State of Maine Nursing Workforce Strategic Plan
2012-2020

Building and Sustaining a Nursing Workforce in Maine

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Executive Summary

Major Findings
(Maine data from the 2008-2010 licensure survey are based on a response rate of 26.7% and therefore, should be interpreted with caution.)

➢ Inadequate Supply and Demand Data
  o Voluntary supply survey response rate with licensure for RNs and LPNs has fallen from 74% with the 2004-2006 survey to 27% with 2008-2010.
  o Inability to merge supply data gathered vis-a-vis licensure renewal with limited demand data
  o Unable to determine 10 year projected retirement/ attrition rates.
  o Unable to make workforce projections.

➢ Characteristics of Maine's Aging Nursing Workforce
  o Average age of the RN in Maine is 50.6 years as compared to 47 years nationally (2008-2010 data).
  o Average age of the employed RN in Maine is 49.4 years with 48% over the age of 51 years.
    ▪ 44% of staff nurses older than 51 years
  o Only 57% of the employed RNs over the age of 51 years plan to be working in Maine in 5 years.

➢ Maine's Educational Challenges
  o Faculty represents the oldest group at 64.5% older than 51 years with (2008-2010 data).
  o Highest attrition in faculty role.
  o No PhD programs of nursing in the state, limiting the opportunities for faculty to achieve higher academic education.

- One new Doctorate of Nursing Practice program launched at the University of Southern Maine in January of 2012 with 6 students.
- Majority of nurses in the state are prepared at the associate degree educational level.
- Seamless transition from ADN to BSN is not facilitated
- Students apply to multiple programs.

➢ Alignment of Stakeholder Engagement
- Need involvement of primary players across the state to accomplish the body of work required by the strategic plan.
- Fragmented statewide initiatives by multiple healthcare systems.
- Information on faculty and students collected in a variety of ways by multiple stakeholders.
- Majority of the attendees at the forums will not be actively employed in healthcare practice or education by 2020.
- The attendance at the data gathering forum in southern Maine, where almost 50% of the licensed nurses in Maine reside, was exactly the same as the attendance in Presque Isle where 5% of the nurses in Maine reside.
- Multiple surveys from multiple organizations throughout the state asking for the same information from the same sample of responders.

Goals and Strategic Initiatives
for State of Maine Nursing Workforce

2012-2020

Six Goals based on the Institute of Medicine's Future of Nursing (2010) recommendations will serve as the foundation for the Strategic Plan.

Goal 1. Develop, implement, and evaluate a structure for effective workforce planning and policy making through improved systematic collection and analysis of data.

Goal 2. Develop, implement, and evaluate statewide models for the retention of new graduates and older workers.

Goal 3. Develop a statewide undergraduate curriculum that utilizes core competencies including patient centered care, professionalism, communication, systems-based practice, teamwork and collaboration, evidence based practice, quality improvement, safety, informatics, and leadership, with a focus on geriatric.

Goal 4. Develop a plan for seamless undergraduate nursing education curricula that includes statewide application and regional clinical placement.

Goal 5. Increase the proportion of nurses with a baccalaureate degree to 80% by 2020.

Goal 6. Champion that at least 10 percent of all baccalaureate graduates matriculate into a master's or doctoral program within 5 years of graduation.

Abbreviations Used in the Strategic Plan

IOM   Institute of Medicine

OMNE   Organization of Maine Nurse Executives

ANA-Maine   American Nurses Association-Maine

MSBON   Maine State Board of Nursing

DOL   Department of Labor

DHHS   Department of Health and Human Services

AACN   American Association of Colleges of Nursing

Strategic Initiatives for Nursing in Maine*

Goal 1. Develop, implement, and evaluate a structure for effective workforce planning and policy making through improved systematic collection and analysis of data.

Lead: Maine Partners in Nursing Education and Practice, OMNE, ANA-Maine, MSBON, DOL, DHHS, Legislators

Strategy 1.1 Leverage partnerships with the disciplines and members of groups that need to be at the table to develop a structure for effective workforce planning.

   a. Assure representation from each county/region within the state.
   b. Seek legislative or grant funding to explore state workforce center development, responsibilities, funding, and sustainability.
   c. Report update on plan annually at the Nursing Summit.

Strategy 1.2 Develop, implement, and evaluate a statewide survey of all levels of providers within the nursing workforce.

   a. Utilize the National Workforce Center survey items in the Nurse Supply Survey, the Nurse Demand Survey, and the Nurse Education Survey.
   b. Increase the response rate of supply survey with re-licensure to above 75%.
   c. Explore avenues for data collection through MSBON, DOL, Maine Partners in Practice.
   d. Explore options for data analysis including graduate students, work study students, Muskie School, DOL *Research Resource Center.*
   e. Incorporate population trends and nursing workforce distribution into workforce demand database.
   f. Report first comprehensive Supply and Demand and Educational Data through Maine State Board of Nursing communication channels on the website and the Nursing Summit by end of 2014.

*Addendum A
Statewide Forum Recommendations not Included in the Strategic Plan

Goal 2. Develop, implement, and evaluate statewide models for the retention of new graduates and older workers.

Lead: Maine Partners in Nursing Education and Practice, OMNE, ANA-Maine, Human Resource Representatives with representatives from each group, including preceptors and new graduates for addressing this goal.

Strategy 2.1 Retain new graduates in all levels of the nursing workforce.

a. Explore effective mentor/preceptor models .
b. Explore funding for testing new models for retention such as designated education units and cross training with shorter unit-based placements (allow more flexibility in changing units), shift times other than 7-7.
c. Develop and evaluate a statewide preceptor program.
d. Develop and evaluate a statewide nurse residency program for acute care and for long-term care.
e. Develop statewide programs to address horizontal violence and bullying in the workplace.
f. Develop a strategy to record ongoing retention challenges.
g. Collect statewide retention rates for new graduates and set retention goal by 1/1/2014.

Strategy 2.2   Retain older workers in the nursing workforce.

a. Collect statewide retirement and projected retirement rates and set retention goals by 1/1/2014.
b. Explore and evaluate flexible staffing models that include job sharing, flexible scheduling including "snowbird" schedules, shorter work hours, assignments based on physical care demands.
c. Maximize the talents and experiences of older workers through specialized clinical and instructional teaching options.
d. Develop Career Opportunity Programs for workers 55 years and older such as Benner Model at the Maine Veterans Home.
e. Encourage ergonomic programs across facilities.
f. Explore, develop and evaluate statewide clinical ladder programs based on multiple clinical settings.

Goal 3. Develop a statewide undergraduate curriculum that utilizes core competencies including patient centered care, professionalism, communication, systems-based practice, teamwork and collaboration, evidence based practice, quality improvement, safety, informatics, and leadership, with a focus on geriatric.

Lead: Maine Partners in Nursing Education and Practice

Strategy 3.1   Incorporate Maine New Nurse Competencies into curricula in every undergraduate nursing program in Maine.

   a. Convene nursing faculty and chairs of undergraduate curriculum committees from all 13 nursing schools to explore best practices.
   b. Develop a mechanism to confirm commitment to incorporate the competencies and track progress.
   c. Sponsor education for faculty with National Experts on outcome based curricula.

Strategy 3.2   Pilot curricular strategies that incorporate the competencies.

   a. Develop a research focus on competency based education in the state.
   b. Seek funding to support innovative strategies for incorporating competencies in education and in transition to practice.

Strategy 3.3   Evaluate the effectiveness of strategies to operationalize competency based education.

   a. Develop outcome measures for each of the competencies.
   b. Complete a second gap analysis to compare new Maine graduates after 2 years of inclusion of these competencies in their programs.
   c. Include competency integration data collection with future school of nursing education surveys.

Strategy 3.4   Incorporate Competencies into preceptor programs and residency programs for new graduates.

   a. Include competency evaluation at the start and end of orientation and residency programs as they develop.

Goal 4. Develop a seamless undergraduate nursing education curriculum that includes a statewide application process and regional clinical placement.

Lead: Maine Partners in Nursing Education and Practice, OMNE

Strategy 4.1 Develop a seamless undergraduate nursing education curricula.

a. Create a sub-committee to address a seamless undergraduate program.
b. Explore novel and successful seamless undergraduate programs, e. g. Oregon Consortium for Nursing Education.
c. Seek funding to support the development of a statewide initiative.
d. Align curriculum with competences identified in Goal 3.

Strategy 4.2 Develop a plan for statewide, seamless application into nursing programs.

a. Create a statewide application with standardized pre-requisites for nursing program admission.
   1) Create educational program for high school counselors regarding pre-requisites for nursing.
   2) Pilot CNA certification as pre-requisite for certain programs.
   3) Explore creating a portal for "a day in the life of a nurse."
b. Develop a statewide education database that tracks accurate nursing student data, applicants, graduates, and attrition by program and geography.
c. Explore universal systems, including a new technology system, that monitors the education database and the statewide applicants.
d. Develop seamless progression from ADN to BSN.
e. Streamline approach to transferring credits from out of state.
f. Based on application data, develop a state plan to promote nursing.
   1) Explore promotion of EMTs in nursing.
   2) Explore health occupation programs in high schools.
   3) Expand Camp Survivor program (Bangor).
   4) Explore promotion of men in nursing.
   5) Promote Career Days in high schools.
   6) Promote professional dress & comportment.

Strategy 4.3 Develop a plan for regional clinical placements.

a. Create a sub-committee that includes representation from each nursing program and member representative of the larger healthcare facilities within each region to develop and evaluate a regional plan.
b. Initiate education programs/certification for clinical "educators/preceptors."
c. Coordinate and develop a regional plan for simulation laboratories.
d. Implement programs and software that utilize regional clinical placements.
e. Develop a data collection system that includes clinical options from all healthcare arenas, i.e. acute care, long term care, public health, schools, community health facilities, home care.
f. Explore new models for clinical education.
g. Develop clinical placements in Critical Access Hospitals.

Goal 5. Increase the proportion of nurses with a baccalaureate degree to 80% by 2020.

Lead: Maine Partners in Nursing Education and Practice, OMNE, DOL

Strategy 5.1 Develop a dynamic statewide database of nursing applicants.

a. Project capacity of nursing programs needed statewide to achieve 80% BSN by 2020. Seek funding to support innovative educational options for meeting the 80% BSN expectation.
b. Develop a sustainable method of regional data collection and analysis of nursing applicants with information regarding qualified as compared to non-qualified applicants by 1/1/2014.
c. Explore reasons for student attrition and, if necessary, pilot interventions to reduce attrition.
d. Create a pathway to support new nursing graduates in attaining BSN.
    1) Partner with healthcare employers to promote and support BSN education.
e. Promote financial support for nurses returning to school in all clinical arenas, including long term and community agencies.
    1) Explore requirement for enrollment in BSN completion on hire.
    2) Explore mandatory BSN for entry and/or re-licensure.
    3) Implement a statewide application with standardized pre-requisites for RN to (BSN or MSN) completion programs.
f. Partner with the DOL to collect and analyze data on current faculty employment and shortage areas by program and geographic region by 1/1/2014.
g. Seek funding for innovative accelerated degree and graduate programs that encourage faculty development and loan repayment for new faculty.

Goal 6.   Champion that at least 10 percent of all baccalaureate graduates matriculate into a master's or doctoral program within 5 years of graduation.

Lead: Maine Schools of Nursing, OMNE

Strategy 6. 1   Increase the numbers of graduate programs in advanced practice and education.

a. Seek funding for innovative graduate programs that promote graduate degrees in nursing education.
b. Seek funding for graduate programs in clinical advancement other than nurse practitioner programs.
c. Articulate the benefits of graduate degrees during undergraduate education.

Evidence Supporting a Strategic Plan for Nursing in Maine

According to the leading nurse economists, there is a current respite from the severe predicted nursing shortage. This respite will exist until about 2017-2018 when it is anticipated that a critical nursing shortage will begin and last for several years. As with previous bust and boom economic periods, when there are cycles of high unemployment in the majority of professions, more nurses are employed. Likewise, as the economy booms, more nurses drop out of the workforce, work part-time or retire if eligible. Based on calculations of data from the Current Population Surveys, 1980-2008, published by Buerhaus, Auerbach, and Stalger (2009), the following graph was developed to demonstrate the impact of a recession on the employment of nurses. These statistics support the notion that the nursing crisis will reappear as the economy improves.
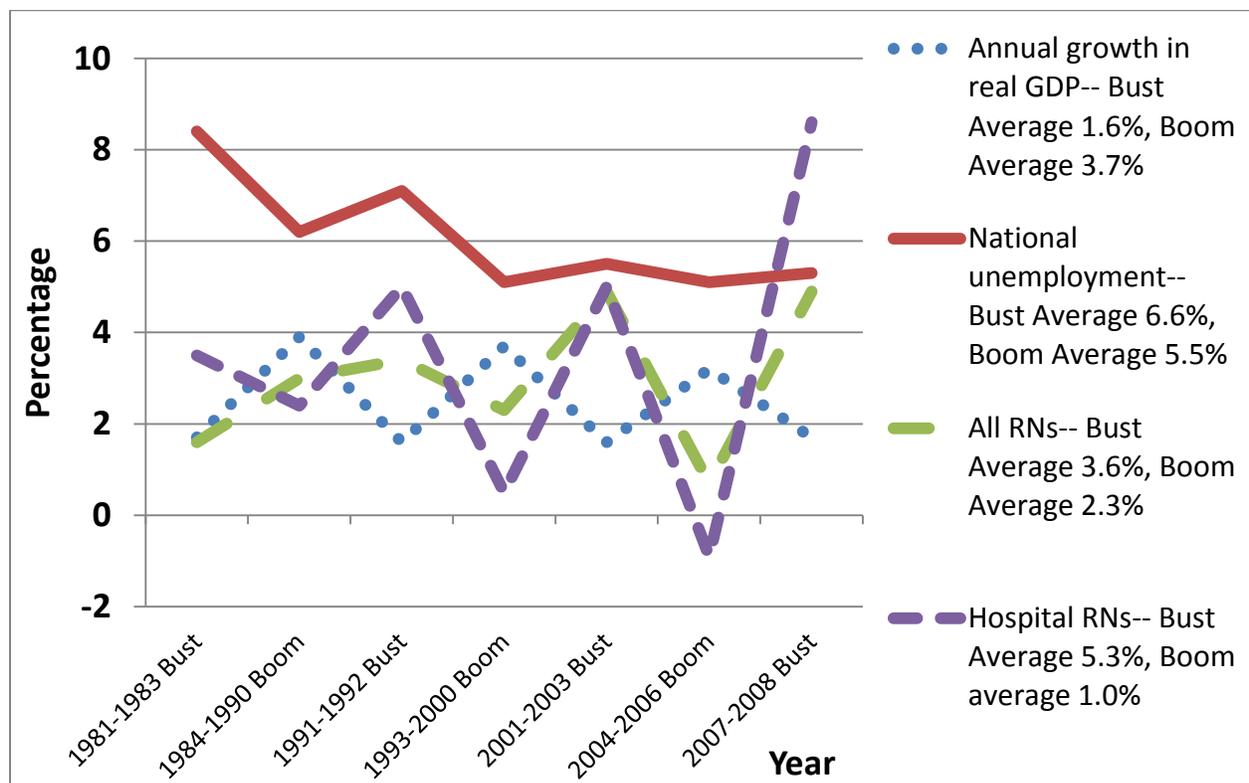
A.   Development of the Maine Nursing Workforce Strategic Plan

Maine is a relatively poor and rural state with the third oldest population in the country; by 2020, Maine will be the second oldest state. The nursing workforce and the nursing faculty are "aging out " at a rate faster than the national average. According to the Forum of Statewide Nursing Workforce Centers, 36 states have up-to-date strategic plans

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to sustain an adequate nursing workforce. Maine is one of 14 states without a contemporary, comprehensive strategic plan. Through the efforts of the Organization of the Nurse Executives in Maine (OMNE) and the sustained volunteer commitment of a smaller cadre of nurses who formed the grant submission team, two grants were obtained for addressing the workforce needs in Maine. The first grant, funded by the Robert Wood Johnson Foundation, provided monies to complete a gap analysis in the state, and the second grant, funded by the Health Resources and Services Administration (HRSA), supported statewide forums and drafting of the strategic plan.

RWJ grant- Surveys of recent graduates and preceptors identifying core competencies needed and exhibited by new graduates were conducted. Core competencies for nursing practice are based on the Nurse of the Future competencies from the American Organization of Nurse Executives and the work of the Massachusetts Department of Higher Education. Competencies include patient centered care, professionalism, communication, systems-based practice, teamwork and collaboration, evidence based practice, quality improvement, safety, informatics, and leadership. Maine added a competency in geriatrics. These competencies will be incorporated into curricular changes in the undergraduate registered nursing programs across the state.

HRSA grant.   A novel approach was designed by the HRSA Grant Team for gathering ideas and innovative approaches for developing and maintaining an adequate nursing workforce. The plan included five statewide forums, comprised of healthcare workers and stakeholders, to gather innovative ideas. To support the work of the strategic planning forums, the HRSA planning team engaged Alyce A. Schultz, RN, PhD, FAAN, a nursing consultant familiar with Maine, its healthcare issues, and the nursing workforce, to conduct the forums and draft the strategic plan and Maine Directions to provide logistical support for the planning and conduct of the forums.

Five forums were conducted in September 2011 covering different geographic areas of the state: Saco, Farmington, Machias, Bangor, and Presque Isle. Efforts were made to assure participation by education, practice and health care consumers by hand delivering and emailing invitations to acute and long-term care facilities and schools of nursing statewide. Almost 200 educators and healthcare providers, community leaders, and one state legislator from across the state attended the forums, with the highest attendance recorded in Bangor. Noteworthy was the limited attendance in the southern area of the state where almost 50% of the nursing workforce resides, the ideas generated in the statewide forums may not represent the southern area of the state.   Presentations highlighting national and statewide information on the current and future nursing workforce were provided by Dr. Alyce Schultz throughout the day at each forum.

Based on "what was known" for each Key Message from the Future on Nursing Report, active guided discussions were developed and facilitated by Dr. Schultz, using a 'coffee conversation' format. Over three hundred creative ideas for educational and retention reform were recorded for consideration in the strategic plan. When similar ideas were generated in each forum, they were included in the overall strategic plan. Positive evaluation feedback for all the forums was received.   See Addendum B for a summary of

ideas generated at each forum. Four Key Messages from the IOM Report on the Future of Nursing were used as the framework for the forum discussions. Comparisons of Maine data with national data on the key message recommendations are found in Addendum C.

Key Messages and Recommendations from the 2010 IOM report on the Future of Nursing

#1 Nurses should practice to the full extent of their education and training.
- Retain current nurses.
- Expand reimbursement to APNs.

#2   Nurses should achieve higher levels of education and training through an improved education system that promotes seamless academic progression.
- Increase the proportion of nurses with a baccalaureate degree to 80 percent by 2020.
- Double the number of nurses with a doctorate by 2020.

#3   Nurses should be full partners, with physicians and other health professionals in redesigning health care in the United States.
- Increase opportunities for nurses to participate.
- Address continuing leadership education.

#4 Effective workforce planning and policy making require better data collection and an improved information infrastructure.

B.   Purpose

The period between 2012 and 2018 will be a transition period before demand and supply reaches a long-run equilibrium. During this transition period, strategic actions must be designed to reduce the duration and effect of the economic and non-economic impact to patients, nurses, and healthcare for the short-term. Beyond 2018, actions must focus on removing any barriers that continue to impact the long-term supply and demand (Buerhaus et al., 2008).

The purpose of the Strategic Plan is to foster the creation of a systematic mechanism to project future supply and demand for the Maine nursing workforce and identify the capacity of the nursing education programs to meet workforce needs.   The strategic plan will be a living document that drives accurate and complete workforce data collection,   to determine workforce supply and demand, to promote novel strategies for meeting the identified needs, to evaluate   action plans, and continuing plans for sustainability beyond 2020.   The plan will suggest actions to examine regionalization of resources in industry and education and support from federal and state legislation, grant funding, and system partners across the state. The strategic plan will not succeed without commitment and accountability of the primary nursing organizations and nurse leaders across the state.

Having a comprehensive plan to address the future nursing workforce needs is a priority that has been recognized by both state and federal legislators. It is understood that a significant proportion of the current workforce in Maine will be retiring in the next 5-10 years and that these numbers are higher still in administration and in education. Data on these trends have been reported and published in annual reports on the state of Maine's nursing faculty and in biennial reports from the Maine nursing minimum data set. These data support the need to not only produce graduates who are sufficiently prepared for the realities of the work environment but to prepare a new generation of administrators and educators. It is anticipated that addressing these concerns will help to eliminate health barriers by creating the appropriate supply, diversity, composition and distribution of the health professions workforce and to assure quality of care by improving the knowledge, skills, competencies and outcomes of nursing health professions workforce.

❖ The nursing workforce that includes registered Nurses (RNs), licensed practical nurses (LPNs), and nursing assistants such as aides, orderlies, and personal care attendants/technicians is the largest component of more than 200 health care professionals (AACN Fact Sheet).
❖ In 2004, there were 2.9 million RNs, with approximately 83% percent employed in nursing (AACN Fact Sheet).
❖ Nationally it is predicted that the severe shortfall of nurses will begin around 2018 and swell to 260,000 short by 2025 (AACN Fact Sheet).
❖ Maine's Department of Labor data (2008) shows that there are currently 14,501 employed RNs, 1,759 employed LPNs, and 10,158 nursing assistants.
  ➢ Preliminary data projected by OneMaine Health Collaborative suggests that in 2013, there will be approximately 575 RN graduates compared to a need for 825 new nurses. By 2021, the gap continues with a projected graduation of 650 new RNs and a projected need of 950 new nurses.

❖ "According to AACN's report on *2010-2011 Enrollment and Graduations in Baccalaureate and Graduate Programs in Nursing*, U.S. nursing schools turned away 67,563 qualified applicants from baccalaureate and graduate nursing programs in 2010 due to insufficient number of faculty (primary reason), clinical sites, classroom space, clinical preceptors, and budget constraints.
❖ The data show a national nurse faculty vacancy rate of 7.7%. Most of the vacancies (91.4%) were faculty positions requiring or preferring a doctoral degree.
  ➢ The top reasons cited by schools having difficulty finding faculty were a limited pool of doctorally prepared faculty (31.3%) and noncompetitive salaries compared to positions in the practice arena (26.72%)."
❖ For Maine, in the fall of 2011, with an estimated faculty count of 164, a potential vacancy rate or shortage of 11% was predicted. Only 30% of the faculty in the state was doctorally prepared. However this is higher than the 23% reported in 2009. Faculty salaries for masters and doctorally prepared faculty were approximately 2/3 the salaries attainable in industry. Faculty to student ratios had increased from 16:1 in 2007 to 23:1 in 2009 and was at 31:1 in 2011. The decrease in MS graduates, the increased need to hire faculty with less than a master's for part-time teaching and an

increase in the number of part time teachers are all indicators that the predicted crisis of faculty is upon us (The Fall 2012 Survey of Maine Nursing Education Programs).

❖ Within the State of Maine, there are 13 RN nursing education programs, including 8 associate degree programs, with one closing in 2012, 6 baccalaureate degree (BSN) programs, 5 RN-BSN programs, 2 accelerated BSN programs, and 5 master's degree programs including a graduate program for RN anesthetists and 1 DNP program. There are 2 licensed practical nursing (LPN) program s and 81 certified nursing assistant (CNA) programs across the state (The Fall 2012 Survey of Maine Nursing Education Programs).

❖ Over 50% of the nurses in Maine are initially prepared at the associate degree level. This percentage suggests that Maine falls far short of the major recommendation in the Institute of Medicine's Future of Nursing report (2010) for 80% of registered nurses to have a baccalaureate degree by 2020 (The Fall 2012 Survey of Maine Nursing Education Programs).

C.   Background

The Maine Nursing Minimum data set was established in 2002 as a Robert Wood Johnson fellowship program by Dr. Jane Kirschling, former Dean of the College of Nursing at the University of Southern Maine. The dataset was supported and developed by Organization of Maine Nurse Executives (OMNE), the Maine State Board of Nursing (MSBON), the Maine State Nurses Association (MSNA), and Maine Hospital Association (MHA). In 2005, the survey was made available online although approximately 10% of the respondents still completed the survey in hard copy.   Beginning in 2006, the survey was still administered through the MSBON but the Maine Office of Research and Vital Statistics (ODRVS) took charge of the preparation and analysis. By 2010, a sustainable source of support was obviously needed for analysis   Response rate for the minimum data set has continuously dropped from a high of 74% in 2002-2004 to 57% in 2006-2008 to a low of 27% in 2008-2010. A small number of nurses continue to complete the survey in hard copy. The survey provides data for licensed nurses in Maine who respond which includes RNs and LPNs.

Supply data for the CNA workforces is limited. Based on data from the Maine Department of Health and Human Services (DHHS), September, 2011, there is a total of 56, 788 CNAs in the state but only 15,399 are reported as actively working. There is the possibility that many of the nursing assistants were nursing students who have now graduated into professional practice. Demographic information on the supply and demand of the CNA workforce is not available.

While the Maine Nursing Minimum Dataset provides supply data for consideration in the strategic planning for the state, albeit a lower than desired response rate, demand data are less complete. The Maine Department of Labor, Center for Workforce Research and Information, analyzes state workforce data from a national databank and provides employment and demand data. From 2000 to 2008, 17,203 new jobs were created in Maine in healthcare, more than the next 10 highest job producing sectors combined. The

Maine Center for Workforce Research and Information (CWRI) expects healthcare to continue to lead the state in employment growth, generating 50 percent of all new jobs from 2006-2016. According to the report, the number of registered nurses in the state shows signs of impending shortages.

Geographic distribution of healthcare workers across the state is just one of the workforce data issues. The data as provided are not able to show where the shortages exist although data would suggest that the shortages are more critical in the rural counties. Overall, the number of residents over the age of 65 years in the state is growing faster than the national average with a projected increase from 15.6% in 2011 to 21% in 2020, making it the second "oldest" state. While those over the age 65 typically require three to five times the number of physicians per population than do infants and children, no such calculations are available to determine nursing demand with an aging population. Further complicating the demand issue for nursing and an aging population is the total lack of data regarding advanced practice nurses in the state, a workforce identified as potentially meeting primary healthcare needs across the state. Based on the limited data from the 2008-2010 survey, the following information on county of residence and age of the licensed nurses in the counties are listed in the table below. Again, it is important to understand that these data represent supply and not demand.

Maine Data 2008-2010   All RNs

	N=5430	Aged≥ 52 years; 53.4%
County of Residence		
Androscoggin	8.3% (418)	39.5%
Aroostook	5.3% (215)	36.3
Cumberland	22.9% (1218)	49.0
Franklin	2.3% (121)	43.0
Hancock	4.1% (144)	56.3
Kennebec	9.2% (480)	51.7
Knox	3.2% (124)	68.5
Lincoln	2.9% (85)	57.6
Oxford	4.2% (101)	49.5
Penobscot	12.5% (619)	42.4
Piscataquis	1.4% (49)	42.8
Sagadahoc	2.5% (19)	57.9
Somerset	3.2% (107)	52.3
Waldo	2.8% (69)	63.8
Washington	2.1% (73)	43.8
York	13.2% (322)	53.7

"A prerequisite for effective workforce analysis is having reliable data and a systematic process for measuring the supply of newly trained workers entering the

market" (IOM report, 2010**). Maine has no such process.** Current data sets in Maine are fundamentally flawed due to fragmented collection processes. The current data sources used for tracking all nursing program graduates have limitations that make collecting comprehensive, accurate data challenging and time consuming. The development of a more reliable and efficient system for tracking Maine's health education program graduates is essential for more effective labor market analyses. Workforce replacement data are also poorly projected. "Replacement needs are the number of projected openings resulting from workers retiring from or permanently leaving an occupation. Replacement ratios are done at the national level and based on national data, and then applied to state level projections (Workforce Analysis of Maine's Health Services Sector, 2010). If Maine's nurse workforce is more aged than the national average, then our replacement numbers would be higher than suggested in the projections. It's impossible to know what proportion of replacement openings will be filled by those already trained and qualified versus newly trained people entering the industry.   Some of replacement openings (turnover related) will not require an additional supply of workers to fill the positions" (personal communication, Paul A. Leparulo, CFA, Center for Workforce Research and Information, Maine Department of Labor, August 15, 2011), but the numbers are unknown.

Further caveats on the demand side include: "Employment projections don't capture those employed in jobs that require RN training, but are technically not nursing positions. Jobs in health informatics, for example, often require an RN background, but those working in this field are not counted as RNs. Further, nurses working in non-healthcare industries are sometimes not captured as nurses. For example, insurance companies that employ RNs to assess healthcare claims often call these positions something other than 'nurse'. Occupational projections are based on the assumption that the healthcare system of the future will resemble the present one which, of course, it may not" (personal communication, Paul A. Leparulo, CFA. Center for Workforce Research and Information, Maine Department of Labor, August 17, 2011).

In October of 2010, the Institute of Medicine published the classic report titled "*The Future of Nursing: Leading Change and Advancing Health* that explores how nurses' roles, responsibilities, and education should change significantly to meet the increased demand for care that will be created by health care reform and to advance improvements in America's increasingly complex health system" (http://thefutureofnursing.org/IOM-Report). Eight recommendations for improvements in the nursing workforce, embedded in four Key Messages, were delivered.   In the spring of 2011, OMNE and the HRSA grant team accepted the recommendations of the report as the guiding framework for the Maine Nursing Workforce grant and the Maine Nursing Workforce Strategic Plan.

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ADDENDUM A

Statewide Forum Recommendations not Included in the Strategic Plan

Strategy 1.2 Leverage partnerships with the disciplines and members of groups that need to be at the table to develop a structure for effective workforce planning.
- Consider raising funds for data collection and analysis through additional licensure.

Strategy 2.1 Retain new graduates in all levels of the nursing workforce.
- Explore more testing sites and time that are easily accessible for monitored NCLEX examinations.

Strategy 2.2 Retain older workers in the nursing workforce.
- Explore paid sabbaticals in clinical agencies.

Strategy 4.3 Develop a plan for regional clinical placements.
- Utilize Electronic ICUs as clinical sites.

Strategy 5.1 Develop a dynamic statewide database of nursing applicants.
- Promote pay differential for educational levels.

Strategy 6.1 Increase the numbers of graduate programs in advanced practice and education.
- Seek funding for development and implementation of DNP programs including acute care nurse practitioner programs.
- Promote salary differentials for educational levels in the clinical setting (same as previous strategy in 5).
- Develop a tracking system for matriculation data.

Strategy 6. 2 Seek funding for promoting careers in education.
- Seek state and federal funding for decreasing the current 20% difference in salaries for master's prepared faculty in educational and clinical facilities.
- Seek funding for innovative accelerated degree and graduate programs that encourage faculty development and loan repayment for new faculty who complete PhD programs.

Addendum B

Innovative Suggestions from Each Forum

Presentations highlighting national and statewide information on the current and future nursing workforce were provided by Dr. Alyce Schultz throughout the day at each forum. Based on "what was known" for each Key Message from the Future on Nursing Report, active guided discussions were developed and facilitated by Dr. Schultz, using a 'coffee conversation' format. Over three hundred creative ideas for educational and retention reform were recorded for consideration in the strategic plan. When similar ideas were generated in each forum, they were included in the overall strategic plan. Innovative ideas proposed in each forum site were also included. Positive evaluation feedback for all the forums was received.

Saco: 54 registered-38 actual attendees. Southern Maine has the largest number of healthcare employees with a majority of the largest healthcare systems and schools of nursing. Based on the 2008-2010 survey data, 47% of all licensed nurses live in Androscoggin, Cumberland, York, and Sagadahoc counties. The attendance did not reflect interest or support from these major settings.
- Increase attention to older workers including flexible shifts and elimination of the 12 hour shift, assignments based on physician demand in addition to clinical expertise, shift sharing
- Make the BSN mandatory as entry into practice and require continuing education credits for re-licensure, add more gerontology focus, salary differential based on education level
- Create a statewide template for residency and preceptor programs
- Promote Maine
- Develop a workforce center

Farmington: Farmington=60+ registered-44 actual attendees. The participants at this forum included a large cadre of students from the University of Southern Maine. Statements were also shared at this forum that "the wrong people were at the table," explained as the majority of attendees would be retired or near retirement by 2020.
- Create similar pay scales across the state, taking into account the cost of living in different areas of the state
- Increase opportunities for older workers to be teachers and mentors, with creative scheduling, adjustable hours, and flex time
- Require exit interviews, using a statewide template
- Require mandatory continuing education for re-licensure
- Promote Robert Wood Johnson's Transforming Care at the Bedside (TCAB) program and the Magnet™ environment

Machias: 19 registered- 12 actual attendees**.** The participants at this forum stated that "nurses are the primary breadwinners" in many Machias area homes and members of the nursing workforce and employees "need to get over being from away."
- Require job shadowing prior to admission to nursing programs.
- Develop interdisciplinary courses.
- Adopt the Magnet™ principles in the healthcare institutions.
- Require the BSN as entry into practice and provide pay differential based on educational level.
- Support job sharing for younger and older workers.
- Provide clinical support, perhaps in the form of float pools, for Critical Access Hospitals.
- Develop a workforce center and utilize the support that Muskie could provide.

Bangor: 82 registered- 64 actual attendees. This was first forum where "bullying" was mentioned as an issue in healthcare facilities and where workforce needs in long term care (LTC) were discussed in more depth.
- Support older workers through job sharing and flexible scheduling; address provider fatigue; develop career opportunities.
- Develop an interdisciplinary workforce center and mandate completion of the supply survey for re-licensure.
- Mandate continuing education credits for re-licensure and the BSN within 7 years of graduation.
- Develop a statewide career ladder for CNAs and a CNA to RN Bridge program; give entry credits to CNAs applying to RN programs.
- Standardize the entry into nursing programs statewide.
- Centralize statewide job postings.
- LTC facilities should provide cross training, orientation, and educational support and implement TCAB programs, mirroring the programs in acute care.

Presque Isle: 48 registered-38 actual attendees. The participants at this forum were the first to discuss partnerships with the Job Corps and the Native American programs.
- Mandate the BSN within 5 years of graduation and provide pay differential based on educational levels.
- Support pay equity across geographic settings based on cost of living indices.
- Provide more testing sites for the NCLEX.
- Network job openings across the state.
- Encourage EMTs to enter nursing.
- Provide better publicity regarding instate educational programs.
- Develop education/orientation units in the hospitals.

Addendum C

Comparison of Maine data with National Data for the IOM Key Messages

Key Message #1 Nurses should practice to the full extent of their education and training.

❖ Expand reimbursement to APNs
  - Survey published in JAMA September 2008, only 2% of fourth-year medical students plan to work in primary care after graduation, despite the need for a 40% increase in number of primary care physicians in the U.S. by 2020.
  - Association of American Medical Colleges predicts a shortage of 46,000 primary care physicians by 2025.
  - Numerous federal legislative and regulatory barriers that prevent advanced practice registered nurses from fully using their skills to provide services within Federal health programs must be removed (AARP, March 2010).
  - The overall ratio of claims against Nurse Practitioners is 1 for every 166 Nurse Practitioners in the nation, compared with 1 for every 4 physicians (Pearson, 2010).
  - We know very little from long-term care, public health and outpatient areas where much of healthcare is migrating.

  MAINE DATA: (Data provided should be interpreted as preliminary)
    o Nurse Practitioners in Maine can practice independently following a two-year supervised internship, whereas Clinical Nurse Specialists, Nurse Anesthetists, and Nurse Midwives must always practice under physician supervision.
    o 2007-National data reported 8.3% of RNs were advanced practice nurses as compared to 5.4% reported in Maine (2008-2010; 6.4% stated having AP degrees but only 5.4% indicated which one).
    o 2008-2010 survey responses indicated 370 advanced practice nurses in Maine with 225 employed; 69% plan to still be working in Maine in 5 years. 53% are 51 years of age or older.
    o APN data may not be accurate due to the survey changes in 2006-2008 and lower response rate.
    o Department of Labor workforce data does not differentiate APN data from the total Registered Nurse data.

❖ Retain current nurses
  - About 82 percent of U.S. hospitals say their annual RN attrition rate is between 1 and 20 percent, with an average rate of about 14 percent (AACN Fact Sheet).
  - At Children's Memorial Hospital in Chicago, 29.5 percent of new graduates left in their first year of employment. A graduate internship lowered the rate to 12.3% (2006 data from AACN Fact Sheet).

- 13% of newly licensed RNs had changed principal jobs after one year, and 37% reported that they felt ready to change jobs (Kovner et al., 2007. AACN Fact Sheet).
- Physician-nurse rounding, physician-nurse education teams, recognition programs, and collaborative efforts of nursing staff with other, non-nursing departments were the major reason, the authors believe, behind a decrease in nurse turnover rates from 7 percent in 2004 to 3 percent in 2008 (AACN Fact Sheet).

MAINE DATA:
- 2008-2010 survey data showed only 61% of all respondents plan to be working in Maine in 5 years, with another 24% unsure of employment in 5 years; 68% of the staff nurse respondents plan to be working in 5 years.
- 2011 Surveys of nursing schools found that in 12 of 13 programs responding there were currently 8 vacant fulltime positions with most being vacant for more than 6 months. Part-time faculty positions are reported by some schools as being easier to fill than in the past, however some schools report a difficulty in finding part-time faculty with the requisite education for teaching. Many schools are hiring part-time faculty with Baccalaureate degrees.
- No data are available in Maine for CNA retention

Key Message #2   Nurses should achieve higher levels of education and training through an improved education system that promotes seamless academic progression.

❖ Current issues in education:
- Increase in faculty/student ratio.
- Lack of clinical faculty.
- Difficult to find clinical space.
- Money for simulation laboratories and education.
- Aging faculty.
- Access to educational options.
- A 'seamed' system of moving to higher education.
- Over half of the registered nursing graduates are from associate degree programs.
- Qualified applicants are being turned away in associate and baccalaureate degree programs.
- ONLY approximately 21% of ADN GRADUATES return for baccalaureate degrees.

❖ Create seamless academic progression
- Oregon's seamless pathways program provides nursing students an uninterrupted route from a community college to a university program where

they graduate with a bachelor's degree. The same curriculum is used across 13 nursing programs composed of 8 community colleges and 5 universities. Two classes have graduated resulting in 40% of students continuing from ADN to BSN as compared to 20% historically.

- Replication of Oregon's seamless pathway program is underway in the New York-North Carolina Regional Program, Hawaii, California, Connecticut, Massachusetts, Wyoming, and New Mexico.
- Nursing schools are forming strategic partnerships and seeking support to help expand student capacity.

MAINE DATA:

- o Limited efforts in Maine to create seamless education.
- o RWJ grant to study curricular changes necessary in registered nursing programs in Maine.
- o Based on RWJ grant gap analysis two projects are underway; one integrates nurse of the future competencies in undergraduate programs, confirmation of commitment for the schools to incorporate the competencies and re-invigorate articulation agreements between university programs for transfer of credits, bringing Oregon nursing education experts to Maine in spring 2012 to facilitate provider and education discussion regarding for seamless transition.

❖ Increase the proportion of nurses with a baccalaureate degree to 80 percent by 2020.

- According to AACN's report on *2010-2011 Enrollment and Graduations in Baccalaureate and Graduate Programs in Nursing*, U.S. nursing schools turned away 67,563 qualified applicants from baccalaureate and graduate nursing programs in 2010 due to insufficient number of faculty, clinical sites, classroom space, clinical preceptors, and budget constraints.
- 65% of nurses are educated in community college programs.
- Most Magnet hospitals offer tuition reimbursement for all levels of nursing education.

MAINE DATA:

- o Of the 13 nursing programs in Maine, five are baccalaureate programs.
- o In 2009 57% of first time licensees were graduated at the Bachelor's level or higher compared to 41% nationally (The Fall 2012 Survey of Maine Nursing Education Programs).

- o In 2011 (with one associate degree program NOT reporting) these percentages were 52% and 48 % respectively. With a complete report, it is anticipated that these percentages will be closer to 50% for each. While this exceeds the national standard it suggests the high numbers of baccalaureate graduates has not been sustained after incentives for growth of the baccalaureate programs was withdrawn (The Fall 2012 Survey of Maine Nursing Education Programs).
- o Total numbers of nursing graduates in the associate, baccalaureate, and masters' programs were down in 2011, with slight gains in RN-BS graduates.
  - ➢ 78 nurses completed the RN-BSN in 2011, up from 74 in 2009.
  - ➢ Masters graduates were down 12% from two years earlier.
- o 75% of programs reported adjusting admission based on employment data. 11% of associate degree applicants were admitted and 3% deferred in 2009; in 2011 7% were admitted and 1% deferred (this number does not represent the full cohort of AD programs, however). In baccalaureate programs 16% were admitted and 2% deferred in 2009 and 13% admitted and 2% deferred in 2011 (The Fall 2012 Survey of Maine Nursing Education Programs).
- o Applications to masters' programs increased from 271 applicants in 2009 to 303 in 2011; however the percentage of students accepted across all masters' programs decreased from 83% in 2009 to 69% in 2011 (The Fall 2012 Survey of Maine Nursing Education Programs).
- o While schools are asked to identify qualified students and the number of students turned away, there is no way to determine how many students apply to multiple programs so these numbers may grossly exaggerate the number of applicants turned away. In 2011 there were 2327 applicants to baccalaureate programs, 1715 were qualified and 891 were accepted. For the associate degree programs there were 1915 applicants, 1271 qualified applicants and 259 accepted and 47 deferred (6 of 7 associate degree programs reporting). This is a total of 1836 qualified applicants that were turned away (The Fall 2012 Survey of Maine Nursing Education Programs).

❖ Double the number of nurses with a doctorate by 2020.
- 106 DNP programs in planning stages, enrollment grew 35.3% or 7,034 students (*2010-2011 Enrollment and Graduations in Baccalaureate and Graduate Programs in Nursing*).
- Enrollment in PhD nursing programs increased 10.4% (434 students), 73 new research focused BSN to doctoral programs, 13 under development (*2010-2011 Enrollment and Graduations in Baccalaureate and Graduate Programs in Nursing*).

MAINE DATA:
- 2006-2008 survey; 38 nurses or 0.3% are educated at doctoral level in Maine; 2008-2010, 47 nurses educated at doctoral level   (don't have a denominator, The Fall 2012 Survey of Maine Nursing Education Programs).
- There are no PhD programs in Maine and none are planned; USM opened a Doctorate of Nursing Practice (DNP) in January 2012 with lower than planned enrollment of 6 students (The Fall 2012 Survey of Maine Nursing Education Programs).

Key Message #3   Nurses should be full partners, with physicians and other health professionals in redesigning health care in the United States.

MAINE EFFORTS:
- Increase opportunities for nurses to participate.
- Address continuing leadership education.
- Hanley Leadership Forum provides interdisciplinary leadership learning opportunities for health professionals.

Key Message #4 Effective workforce planning and policy making require better data collection and an improved information infrastructure.

Issues in Workforce Planning:
- Strategic health care workforce planning to achieve this balance is hampered by the lack of sufficiently reliable and granular data.
- Strategic healthcare workforce planning requires comprehensive data on the numbers and types of nurses currently available and required to meet future needs.

- Systematic assessment and projection of nursing workforce requirements by role, skill mix, region, and demographics is needed.
- The Affordable Care Act (ACA) mandates the creation of a National Health Care Workforce Commission and authorizes a National Center for Workforce Analysis, as well as state and regional workforce centers and provides funding for workforce data collection and studies.
- Workforce centers appear to have resulted in a more knowledgeable set of key policy informants and have enhanced the number of research driven policies emerging from state legislatures (Green, Kishi, & Esperat, 2010).

MAINE ISSUES:
  - Data collected by multiple methods by multiple agencies.
  - Statewide minimum database only provides us with descriptive information on the current supply.
  - Large variation in terms.
  - No budget for analyzing the data.
  - Future planning is prohibited by inconsistent data and limited identification of need.
  - Large rural state with bigger gaps in rural, sparsely populated areas.

❖ Create infrastructure for data collection and information sharing
- 2001—Recommended that states create nursing workforce centers to a) provide objective information to health care providers, policy makers, and stakeholders; b) develop a strategic planning mechanism for nursing resources; c) promote recruitment and retention by recognizing and rewarding excellence/recognition of nursing colleagues.
- In the next decade, 36 states developed Workforce Centers; Maine is not one of the states with a Workforce Center.
- A National Workforce Center was created.

MAINE:
  - 2001—Maine State Minimum Nursing Data survey developed and conducted in conjunction with nursing re-licensure for RNs and LPNs.
  - 2005—Maine State Minimum Nursing Data survey put online.
  - 2010—No continuing funding source for data analysis.
  - No integration of supply data collected in the Maine State Minimum Nursing Data Set and demand data collected by the Maine State Department of Labor.
  - Both data sets have major gaps in useful, consistent data.
  - No standardized nursing education data collected.
  - Extremely limited data on the CNA workforce.

MAINE DATA:

- o Cumberland County has the most RNs per capita (LQ: 1.53) as well as the highest average wage for RNs, although wages here are still below the US average. 23% of the nursing workforce reside in Cumberland County (2008-2010 data).
- o Aroostook County, the second most rural county in Maine, has nearly the same number or RNs per capita as the state average. RNs working in Aroostook County last year earned 12% less than the state average.
- o In 2008 RNs in Piscataquis County were among the highest paid in the state. Despite this, the concentration of RNs was substantially below the state average (0.67 LQ ratio).
- o Compared to the nation, Oxford County has 43% fewer RNs per capita, and Piscataquis County has 16% fewer.