A Profile of Michigan's Nursing Workforce 2009

A report by the Michigan Center for Nursing
www.michigancenterfornursing.org
operated by the
Michigan Health Council
www.mhc.org

Dear Colleague,

The Michigan Center for Nursing is excited to share the Profile of Michigan's Nursing Workforce.

This profile provides current data on the nurse population in Michigan and information regarding issues that may affect the supply and demand for nurses. This information is being provided to help policymakers, employers and educators identify and implement strategies to address nurse workforce needs in Michigan.

The Michigan Nursing Profile Report has been developed for the Michigan Center for Nursing at the Michigan Health Council, a nonprofit dedicated to working on Michigan's healthcare workforce issues. The profile uses data collected and analyzed from the yearly Nursing Surveys done as a part of nursing license renewal process in 2004 through 2008. The Profile provides a picture of Michigan's nursing workforce.

Public Sector Consultants Inc, (PSC), a Lansing public policy research firm, conducted the surveys and has prepared this report.

The Michigan Center for Nursing, established in 2003 with funding support from the Michigan Department of Community Health is focused on the critical issues of recruitment, education and retention of Michigan's nursing workforce. The Center provides data on the state's nursing demographics, serves as a clearinghouse for nursing information and resources, focuses on best practices and is a neutral convening body for nursing's many collaborative initiatives. The Center works in concert with the Office of the Chief Nurse Executive to ensure that the citizens of Michigan have quality healthcare.

It is our hope that the Michigan Nursing Profile provides important information that will be used to continue the collaborative efforts that have been ongoing since development of Michigan's Agenda for Nursing, a strategic work plan to alleviate the nursing shortage. Michigan has been aggressive in providing resources and establishing initiatives to address the nursing shortage. Those efforts have been successful, we have added 10,000 new nurses to our nursing workforce since 2004. However the work is not done and we must continue to keep our eye on the goal, quality healthcare for the citizens of Michigan. For more information about these initiatives, visit our website www.michigancenterfornursing.org or contact us at (517) 347-8091. For information about other health professions and healthcare workforce issues and initiatives at the Michigan Health Council visit www.mhc.org or call (517) 347-3332.

We welcome comments and suggestions.

Thank you.

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Profile of Michigan Nurses

This profile provides current data on the nurse population in Michigan and information regarding issues that may affect the supply and demand for nurses. This information is being provided to help policymakers identify and implement strategies to address nurse workforce needs in Michigan.

As of January 1, 2008, a total of 152,926 nurses were licensed by the State of Michigan. Of these, 125,402 are registered nurses (RNs) and 27,524 are licensed practical nurses (LPNs).

- An estimated 93,657 (75 percent) licensed registered nurses are working full- or part-time in nursing or a related area *in Michigan*; 78,016 (83 percent) of these RNs provide direct patient care services in their main nursing position.
- An estimated 20,700 (75 percent) licensed practical nurses are working full- or part-time in nursing or a related area *in Michigan*; 18,837 (91 percent) of these LPNs provide direct patient care services.

Exhibit 1 shows demographic characteristics of RNs and LPNs in Michigan.

EXHIBIT 1

Demographic Characteristics of Active Registered Nurses (RNs) and Licensed Practical Nurses (LPNs) in Michigan, 2008

	RN	LPN
Total number of nurses licensed by Michigan	125,402	27,524
Total active nurses employed in nursing or related area in Michigan	93,657	20,700
Ratio estimate of active nurses to population (per 100,000)[1]	930	206
Gender		
Male	6%	5%
Female	94%	96%
Age		
<25 years[2]	2%	2%
25-34	13%	11%
35–44	21%	17%
45–54	34%	31%
55–64	26%	32%
65+	5%	8%

[1] Nurse-to-population ratios are calculated using the employment location reported by nurses and the U.S. Census Bureau annual population estimates for Michigan for 2007.

[2] These estimates are for nurses who renewed their license; newly licensed nurses are not included. Thus, the number of nurses under the age of 25 is underestimated.

	RN	LPN
Race/Ethnicity		
African American	6%	13%
American Indian/Alaskan Native	2%	2%
Asian	4%	2%
Hispanic/Latino/Spanish	2%	2%
Middle Eastern or Pacific Islander	<1%	<1%
White	88%	83%

SOURCE: Michigan Center for Nursing, *Survey of Nurses 2008*.
NOTE: Percentages may not equal 100 percent due to rounding.

WORK SETTING AND PRACTICE AREA

- About 73 percent of active RNs are employed in either a hospital inpatient or outpatient setting.
- The percentage of LPNs employed by hospitals has continued to decline since 1992–93, from 44 percent to about 23 percent in 2008.
- About 45 percent of active LPNs are employed in nursing homes or long-term care facilities.
- "Med-surg" is the practice area RNs reported most often (18 percent) as their main practice area, while almost half (48 percent) of all active LPNs identified their main practice area as "geriatrics/elderly care."

NURSING TRAINING AND EDUCATION

Certificates, Degrees, and Diplomas Held by Current Active Nurses

Exhibit 2 reflects the education background of RNs responding to the Michigan Center for Nursing *Survey of Nurses 2008*.

EXHIBIT 2
Education Background of Active Registered Nurses, 2008

Degree	Percentage
LPN diploma or certificate of nursing	6%
RN diploma in nursing	22
Associate's degree in nursing	46
Bachelor's degree in nursing	39
Master's degree in nursing	7
Doctorate in nursing	<1

SOURCE: Michigan Center for Nursing, *Survey of Nurses 2008*.
NOTE: Nurses may hold more than one nursing degree, so percentages total more than 100. Since the *Survey of Nurses 2005*, the distribution of education background of active RNs has not changed.

Number of Nursing Programs and Students

In the fall of 2006, the Michigan Center for Nursing conducted a survey of nursing education programs in Michigan to collect information on the types of programs offered, their enrollment capacity, the number of graduates, student and faculty demographics, and current issues affecting program capacity. The following nursing programs were offered during the 2005–2006 academic year[3]:

- 25 practical nurse diploma or certificate (PN) programs
- 32 associate's degree programs in nursing (ADN)
- 19 bachelor's degree programs in nursing (BSN)
- 13 master of science degree programs in nursing (MSN)
- 3 doctoral programs in nursing (PhD)
- 2 doctor of nursing practice programs (DNP)

The numbers of admission slots[4] approved by the Board of Nursing (BON) for the 2005–2006 school year were as follows:

- 926 slots in PN programs
- 1,037 slots in PN and ADN combined programs
- 2,366 slots in ADN programs
- 1,847 slots in BSN programs

Most programs reported that they had more qualified applicants than the number of approved admissions slots. Overall, for the 40 institutions that provided complete application and enrollment data, 4,298 qualified applicants were not enrolled in the 2005–2006 school year. The number of applicants is based on the number of *applications* received by each institution. Students apply to more than one institution and may become enrolled in one institution, but be counted as not enrolled at another institution. Therefore, these numbers are likely to exaggerate the size of the overall applicant pool for these 40 institutions and the number of applicants not enrolled.

ESTIMATED SHORTAGE OF NURSES IN MICHIGAN

In 2002, the U.S. Department of Health and Human Services, Health Resources and Services Administration (HRSA) projected that there would be a 1.7 percent yearly increase in the demand for registered nurses and a 29 percent shortage in the national supply of registered nurses by 2020.[5] A rough estimate of the future shortage of nurses in Michigan can be calculated by comparing the number of nurses who report that they plan

[3] These numbers reflect programs offered, not the number of institutions; a single institution may offer more than one type of program.

[4] The Michigan Board of Nursing (BON) approves the maximum number of pre-licensure students that may be enrolled (i.e., admission slots) in programs that offer a practical nursing (PN) diploma or certificate, an associate's degree in nursing (ADN), or a bachelor of science in nursing (BSN).

[5] U.S. Department of Health and Human Services (DHHS), Health Resources and Services Administration, Bureau of Health Professions (HRSA), *Projected Supply, Demand, and Shortages of Registered Nurses: 2000-2010* (Washington, D.C: HRSA, July 2002). Available: *http://bhpr.hrsa.gov/nursing/.*

to stop practicing nursing within the next five or ten years to the number of nursing school graduates anticipated to enter the workforce in the same time period.

This estimate makes the following assumptions:

- The number of students graduating every year will be the same as the number of graduates reported by Michigan nursing programs for the 2005–2006 school year (i.e., 3,123 new RNs and 1,134 LPNs per year[6]).
- The nurses who reported that they plan to stop practicing do not change their plans.
- All nurses graduating will pass required licensure exams and receive their license.
- The current demand for nurses does not change.
- The number of nurses leaving the state and entering the state are the same.[7]

Of course, the actual gap between the supply and demand for nurses could be affected by changes in any or all of these factors. For example, while the number of RN graduates increased by less than 1 percent between the 1997–1998 and 2004–2005 academic years, there has been a concerted effort in recent years to expand the capacity of nursing education programs.

Estimated Number of Nurses by 2013

In 2008, 17.7 percent of active RNs said that they plan to stop practicing in one to five years. This means that about 16,577 RNs plan to leave the workforce by 2013. If nursing programs continue to graduate 3,123 new RNs each year, a total of 15,615 new RNs could be entering the workforce by the end of the same time period and Michigan could be short 962 RNs by 2013. In order to have enough RNs to fill the positions of those planning to leave nursing within the next five years, nursing programs need to graduate at least an additional 192 RNs each year for the next five years.

In 2008, 20.8 percent of active LPNs (4,306) said that they plan to stop practicing in one to five years. If nursing programs continue to graduate 1,134 new LPNs each year for the next five years, a total of 5,670 new LPNs could be entering the workforce during the same time period. By 2013, Michigan could have 1,364 more LPNs than the number of vacancies made available by those planning to retire or quit nursing.

Estimated Number of Nurses by 2018

About 39 percent of active RNs surveyed in 2008 said that they plan to stop practicing within the next ten years. If the number of RN graduates remains constant, Michigan will be short about 5,296 RNs to replace the nurses who plan to leave nursing by 2018. Nursing programs would need to graduate at least an additional 529 RNs into the workforce each year for the next ten years just to break even.

About 41 percent of LPNs surveyed in 2008 plan to leave nursing within ten years. Based on the current number of graduates, taking into account previously noted assumptions, by

[6] Michigan Center for Nursing, *Survey of Nursing Education Programs: 2005-2006 School Year* (March 2006). [Online, accessed 6/26/09.] Available: *http://www.mhc.org/mhc_images/edprogramsurvey06.pdf.*

[7] There is not data available to tell us where new nursing graduates are going to practice. We do not know how many graduates are staying in Michigan or leaving Michigan.

2018, Michigan could have 2,853 more LPNs than the number of vacancies made available by those planning to retire or quit nursing.

FACTORS AFFECTING NURSE WORKFORCE SUPPLY

Aging Workforce

A large number of nurses are preparing to retire, but the workforce continues to get older in part because there are not enough younger nurses coming in to fill these vacancies. There are large numbers of individuals entering nursing education programs at later ages (e.g., early thirties instead of in their twenties) as more people choose to enter the nursing profession after working in other fields or raising children, particularly through accelerated baccalaureate and two-year associate's degree programs. Although this entry into nursing of relatively older individuals will contribute to an older workforce in the future, it will also help to offset some of the large losses when the baby boomer generation retires.[8]

Aging Population

The U.S. population is aging and the number of people in the generations following the baby boomer generation (baby bust or Generation X) is not large enough to replace workers who are at or nearing retirement. The Employment Policy Foundation estimates that there could be up to 35 million jobs unfilled by 2030 due to the number of baby boomers leaving employment.[9] The various opportunities for jobs will make it more difficult to recruit people to enter health professions.

Job Satisfaction

Michigan data support the importance of job satisfaction to workforce retention. For those nurses who left a nursing position, the factors leading to their decision that were mentioned most often, in descending order, were "general lack of job satisfaction"; "personal or family concerns"; "inadequate salary/wages"; and "physical demands of the job."[10]

Inadequate staffing, heavy workloads, increased overtime, adequacy of wages, and lack of support contribute to job dissatisfaction. In 2008, Press Ganey Associates Inc. published the results of a survey of employees at health care facilities showing that "employees report the lowest overall satisfaction with compensation, participation, staffing, recognition, and senior leadership. Registered nurses are the least satisfied employees, which is troubling considering the retention and recruitment concerns of this specialized group."[11]

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[8] Peter I. Buerhaus, Douglas O. Staiger, David I. Auerbach, *The Future of the Nursing Workforce in the United States: Data, Trends, and Implications* (Sudbury, MA: Jones and Bartlett Publishers, LLC, 2009).
[9] AARP.org, *Occupational Info: The Changing Workforce*. [Online, accessed 1/10/09.] Available: *http://www.aarp.org/money/careers/choosecareer/occupational-info/a2004-04-20-changingworkforce.html*
[10] Michigan Center for Nursing, *Survey of Nurses 2008.* Available: *http://www.michigancenterfornursing.org/mimages/nursesurvey08.pdf*
[11] Press Ganey Associates Inc., *Check-up Report: Employee and Nurse Perspectives on American Health Care Organizations* (Sudbury, MA: Press Ganey Associates Inc., 2008).

New graduates are another population within the nursing workforce that has high turnover rates due to the stresses of transitioning from school to work. Using nurse preceptors, or mentors, during this transition may help new graduate nurses stay in the field. In spring 2009, focus groups were held in east central Michigan with nurses who recently graduated and had been precepted by one or more nursing colleagues. The new graduates said that their preceptor(s) helped in their transition from book learning to applying what they had learned to real-life experiences. New graduate nurses said that the preceptors who helped them the most were those who worked with them one-on-one, helped them learn new skills with a variety of patient scenarios, and helped them learn how to communicate with physicians.[12]

Education Capacity

The capacity to educate more nurses is directly affected by the number of nursing programs, slots available for students, faculty to teach students, and availability of placement sites for clinical experience. In a survey of Michigan educational institutions, programs reported having difficulty filling admission slots if they currently lack faculty (33 out of 49 educational institutions responding to the survey have difficulty filling full-time faculty positions, and 30 have difficulty filling adjunct faculty positions in particular specialty areas), facilities (16 educational institutions lack enough classroom facilities and 16 lack laboratory facilities, equipment, and supplies for nursing students), or clinical placement sites (31 educational institutions lack enough sites for clinical placements for nursing students) to support the approved admission slots.[13]

The concerns of the nursing education programs in Michigan are consistent with other programs across the nation. National surveys of nursing education programs by the American Association of Colleges of Nursing and the National League for Nursing both reported that large numbers of qualified nursing applicants were turned away "due to shortages of faculty, clinical placement sites, and classroom space."[14]

FACTORS DRIVING DEMAND FOR NURSING WORKFORCE

Changes in the health and age of the population, population growth, cultural practices, economics, and the organization of the health care system are all factors that affect the need for services, preferences for various types of services, and ability to pay for services, which then affect the hiring decisions of health care organizations and the demand for nurses.

Changes in the Health and Age Composition of the Population

The demand for health care will grow as the general population ages and life expectancy increases. This will increase the demand for nurses along with other health professionals. Due to the increasing proportion of seniors in the population (by 2030, it is estimated that one in five will be older than 65 years), more people will be seeking chronic disease care and more people will need medical care. A recent study predicts that as "people grow older, their stock of good health will decline, and patterns of morbidity will change from

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[12] Conversation with Peter Pratt, focus group facilitator, June 18, 2009.
[13] Michigan Center for Nursing, *Survey of Nursing Education Programs: 2005-2006 School Year*.
[14] Buerhaus, Staiger, and Auerbach, *The Future of the Nursing Workforce*.

infectious diseases and acute illnesses to chronic diseases and degenerative illnesses. Currently, about 8 in 10 Americans are living with at least one chronic condition (Centers for Disease Control and Prevention, 2007)."[15] The elderly have longer hospital stays and more out-patient and emergency room visits. In addition, there will be more home health visits per capita and more elderly likely to be in long-term care.[16]

Sociocultural Factors

Researchers suggest that "as the population in the United States becomes more diverse, cultural differences will increasingly impact the amount of health care demanded, the composition of healthcare services, and the manner in which they are provided."[17] Some of these changes may create greater demand for health services. For example, "as disparities in the use of healthcare services are reduced, we can expect increases in demand among minority populations."[18] Conversely, some people may choose home remedies or non-traditional medicine practices for their symptoms and/or illnesses, therefore reducing the demand for nursing services. Education may also have an impact on the demand for health services. More highly educated people are more likely to seek preventive measures; they have more doctor office visits but fewer hospital stays when they become ill. Since preventive measures are often supported by nursing services, there could be a greater demand for nurses in physician offices and wellness settings and less demand for nursing services in hospitals.

Economic Factors

A person's income, the price of health care, and whether that person feels it is worth their time (in terms of travel, wait time, etc.) can affect the demand for health care. Obviously, people who have health insurance or the ability to pay for health care by other means are more likely to seek medical care than those with no insurance coverage. It is likely that universal health coverage would increase the demand for nurses' services. Universal coverage makes health care affordable for individuals who previously did not have insurance or the financial means to go to the doctor when necessary or to receive preventive care.

Organization of the Health Care System

Health care employer hiring

For health care organizations, the demand for nurses (or labor) "is the total hours of work that potential employers are willing to hire [and at what wage]."[19] When figuring the demand for health care workers, such as nurses, health care organizations need to consider how they determine the number of RNs, LPNs, aides, etc. to employ. Factors contributing to the hiring of nurses include "wages, the existing supply of nursing personnel, the output that can be obtained by employing additional nurses, the

[15] Buerhaus, Staiger, and Auerbach, *The Future of the Nursing Workforce.*
[16] Ibid.
[17] Ibid.
[18] Ibid.
[19] Ibid.

relationship between capital and labor, the objective function of health care organizations that employ nurses, and budget constraints."[20]

A study of the economics of nursing care concludes that: "Nursing is considered a cost rather than revenue, which makes nursing a target for cost reductions. Policies such as hospital reimbursement affect nurse supply, demand, workload, and retention, but they are generally made without consideration of workforce impact. If it can be shown that improving nursing care contributes not only to better patient outcomes but also to healthy financial performance, it will help make the case for strengthening nurse staffing [thereby increasing the economic value and demand of nurses] and making other work place improvements."[21]

Quality of care

There is some evidence that nurse staffing affects the quality of care in hospitals. In a study of staff registered nurses in 168 Pennsylvania hospitals, each additional patient added to the average workload of staff RNs increased the risk of death following common surgical procedures by 7 percent. Moreover, the risk of death was 30 percent higher in hospitals where nurses' mean workloads were eight patients or more each shift than in hospitals where nurses cared for four or fewer. Nurse staffing models and how those are applied in practice affect demand for nurses. If standards are set for nurse-to-patient ratios in order to assure quality of care, employers may be forced to hire more nurses to meet those requirements.[22]

New models of health service delivery

There are a number of models being tested to provide higher quality and efficacy in health service delivery. Each model may increase (or decrease) the demand for nurses or alter the traditional role nurses have been known to play in health care. One of the models of health service delivery being tested is the "medical home," described as a patient-centered approach to primary care. The medical home provides patients with a personal physician, physician-directed care (the patient's team of physicians is led by his or her personal physician), whole person orientation, coordinated and/or integrated care, improved quality and safety, and enhanced access to care, and provides appropriate reimbursements for the primary care services.[23] This model requires a coordinator of care who, in many cases, could be a nurse in the primary care doctor's office, therefore increasing the demand for nurses.

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[20] Buerhaus, Staiger, and Auerbach, *The Future of the Nursing Workforce..*

[21] Lynn Y. Unrush, PhD, RN, LHRM, Susan B. Hassmiller, PhD, RN, FAAN, Susan C. Reinhard, PhD, RN, FAAN, The Importance and Challenge of Paying for Quality Nursing Care, *Policy, Politics, and Nursing Practice* 9, no. 2 (May 2008): 68–72.

[22] Linda H. Aiken, Sean P. Clarke, Robyn B.Cheung, et al., Educational Levels of Hospital Nurses and Surgical Patient Mortality, *Journal of the American Medical Association* 290, no.12 (2003):1617–1623. [Online, accessed 1/10/2009.] Available: *http://jama.ama-assn.org/cgi/content/full/290/12/1617*

[23] American Academy of Family Physicians, American Academy of Pediatrics, American College of Physicians, and the American Osteopathic Association, *Joint Principles of the Patient-Centered Medical Home* (March 2007). [Online, accessed 1/10/2009.] Available *http://www.medicalhomeinfo.org/Joint Statement.pdf.*

Another model of health service delivery is the chronic care model, which promotes improvements in handling chronic illness separate from the traditional acute care found in primary care practices. This model "assumes that the locus of care remains with the personal physician, supported by an integrated (and perhaps expanded) practice team."[24] The model comprises self-management support, decision support, delivery system design, and clinical information systems. As with the medical home model, this could incorporate more use of nursing staff.

The guided care model is another model intended to improve care for patients with chronic illnesses. This model incorporates several of the same practices as the chronic care model along with other innovations. The guided care model uses a registered nurse who has had additional training to manage the care of chronically ill patients. The RN works in a primary care office and manages the care of 50 to 60 patients. The tasks involved for each patient include assessment; planning the care with the physician, patient, and caregivers; regularly monitoring the care being provided to each patient; coaching the patient; referring the patient to chronic disease self-management courses; educating and supporting caregivers; making sure that transitions between hospital and home (or other health care sites) are smooth; and making sure that the patient has access to a variety of community services as needed (e.g., transportation, support groups, food).[25] Adoption of this model by primary care offices could increase the demand for specialized nurses, such as Advanced Practice Nurses

Advanced Practice Nurses (APNs) "offer a critical resource to fill the gap between primary care and chronic care management. Evidence-based models of transitional care led by APNs have successfully interrupted cycles of avoidable hospitalizations among the chronically ill and promoted longer-term positive health outcomes."[26]

Health care reform

All of these issues related to the organization of the health care system could have an impact on the demand for nurses as the nation works to reform the current healthcare system. "Nursing has developed and implemented innovative models of care that promote the goals of policymakers for health reform: expanding access, improving quality and safety, and reducing costs."[27]

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[24] Edward H. Wagner, Group Health Cooperative of Puget Sound, "Chronic Disease Management: What Will it Take to Improve Care for Chronic Illness?" *Effective Clinical Practice* 1 (August/September 1998): 2–4.
[25] C. Boult, L. Karm, C. Groves, Improving Chronic Care: The "Guided Care" Model, *The Permanente Journal* 12, no. 1 (Winter 2008): 50–54.
[26] M. D. Naylor, Transitional Care: A Critical Dimension of the Home Healthcare Quality Agenda, *Journal of Healthcare Quality* 28, no. 1 (2006): 48–54.
[27] Robert Wood Johnson Foundation, *Charting Nursing's Future: Nursing's Prescription for a Reformed Health System* (Princeton, NJ: Robert Wood Johnson Foundation, March 2009).