the historical percentage of physicians who have retired by selected ages[34]:



Together, the two charts help validate the annual three percent retirement/ceasing practice rate, i.e., if 65 percent are over the age of 45, then in 20 years, all will have entirely or substantially ceased practicing. However, currently practicing physicians appear to have different expectations. The following table contrasts historical retirement ages with those intended by currently practicing physicians[35].

Retirement History versus Intentions for Male and Female Physicians						
	Percent Retired/Inactive					
	by age 55	by age 60	by age 65	by age 70	by age 73	by age 75
Male – Historical	1%	8%	34%	60%	79%	99%
Male – Intentions	7%	11%	59%	74%	93%	100%
Female – Historical	3%	8%	19%	63%	82%	99%
Female – Intentions	9%	32%	74%	94%	98%	100%

If currently practicing physicians follow through on these intentions, a substantially greater percentage of both male and female physicians will be retiring earlier than what has been the case historically. Since physicians older than 55 spend more than 2,100 hours seeing patients, with those older than 65 still spending 1,780 hours, a significant reduction in the physician workforce would take place; WHA estimated as much as four percent could be lost to early retirement and increase the anticipated shortage.

It is difficult to make any projections regarding these stated intentions. Many factors, such as changing economic conditions, could affect actual retirement dates. Given the uncertainties, we have chosen to use the historical retirement patterns in our projections; but the analysis above is worth noting.

POTENTIAL ACTION: There are more than 2,500 active physicians older than 60 in Wisconsin. This is a large pool of potential mentors and instructors. Wisconsin should survey this group of physicians to gauge their interest in being involved in medical education activities.

3. **Changes in Medical Care Delivery** – As discussed above, we project that the medical home model will become the norm for primary care. This model incorporates non-physician professionals to a greater degree in the delivery of medical care, which implies a greater demand for their services. For this model to be successful over the long term, its tenets need to be incorporated into the health and medical education process.

[34] AMMA-AAMC Survey of physicians over the age of 50.
[35] Ibid.

POTENTIAL ACTION: In order to increase the number of non-physician professionals needed in the future Wisconsin medical delivery system, two actions are necessary: the pool of non-physician professionals must be increased, and medical home concepts must be more widely incorporated into medical practice. Necessary actions steps are:

- Increase the number of needed positions in colleges and universities in Wisconsin and incorporate the medical home model concepts into the medical education curriculum, including providing clinical situations where physicians and other health professionals practice in team settings.
- Establish an infrastructure and a vehicle for the dissemination of best practices regarding medical homes.

4. **Lifestyle Expectations** – Those individuals currently entering the profession have different expectations from those graduating from medical school 30 years ago: they expect more balance between work and leisure. And the makeup of those individuals has changed—most significantly, more women are entering the profession. As stated above, WHA estimated the impact of these factors will lead to an overall decrease of eight percent in the average hours worked by physicians.

POTENTIAL ACTION – Wisconsin should monitor the changes taking place with physicians' expectations regarding their practice of medicine. In 2009, the Wisconsin Medical Society surveyed practicing physicians on this issue. This survey should be repeated on a bi-annual basis and potentially be tied to re-licensure.

5. **Medical School Graduates Who Stay and Practice** – Perhaps the biggest opportunity, and the biggest challenge, is in changing the medical education system in Wisconsin. ***The other potential actions outlined in this report will not be sufficient to meet the anticipated need for an additional 100 physicians per year for each of the next 20 years.*** In looking at the supply projections, the in- and out-migration, together with physicians leaving practice, dwarf what is being provided through Wisconsin's medical education and training system. Yet, as discussed above, there are a limited number of policy options that can be pursued. At the same time, the magnitude of these other elements point out how vulnerable Wisconsin is to factors largely outside of its ability to influence them. This reinforces the need for significant changes in medical education, both in undergraduate and graduate medical education.

Both undergraduate and graduate medical education play a role in determining the adequacy of the physician workforce, and are interrelated in terms of affecting how many graduates stay and practice in a state. The following statistics for Wisconsin are telling:

- UWSMPH and MCW graduates still practicing in Wisconsin: 37 percent
- When only completing RESIDENCY in Wisconsin: 47 percent
- When graduating from medical school in Wisconsin AND completing RESIDENCY in Wisconsin: 70 percent

Increasing the capacity and effectiveness of either will bring more physicians to Wisconsin, and having them work in concert will have a reinforcing effect. Conversely, not focusing on both will diminish overall results. For example, in order to generate 100 more physicians a year who will stay in Wisconsin and practice, a medical school would need a class size of 270 students if we assume the same 37 percent retention rate. This would be larger than the graduating class of either of the two existing medical schools.

Issue Area #1: The Need to Expand Wisconsin Graduate Medical Education Programs

Wisconsin's graduate medical education programs must be expanded. Where a physician experiences his residency is a good predictor of where he will ultimately practice medicine. Because of this significant effect on physician retention, this action should be taken independent of any other changes in the medical education and training system.

But more needs to be done in addition to increasing the number of residency positions. Only about a third of Wisconsin's medical school graduates have their first-year residencies in Wisconsin. The medical schools need to "sell" Wisconsin residency programs to current students, and in turn, residency programs need to better inform medical school students of the advantages of their programs.

Finally, it should be noted that Wisconsin hospitals are vital partners in residency programs, providing the bulk of the resources, clinical sites, and administrative efforts. It is understood that increasing residency positions requires an additional commitment of resources, much of which will have to be provided by hospitals.

As part of this issue, there has been concern expressed regarding whether enough clinical sites would be available for additional residency positions. While no inventory of such clinical sites has been conducted, it can be assumed that, since Wisconsin has fewer medical students per resident than most states, it is reasonable to believe that it has not yet exhausted the clinical site opportunities available. Nevertheless, an inventory of potential clinical resources should be conducted.

There will be funding challenges as well as hurdles in gaining support from hospitals and physicians not currently partnering with the medical schools in medical education and training. *But these and other questions surrounding Wisconsin's needs and capabilities reinforce the idea that a multi-stakeholder, statewide coordinated effort, discussed further below, should be undertaken to address the issues involved.*

Option A: Increase residency positions without increasing medical school graduates.

This option should increase the number of physicians practicing in Wisconsin. An initial step in this direction was recently made with the development of the Rural Physician Residency Assistance Program.

> Section 36.63 of 2009 Wisconsin Act 190 was passed and funded by the state Legislature to address the growing need to prepare rural physicians *in* rural Wisconsin *for* rural Wisconsin. The legislation allocates $750,000 annually to a new Rural Physician Residency Assistance Program and charged the University of Wisconsin Department of Family Medicine to administer these funds.

However, the number of positions is not the only factor to consider. The National Resident Matching Program will determine how many, and which candidates, fill open residency positions. The process involves each program ranking applicants, and applicants ranking programs. The two lists are matched in a blinded way, and the results are shared in March each year. Neither the potential resident nor the residency program is allowed to indicate its preference to the other.

Nearly all of Wisconsin's residency positions are filled each year. However, only 30 to 40 percent of the positions are filled by UWSMPH or MCW graduates each year[36]. The remainder is filled by graduates of other U. S. medical schools or graduates of foreign medical schools. The family practice residency programs of UW and MCW show 26 percent of the positions filled each year with Wisconsin medical school graduates. The UW and MCW psychiatry residency programs had 22 percent of their positions filled by UW or MCW graduates in 2011, and 33 percent of the general surgery positions filled by UW and MCW graduates[37]. While having residency positions filled is a plus—47 percent stay and practice—having positions filled with Wisconsin graduates increases that percentage to 70 percent.

Therefore, any increase in residency positions should be accompanied by a study of current residency programs with an objective of understanding why Wisconsin graduates choose to either enter the state programs or elect to go elsewhere, and implementing changes to improve the numbers. The study would include a survey of third- and fourth-year undergraduates to understand their rationale for choosing certain residency programs; and another survey of final-year residents regarding their plans for clinical practice and their residency experiences.

The cost per student is estimated to range from $120,000 to $150,000[38] per resident. The timetable would be between one to two years assuming timely accreditation. The study to improve the instate retention would take three to six months, and receiving ACGME accreditation would take several years.

[36] AAMC
[37] UW and MCW data
[38] MGC America, inc.

Option B: Increase residency positions in tandem with increasing medical school graduate options outlined above.

The preferred option is to increase the residency positions in tandem with the undergraduate options outlined above so that the graduates have a residency "home" to go to. The programs should also be designed to complement the option that is chosen as well as incorporate the improvements from the study suggested in Option A.

Option C: UWSMPH, MCW, and residency programs should enhance communication.

As mentioned previously, only about one-third of Wisconsin's medical school graduates have their first-year residencies in a Wisconsin program. Residency experience is a strong predictor of where physicians ultimately practice medicine. The data shows that when graduates of a Wisconsin medical school also have their residencies in a Wisconsin program, there is a 70 percent chance that they will practice in Wisconsin[39]. But there is a relatively low percentage of Wisconsin medical school graduates having their residency experience in a Wisconsin residency program (see table on page 21). Discussions with stakeholders suggests that this is at least partly due to a lack of adequate communication between the schools and residency programs as well as insufficient information being supplied by residency programs to Wisconsin medical school undergraduates.

Given the impact that combining medical school and residency experience in the same state appears to have on physician retention for Wisconsin, the medical schools and the residency programs should identify ways to enhance communication between the undergraduate and residency programs, and to better inform medical school undergraduates of the positive aspects of Wisconsin's residency programs.

Issue Area #2: The Need to Increase the Number of Wisconsin Medical School Graduates

In addition to expanding graduate medical education, Wisconsin needs to increase the number of medical school graduates. Combining these two actions will enhance the likelihood that physicians will stay and practice medicine in Wisconsin.

Option A: Increase the class size and maximize in-state admission quotas at UWSMPH.

Currently, UWSMPH averages about 175 students per class. Twenty-five of those students are enrolled in the Wisconsin Academy for Rural Medicine (WARM). The WARM program represents the first significant increase in class size in 20 years, and is a focused program that recruits students from rural Wisconsin and trains them in programs that make it more likely that they will practice in rural Wisconsin.

Even with these additional 25 students, Wisconsin will still need an additional 100 physicians per year. Other potential sources for new physicians, such as recruitment of out-of-state physicians, will not fill the need in any significant way; increasing the number graduates from in-state medical schools coupled with increased residency slots is the only substantive way to reach the total.

The preferred alternative is for UWSMPH and MCW to increase their class sizes. But increasing the class size is only one dimension of the change that needs to take place. *The focus must be on primary care, general surgery, and psychiatry in terms of specialties with an opportunity for community based-learning experiences.* (The need for primary care physicians is demonstrated by the demand model, which shows that 80 percent of the shortage relates to primary care physicians. The need for general surgeons, particularly in rural areas, has been demonstrated in a number of studies[40]. A recent study by the Wisconsin Hospital Association found a serious shortage of psychiatrists currently exists in rural Wisconsin[41].) At the same time, an appropriate proportion of these graduates need to be prepared for the particular circumstances of rural and inner city communities. These three additional actions will drive the supply toward where it is needed: into primary care and community health improvement.

[39] 2008 AMA Masterfile, WHA Analysis.
[40] "General surgery at rural hospitals: a national survey of rural hospital administrators," Surgery, 2008; "A Longitudinal Analysis of the General Surgery Workforce in the United States, 1981-2005," abstract, Archives of Surgery, April 2008.
[41] Report of the WHA Behavioral Health Task Force, 2010.

An alternative to this approach would be to initiate an effort to maximize the percentage of in-state applicants accepted at UWSMPH. About 73 percent of the students admitted in 2010 were from Wisconsin. Analysis of AMA data on practicing physicians shows that medical students born in Wisconsin and attending a Wisconsin medical school, have a 54 percent chance of practicing in Wisconsin. This compares to 37 percent for all Wisconsin medical school students regardless of their place of birth[42]. An initiative to maximize the percentage of in-state applicants would result in adding more physicians practicing in Wisconsin than adding 100 students alone.

The annual cost per student is estimated to be between $80,000 and $120,000. If it were decided to increase class size by 100 students per year, the total cost would be between $32 and $48 million per year. This cost would be offset by tuition and other revenue. In addition, there would be start up and capital costs, not quantified at this time.

Option B: Open a satellite campus of an existing medical school focused on primary care, and mandate that 80 percent of the students be from Wisconsin.

Medical schools across the country have established satellite campuses as an alternative to expansions of their main campus sites. In many cases, the satellites leverage existing medical education infrastructures (primarily residency sites). The site would be community-based and focused on primary care. As a means to increase the likelihood of graduates staying and practicing in Wisconsin, there should be a mandate that 80 percent of the students at the site be from Wisconsin.

Option C: Establish a new, university-operated medical school based on the distributive model.

The new medical school would admit approximately 100 new students per year. The first two years of the four-year curriculum would take place on a university or college campus, where the students would receive didactic instruction in the science of medicine. Students would also begin their clinical training with patients, with physicians from nearby communities serving as preceptors. During the third and fourth years of the curriculum, students would begin rotations in communities across the state for clinical training. This is described as the "distributive" model of medical education, where students are trained in clinical sites away from the main medical school campus after their didactic education. The distributive model provides for clinical training in settings that are likely to be reflective of community-based medical practice.

The advantages of the distributive model include lower costs, both in terms of start up and operating expenses, and the fact that exposure to patients takes place in the community setting. Costs are lower because there is less of a need for additional teaching facilities and faculty. Clinical sites would be leveraged from existing hospitals and clinics. Finally, since this model is community-based as opposed to research-oriented, there is no need for these additional resources.

The distributive model is not new; in fact, this model has become a common approach, especially for newly-accredited medical schools. Of the 25 medical schools that have recently received some level of accreditation, from applicant status through full accreditation, 19 are using the distributive model for medical education[43]. Established medical schools, including the University of Minnesota – Duluth and Michigan State University, use this model.

Wisconsin has 20 private colleges and universities. All have either pre-medicine or other life science academic majors, and thus would have some infrastructure to build upon for a medical school. In addition, all have hospitals and/or clinics nearby that could serve as clinical sites. While none of these organizations have been approached on the idea of starting a new medical school, they should be considered as potential partners as this option is evaluated.

The start-up and ongoing costs of a community-based medical school are estimated at approximately $60 million for capital investment and $80,000 for annual costs per student. The following table provides data from a recent study[44].

[42] 2009 AMA Masterfile, WHA analysis
[43] Liaison Committee for Medical Education (LCME)
[44] MGT America, Inc. in a study prepared for the Medical Education Study Committee, Idaho State Board of Education.

Community-Based Medical Schools		
	Operating Support per Student	Capital Investment
New or Planned Medical Schools		
Florida State University	$80,000	$60,000,000
Northeast Pennsylvania	$64,222	$70,000,000
University of Central Florida	$77,789	$58,000,000
Florida International University	$67,145	$64,000,000
University of California, Merced	$173,689	$56,000,000
Established Medical Schools		
Eastern Virginia Medical School	$64,451	N/A
Northeastern Ohio Universities College of Medicine	$60,031	N/A
University of Nevada Reno	$142,790	N/A
University of North Dakota	$84,914	N/A
University of South Dakota	$102,727	N/A
Summary		
Average	$91,776	$61,800,000
Median	$78,895	$60,000,000

The capital investment requirements would vary considerably depending on currently existing teaching infrastructure.

The timeframe would depend on several factors: whether the Legislature would be involved; how quickly an existing university or college would be identified as a "sponsoring" organization; the time required to plan and organize the resources; and the time for accreditation. Once planning and approvals are obtained between three to five years would be required before students could be admitted and provisional accreditation obtained. Final accreditation requires an additional four years.

Option D: Establish a new medical school with a consortium of existing colleges, based on the distributive model.

This option is similar to Option C, except that several schools would share in the education of the additional students, each taking a portion for their first two-year curriculum. The third- and fourth-year curricula would involve the same "distributive" approach as Option C, with the students experiencing clinical rotations at clinical sites across Wisconsin. Each university would be responsible for monitoring their students in this phase, including providing faculty for those sites.

The only comparable model for this option is the Northeastern Ohio Universities Colleges of Medicine and Pharmacy. NEOUCOM was established in 1973 and graduated its first class in 1981. The NEOUCOM educational consortium includes the University of Akron, Kent State University, and Youngstown State University, eight community teaching hospitals, ten associated hospitals, and two health departments[45].

NEOUCOM is a separately-accredited medical school as well as a separately-accredited university, with the three universities acting as a consortium in its sponsorship. Option D could involve seeking accreditation for only the medical school program without having to accredit a new university[46].

Start-up costs would likely be lower than those of Option C, given that the class sizes for each site would be lower. Operating costs per student at NEOUCOM were $60,031 for 2007, a figure at the lower end of the spectrum outlined under Option C, but within the range. The timeframe would be similar to that of Option C.

[45] NEOUCOM website

[46] LCME: "..the LCME accredits programs and not schools."

Option E: Establish a new independent medical school.

A new medical school not associated with a current medical school or college would be established. It could be either for-profit or non-profit. The school would maximize the percentage of admissions that are Wisconsin residents. In addition, the school should be accountable for new residency programs in Wisconsin.

Issue Area #3: The Need to Focus on Tuition and Tuition-Related Debt as Incentives to Attract and Retain Physicians

Both the annual tuition cost and the resulting debt are important determinants of where future medical students decide to attend medical school and have their post-graduate residency experiences. Wisconsin needs to focus on incentives that could influence those decisions.

Option A: Restore tuition assistance at MCW.

For more than 30 years until 2003, the State of Wisconsin provided tuition assistance to Wisconsin residents who enrolled at the Medical College of Wisconsin. The amount, then at $10,000 per year, brought the annual tuition for these students roughly in line with the tuition at the University of Wisconsin School of Medicine and Public Health. The program was successful in encouraging Wisconsin residents to enroll at MCW, and on average, 50 percent of MCW students were residents.

In 2003, the Legislature cut the assistance in half and inflated the amount by less than 1 percent per year, so that by 2010 the MCW net tuition was $11,000 greater than the UW tuition ($35,661 after assistance compared to $24,080). This has led to a decrease in the number of Wisconsin residents attending MCW, with 33 percent as the average for the past three years.

The cost for restoring historical tuition assistance is estimated at $4 million. If this would result in the percentage of MCW students once again reaching 50 percent, then an additional 34 Wisconsin residents would be enrolled per year. Assuming the historical retention rate, this change alone would lead to an estimated 11 additional physicians staying and practicing per year.

Most of the projected shortfall of physicians is in primary care. Therefore, assistance should be directed toward those students likely to practice in primary care. Given that it would be difficult or impossible to mandate a physician's choice of specialty beforehand, the success of this program in filling the need for primary physicians should be evaluated on a periodic basis and funding be adjusted accordingly.

Option B: Provide loan forgiveness to graduates who stay.

The average medical school graduate holds a tuition debt of between $160,000 and $185,000[47]. Given that the level of debt is not significantly affected by the specialty pursued by the medical school graduate, there is an incentive for the graduate to enter higher paying specialties. In addition, the practice location chosen by physicians is influenced by whether tuition reimbursement is available. Loan forgiveness programs need to be fashioned to address these considerations.

A number of scholarship and loan forgiveness programs, both public and private, currently exist in Wisconsin. The state Legislature should enhance the program, providing funds to those graduates who stay and practice for three to five years. Funding should be directed toward graduates who specialize in primary care, general surgery, or psychiatry and locate in rural or inner city areas.

[47] AAMC 2009.

Issue Area #4: The Need for a Coordinated Effort to Address Anticipated Changes in Care Delivery, Including the Team Approach and the Focus on Care Management. This Includes the Need for Interprofessional Training and having Appropriate Resources Available to Carry out Team-Based Care Delivery in the Future.

Health systems in Wisconsin and nationwide have begun to move toward team-based care delivery. Whether referred to as the medical home or other models, the team-based approach appears to hold promise as a way to more efficiently deliver care. But we need to better understand what these delivery systems are likely to look like and understand their impact on the health care workforce. In addition, there needs to be a resource to disseminate information on best practices for other health providers to use as they evaluate this model.

Option A: Further study the future medical care delivery system.

There is a need to better understand how medical care is likely to be delivered in the future. The results of this study could be used as reference for the development of curriculum and in identifying the demand for non-physician providers.

Option B: Increase the number of non-physician providers being trained in colleges and universities in Wisconsin.

Based on projected need as determined in Option A, increase the number of non-physician providers trained in Wisconsin colleges and universities.

Option C: Incorporate team-based care delivery models into the medical education curriculum and provide clinical situations where physicians and other health professionals can practice in team settings.

Medical education curricula would need to change to incorporate team-based care delivery. Several models are already in place, including, for example, the interprofessional education (IPE) model. Jefferson University Medical School and Quinnipiac School of Medicine are two examples of medical schools that use this model.

Option D: Establish an infrastructure and a vehicle for the dissemination of best practices regarding team-based medical delivery.

Health systems across Wisconsin and nationwide have begun to move toward team-based care delivery. Whether referred to as the medical home or other models, the team-based approach appears to hold promise as a way to more efficiently deliver care. There needs to be a resource to disseminate information on best practices for other health providers to use as they evaluate this model.

Issue Area #5: The Need to Provide an Infrastructure and Ongoing Financial and Clinical Support for Enhancing the Long-Term Viability of Wisconsin's Medical Education and Training System.

In order to increase the likelihood of reaching the goal of an adequate physician workforce, Wisconsin should have an infrastructure and ongoing financial and clinical support for enhancing the long-term viability of its medical education system. One function would include evaluating current programs, engaging in strategic planning, and providing stakeholders with recommendations regarding the system. The same, or related, entity could serve as the manager of collaborative stakeholder efforts regarding the medical education system, such as residency programs.

Currently, each medical school, one public and one private, pursue these efforts largely on its own. There is not, however, comprehensive oversight of the entire system, nor is there any substantial collaborative effort among the various stakeholders. The Wisconsin Council on Medical Education and Workforce (WCMEW), a voluntary collaborative comprised of the two medical schools, the Wisconsin Hospital Association, the Wisconsin Medical Society, the

Wisconsin Academy of Family Physicians, and the Wisconsin Association of Physician Assistants, has served as a catalyst, a convener of constituencies, and a platform for developing public policy regarding physician workforce issues. Over the past eight years, the Council has played an important role in raising public awareness about—and finding solutions to—Wisconsin's physician workforce issues. But WMCEW's role must be strengthened in order for it to meet its objectives.

In addition, there is a need for adequate funding of education and training programs. With the freeze on the number of residency positions that the Medicare (and indirectly) the Medicaid programs will fund, the burden of financing any new or expanded positions falls almost entirely on hospitals, which have their own financial constraints. If there is agreement that Wisconsin needs more residency positions, then it is incumbent upon the state to ensure adequate funding is available. If it is determined that a new medical school is necessary, or existing undergraduate programs should be expanded, WCMEW would be in the position of making the appropriate recommendations to its sponsors. Given the debt load on medical students, funding should be made available for scholarships or loan forgiveness programs for new physicians staying in or relocating to Wisconsin.

Option A: Update WCMEW's mission and strengthen its role within its sponsors to make it a more effective voice on medical education and training in Wisconsin.

This enhanced role would provide an infrastructure and facilitate ongoing financial and clinical support to enhance the long-term viability of Wisconsin's medical education and training system.

WCMEW's authority and responsibility should:

1. Identify the health care workforce needs of Wisconsin communities and meet those needs through the support and development of medical education programs.
2. Monitor and forecast the supply and distribution of physicians in Wisconsin.
3. Ensure an adequate supply, specialty mix, and geographic distribution of physicians and other health care workers to meet the health care needs of Wisconsin.
4. Coordinate health care workforce planning with state funding for medical education and training.
5. Develop and support education programs required to meet health care workforce needs.

With a strengthened WCMEW, Wisconsin would have an avenue to set statewide policy on meeting its health care workforce goals.

Option B: Create consortium(s) to manage collaborative medical education and training initiatives.

Each of the various stakeholders in Wisconsin medical education and training—medical schools, health care organizations, providers, students and teachers—has skills and resources to contribute to medical education and training. But none has all of what is necessary. In addition to financial resources, medical education requires teachers, classrooms, and sufficient clinical experiences to meet basic training and accreditation requirements. Bringing together all of the stakeholders and making use of their assets will enhance the likelihood of meeting their collective goals.

One way to formalize this relationship would be the creation of one or more consortiums, in the form of 501c3 corporations that would manage the operations of medical education and training collaboratives. The consortiums could be regional or statewide, and would reflect the specific needs and circumstances of the sponsoring organizations. There are many such consortiums in existence across the country. Some have a focus only on medical school education, others on residency training, and others on managing both medical school and residency programs. Some examples follow:

1. Valley Consortium for Medical Education, Modesto, California: http://www.valleymeded.org/index.shtm.
2. Dayton Area Graduate Medical Education Consortium, Dayton, Ohio: http://dagmec.org/what_is_dagmec_history.htm.
3. Grand Rapids Medical Education Partners, Grand Rapids, Michigan: http://www.grmep.org/about/who-are-we.html.
4. Des Moines Area Medical Education Consortium, Inc., Des Moines, Iowa: http://www.dmconsortium.org.

Option C: Enact into statute an entity that will advise the Governor and Legislature on medical education and training in Wisconsin.

The role of the entity could include advising the Governor and Legislature on Wissonsin's health care workforce needs, assisting with planning and budgeting to meet those needs, and monitoring programs to ensure compliance with the goals set by the new entity and that the programs are accomplishing their purposes.

A new legislated entity would be one way to ensure that statewide goals regarding medical education are carried out. These entities exist in other states, and have provided the planning and oversight functions outlined above. Three such states, and their relevant entities, are the Georgia Board on Physician Workforce, the Texas Higher Education Coordinating Board and three bodies in Florida that work in concert. All were created by state legislative action and have similar missions: to assess medical education and workforce and make recommendations to their governors and legislatures on appropriate actions. They also all have authority to disseminate funds appropriated by the Legislature for medical education and training. More information about these organizations is provided in the appendix.

Appendix

Statewide Efforts to Coordinate Medical Education and Training

There are a number of states that have created entities that have both advisory roles and authority to carry out certain functions in helping coordinate medical education and training. The WHA workgroup chose to highlight three of those entities: the Georgia Board for Physician Workforce, the Texas Higher Education Coordinating Board and the Graduate Medical Education Committee in Florida.

The following is an excerpt from the Georgia Board for Physician Workforce website:

"The Georgia Board for Physician Workforce (GBPW) is a state agency responsible for advising the Governor and the General Assembly on physician workforce and medical education policy and issues. The 15-member Board works to identify the physician workforce needs of Georgia communities and to meet those needs through the support and development of medical education programs. The Board's responsibilities include monitoring and forecasting the supply and distribution of physicians in Georgia; assuring an adequate supply, specialty mix, and geographic distribution of physicians to meet the health care needs of Georgia; coordinating physician workforce planning with state funding for medical education; and the development and support of medical education programs required to meet physician workforce needs."

GBPW has been in existence for more than a decade and has the following roles and responsibilities, as outlined in Georgia statutes:

1. To locate and determine specific underserved areas of the state in which unmet priority needs exist for physicians by monitoring and evaluating the supply and distribution of physicians by specialty and geographical location;
2. To approve and allocate state appropriations for family practice training programs, including but not limited to fellowships in geriatrics and other areas of need as may be identified by the board;
3. To approve and allocate state appropriations for designated pediatric training programs;
4. To approve and allocate any other state funds appropriated to the Georgia Board for Physician Workforce to carry out its purposes;
5. To coordinate and conduct with other state, federal, and private entities, as appropriate, activities to increase the number of graduating physicians who remain in Georgia to practice with an emphasis on medically underserved areas of the state; and
6. To apply for grants and to solicit and accept donations, gifts, and contributions from any source for the purposes of studying or engaging one or more contractors to study issues relevant to medical education or implementing initiatives designed to enhance the medical education infrastructure of this state and to meet the physician workforce needs of Georgia communities.

GBPW has published periodic reports on the Georgia physician workforce for the past 10 years. In addition, it has the authority to approve residency programs and undergraduate programs and approves the dissemination of state appropriated funding for those programs.

The Texas Higher Education Coordinating Board has broad authority to study all areas of higher education in Texas, including medical education and training. It also studies the physician workforce and assesses whether institutions are fulfilling workforce needs. Following is a synopsis of their 2008 report:

Key Questions

- Is there adequate opportunity for students to study medicine in Texas?
- Are there enough entry-level graduate medical education (GME) positions?
- Does Texas have an adequate supply of physicians?

Conclusions

- Unless Texas expands medical school enrollments at existing schools and locations or opens additional locations or branch campuses, graduates from Texas colleges and universities will have less opportunity to enter medical school in the state.
- To keep pace with the number of medical school first-year enrollment increases currently underway, graduate medical education programs should expand to accommodate the projected number of graduates and attract new physicians to Texas.

Recommendations

- The Legislature should fully support the existing health-related institutions and their expansion efforts before committing additional dollars to new projects.
- Texas medical schools should continue to increase first-year entering enrollments through 2015, when the Coordinating Board should assess whether additional enrollment increases are necessary.
- The Legislature should continue to expand efforts, such as the Joint Admission Medical Program, to attract and mentor African American and Hispanic students to careers in medicine. The Coordinating Board requested an additional $10 million in exceptional item funding to support JAMP in Fiscal Years 2010 and 2011.
- Optimally, the state should encourage growth of more first-year residency positions with a goal of 10 percent more first-year, entry-level residency positions than graduating medical students.
- If the Legislature is able to fully support the existing commitments in the state and decides to establish an additional medical school in Texas, the South Texas region remains a feasible location.

In Florida, three entities collaborate in coordinating undergraduate and graduate medical education: the Community Hospital Education Council, the Department of Health, and the Graduate Medical Education Committee.

The Community Hospital Education Council (CHEC) provides funding for primary care resident programs and oversees the program. The Department of Health establishes standards and policies for the use and expenditure of graduate medical education funds appropriated for a program of community hospital education.

The Graduate Medical Education Committee (GMEC) produces an annual report that outlines the role of residents and medical faculty in the provision of health care, the relationship of GME to the state's physician workforce, the costs of training medical residents, the availability and adequacy of all sources of revenue to support GME, and the use of state and federal appropriated funds for GME by hospitals receiving such funds. In 2009, the Florida Graduate Medical Education Committee delivered its annual report. After providing general background on GME, and the economic impact and the role of residents in providing medical care, the Committee made the following recommendations:

- Explore stable and recurring funding for Florida's residency programs.
- Conduct a cost survey of residency programs to understand the economic impact and contributions these programs made at the local and state level
- Create a strategic plan to address the growth and funding of graduate medical education. This plan will include:
    - Funding issues based the real costs of graduate medical education
    - Specific positions and recommendations based on physician workforce data findings
    - The accountability and contribution of GME programs to the care of citizens in Florida, the biomedical industry, research, translations studies and other areas of impact

The three states have taken somewhat different approaches in creating the coordinating entities, but there are commonalities in roles and responsibilities, and some combination of their designs could be useful as Wisconsin looks to design its own approach.

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