

**IOWA COUNCIL OF NURSES
NURSING WORKFORCE INITIATIVE**

IOWA COUNCIL OF NURSES MEMBERSHIP

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IOWA LEAGUE FOR NURSING

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ICON NURSING WORKFORCE INITIATIVE

The ICON NURSING WORKFORCE INITIATIVE REPORT documents Phase I of the Initiative that was begun in June 1999. The Initiative was made possible through the leadership of ICON and the nurses in Iowa who contributed both time and financial support. In addition several nursing organizations and health care associates and organizations within the state donated the in-kind support that was essential to the completion of Phase I.

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EXECUTIVE SUMMARY

The Iowa Council of Nurses (ICON) Nursing Workforce Initiative is a state nursing project, funded by nurses and health care organizations, to develop and utilize a broad-based nursing workforce prediction model that is sustainable over time. This model is intended for key stakeholders to facilitate changes necessary to ensure a nursing workforce in Iowa that provides nurses with appropriate preparation in the right place at the right time.

The Initiative began in July 1999 with the appointment of a Project Director and Steering Committee. The Steering Committee was made up of representatives of all health care settings, nursing education programs, industry, and the legislature. The work was divided into three phases; data collection, analysis/recommendations, and implementation. Data collection has now been completed. While additional information will be needed to complete the prediction model, the data gathered clearly identifies a current and future nursing shortage for all categories of nursing staff.

Iowa is faced with an aging nursing work force, a 27% decrease in graduates from all nursing education programs, and an aging faculty with 49% planning to retire in 10 years. Of the 38,359 actively licensed nurses in the workforce, sixty four percent will either be retired or over 50 years of age in 10 years. Although there have been over 200 additional nurses added to the nursing work force each of the past 9 years, data from a recent survey of hospitals, long term care, ambulatory clinics, and home health/public health agencies projects a current shortage of over 2600 RNs in the state.

Licensed practical nurses and non licensed nursing staff including certified nursing assistants, home health aides, and certified medical assistants are also in short supply. Over 700 vacancies are projected for LPNs and over 2600 vacancies for the non-licensed staff.

Employers are using a variety of strategies to fill vacant positions, including reduction in the number of patients admitted to their services. Home health/public health agencies report reducing patients to meet staff availability, with several hospitals reporting reductions in beds, primarily in critical care areas and, in extreme cases, transfer of patients to another facility.

Approximately twenty five percent of actively licensed RNs and LPNS employed in nursing work part time, averaging 20 hours per week. Strategies to increase hours of part time nurses may not be practical since employers indicate nurses work part time by choice or for personal reasons. The employer survey indicated an increasing demand for baccalaureate prepared nurses especially in hospitals and home health/public health agencies. Sixty two percent of employers responding to the survey reported that they expect their staffing needs will increase in the next 5 years with 30% reporting no change.

Iowa demographics show an aging population with the median age increasing from 36.4 in 1997 to 41.1 in 2020. In addition, the population cohort from 20-24 years of age has dropped from 272,030 in 1970 to 197,090 in 2000, a 27.25% decline. This will make recruitment more difficult than during past nurse shortages.

The recent Public Health Community Health Needs Assessment identifies the top 10 major health problem priorities for the state. The majority of these health problems require not only acute care, but also chronic care, education, and prevention strategies. A shortage of nurses will hamper efforts to meet these health needs.

Work has begun on Phase 2 and 3 of the Initiative. Several recommendations appropriate for state action have been forwarded to the Director of the Department of Public Health for consideration in the Governors Health Enterprise planning. These recommendations include establishment of an Office for Health Professional Development, increased funding for loan forgiveness and scholarship programs for nurses working in Iowa, collaborative action with federal and state agencies to review necessity for documentation and regulation requirements, operationalizing goals and action steps identified in *Healthy Iowans 2010* that address health care workforce, and facilitating initiatives that foster respect and positive nurse/physician relationships in all work environments.

A series of public forums will be held throughout the state to publicize the results of the ICON Nursing Workforce Initiative and seek input for strategies that will improve work environments, aid in recruitment and retention of nurses and reduce other factors that contribute to the declining supply of nurses.

Iowa Council of Nurses
Nursing Workforce Initiative

Table of Contents:

Introduction.....3

A. Nursing Supply.....4

 1. Current Licensees in Iowa.....5

 2. Nursing Education.....6

 3. Nursing Faculty.....8

B. Iowa Workforce Demographics.....9

 1. Population Projections.....11

 2. Income.....14

 3. Leading Causes of Death in Iowa Elderly.....14

 4. 1996-2006 Major Employers.....15

 5. Iowa Future Workforce Characteristics.....16

C. Health Care Need.....17

D. Employer Demand.....18

 1. Employer Survey Findings.....19

 2. Strategies.....22

 3. Hiring.....23

 4. Education.....23

 5. Salary.....23

Summary.....24

Recommendations.....26

Appendix.....28

List of Tables

Figure 1:	Number of Active Licensees - 2000
Figure 2:	Iowa RN Employment Status
Figure 3:	LPN Employment Status
Figure 4:	RN's by Age Group (Current & Projected)
Figure 5:	Basic and Highest RN Education
Figure 6:	RN Admissions to Iowa Nursing Programs
Figure 7:	Attrition Rates for Iowa Nursing Education Programs
Figure 8:	Number of US Educated RN's Passing NCLEX the First Time
Figure 9:	Number of Iowa Educated RN's Passing NCLEX the First Time
Figure 10:	Number of Iowa Educated LPN's Passing NCLEX the First Time
Figure 11:	Ages of Community College Nurse Educators
Figure 13:	Ages of University/College Nurse Educators
Figure 14:	Iowa Elderly Population Projections
Figure 15:	Population by Minority Status
Figure 16:	Iowa Population 20-24 Age Group
Figure 17:	Education Attainment of the Elderly
Figure 18:	Iowa Population Below Poverty Level
Figure 19:	Leading Cause of Death in Iowa's Elderly
Figure 20:	Job Growth
Figure 21:	Major Employers

Table 1:	Reported Vacancies - Ambulatory Clinics
Table 2:	Reported Vacancies - Home Health/Public Health
Table 3:	Reported Vacancies - Long Term Care
Table 4:	Reported Vacancies - Hospitals
Table 5:	Reported Vacancies - Includes Hospital Respondents who had not Previously Responded to the ICON Survey
Table 6:	Projected RN Vacancies for Iowa
Table 7:	Projected LPN Vacancies for Iowa
Table 8:	Projected Non-Licensed Staff Vacancies for Iowa
Table 9:	Future Changes
Table 10:	Vacancy Strategies
Table 11:	Strategies to Increase Part Time Staff Hours
Table 12:	#1 Hiring Difficulty
Table 13:	Desired RN Educational Staff Mix
Table 14:	Average Base Salary

INTRODUCTION

In the spring 1999, the Iowa Council of Nurses (ICON), comprised of representatives of the Iowa Nurses Association, Iowa League for Nursing, Iowa Association of Colleges of Nursing, Iowa Community College Nursing Education Directors Association, Iowa Organization for Associate Degree Nurses and Iowa Organization of Nurse Leaders, voted to address the Registered Nurse and Licensed Practical Nurse workforce through a formal initiative. ICON determined that it is in the best interests of the people of Iowa to address nursing supply and demand in light of rapid changes in health care, staffing concerns articulated by some institutions, state workforce data and demographic trends.

A Project Director and Steering Committee were appointed in July 1999. The ICON Nursing Workforce Initiative Steering Committee represents nursing education and practice, employers, representatives of professional nursing associations, accrediting entities, state agencies and relevant policy making bodies. The goal identified for the Initiative was to develop a broad-based nursing workforce prediction model that would be sustainable over time. This prediction model would provide information and direction for nursing education, practice, licensure, and public policy.

The ICON Nursing Workforce Initiative was organized into three phases: Data Collection, Analysis/Recommendations, and Implementation. Task forces conducted baseline data collection on nursing supply, Iowa demographics and workforce, health care needs and employer demand. The task forces included representatives of nursing education and practice and stakeholders from geographical areas throughout the state.

A public relations campaign was developed to promote awareness of the project among the nursing community and the public. Brochures, newsletters, presentations and Web-based resources were utilized as communication tools.

The Iowa Initiative collaborated with the national Colleagues in Caring Projects (CIC) that were funded by the Robert Wood Johnson Foundation to assess nursing supply and demand in twenty individual states. Although Iowa was not a funded state, the ICON Nursing Workforce Project Director served on the national Nursing Practice Committee and represented ICON at the National Colleagues in Caring Project meetings. The Deputy Director of the Colleagues in Caring Project and the Project Director in South Dakota provided on-site consultation to the Initiative. The national office of the CIC projects provided resources and contacts throughout the project. The Iowa Initiative continues to work with CIC to develop national recommendations and policies that will support the increased supply of registered nurses within the nation.

The data collection phase was initiated in the fall of 1999. Data collection plans included using existing objective data whenever possible, obtaining county specific data if available, and developing a plan for annual updates to maintain a current data base for future projections.

NURSING SUPPLY

The initial approach of the Nursing Supply Taskforce included a review of the minimum data sets used by other states to collect 'supply' information as well as identifying the sources of existing data related to the supply of nurses in Iowa. The committee limited the collection of data to licensed practical nurses and registered nurses. The supply of unlicensed assistive personnel was being address by another Iowa group. Advanced practice nurses were included in the registered nurse numbers. Data specific to these advanced practice nurses will be addressed during a later phase of the project.

Iowa's minimum data set included the following fields:

- A. Current Nurses (RN, LPN)
 - 1. Number Licensed
 - 2. FTE's
 - 3. Employment – by county
 - 4. Ages (by Date of Birth and county of employment)
 - 5. Field/place of employment (primary and secondary when appropriate)
 - 6. Primary Clinical Area of Practice/Teaching
 - 7. Type of Position (RN only)
 - 8. Race/Ethnicity
 - 9. Gender
 - 10. Basic Nursing Education
 - 11. Highest Degree Held (RN only)
- B. Nursing Students (Pre-licensure Preparation only)
 - 1. Age of Graduates (Date of Birth)
 - 2. Number of Graduates from Program Type (PN, ADN, BSN)
 - 3. Race/Ethnicity
 - 4. Gender
- C. Data from Retirement Survey (see Appendix A)

The majority of data from this minimum data set was currently available through the Iowa Board of Nursing. Most of the data was being collected through license renewals and Annual Reports from all of the nursing education programs. The Iowa Council of Nurses made recommendations to the Iowa Board of Nursing for the revision of the license renewal and Nursing Education Annual Reports so that more specific data could be collected.

The committee identified that information regarding the level of interest in nursing that was being expressed by high school students and the referral of students into nursing on the part of the counselors would also be valuable. Specific data and collection methods are being investigated.

A concern related to the ongoing collection of supply data has occurred since Iowa has become a member of the Licensure Compact. The type of data supplied through license renewals will be altered. Data on RN's/LPN's whose primary state of residence is another compact state but work in Iowa will not be available from the Iowa Board of Nursing. Conversely, data on RN's/LPN's whose primary state of residence is Iowa but are employed outside of Iowa will be

available. The Iowa Council of Nurses recommended that the Iowa Board of Nursing continue dialogue related to collection of the minimum data set with the other compact states.

Current Licensees in Iowa

December 2000 data from the Iowa Board of Nursing (IBON) reflects 38,359 Registered Nurses and 9,357 Licensed Practical Nurses holding active licenses in Iowa. However, only 31,838 RN’s and 6,745 LPN’s are currently working in nursing. (See Figure #1.) Iowa’s RN workforce is represented by 59% working full-time and 24% working part-time. Fifty-two percent of the LPN’s are employed on a full-time basis and 20% part-time. This percentage of LPN’s may be lower because many of Iowa’s LPN’s continue their education through the ADN Completion programs at the community colleges and maintain dual active licenses while actually working in the role of the RN. (See Figure #2 and #3.) Those who have active licenses, 83% of the RN’s and 72% of the LPN’s are currently working in nursing.

Fig. 1

Number of Active Licensees – 2000*
(*Iowa Board of Nursing)

	RN	LPN	TOTAL
Active Licenses	38,359	9,357	47,716
Currently Employed in Neg.	31,838	6,745	38,583

Fig. 2

Iowa RN Employment Status
2001*

*Iowa Board of Nursing

Nursing FT	59%	83%
Nursing PT	24%	
Non-Nursing FT	2%	3%
Non-Nursing PT	1%	
Retired	2%	
Unemployed	11%	
Student	1%	
Total Employed		86%

Fig. 3

LPN Employment Status - 2001*

*Iowa Board of Nursing

52%		
20%	72%	
3%		
2%	5%	
1%		
20%		
2%		
		77%

By 2011, 60% of Iowa's RN with active licenses will be 50 years of age or older! Figure #4 illustrates the age breakdown of the RN's currently holding active licenses in Iowa.

Fig. 4

**RNs by Age Group:
Current and Projected***
(Number and Percent of Active License Holders)
*Iowa Board of Nursing

Number	2001	2006	2011
2704 (7%)	61-70	-	-
7903 (21%)	51-60	56-65	61-70
14012 (37%)	41-50	46-55	51-60
9322 (24%)	31-40	36-45	41-50
4413 (11%)	21-30	26-35	31-40

Nursing Education

Enrollment and retention of students in nursing education programs and their NCLEX passing rates impact the supply of nurses in Iowa. Within the state of Iowa, RN education can be obtained through the community college system and free-standing two-year institutions (ADN) or the 4-year college/university system (BSN). Fourteen of the 15 community colleges, one public university and 15 private colleges/universities have nursing education programs that prepare graduates to take the registered nurse licensure exam. The last of Iowa's Diploma in Nursing programs closed in 1999. Forty-three percent of Iowa's RN's have received their education through Associate Degree programs in Iowa while 23% have received their education from four-year institutions for a BSN. (See Figure #5.) The Iowa Articulation Plan allows for a seamless transfer of credits for graduates from the community college and diploma nursing programs to complete their BSN.

Fig. 5

**Basic and Highest RN
Education***
(*Iowa Board of Nursing - License Renewal Forms)

	Basic	Highest
Diploma	33.0%	26.0%
ADN	43.0%	39.0%
BSN	23.0%	23.0%
Other Bac		7.0%
Masters		6.0%
Doctorate		0.5%

All 15 of the community colleges offer practical nursing education. These programs also offer ADN-completion programs on their campuses. There is one military program in the Des Moines area that offers a practical nursing program.

Overall admission into Iowa’s RN education programs has shown almost a 40% decline between 1993-94 and 1998-99 school year. Part of the decline has resulted from the closing of our diploma programs, with the remainder attributed to a 31% decline in community college enrollment and a 26% reduction being reported by the 4-year institutions. (See Figure #6.)

Fig. 6

RN Admissions to Iowa Nursing Programs*			
*Annual Reports from Iowa Nursing Education Programs			
	1993-94	1998-99	% Change
ADN	1,394	961	-31%
BSN	581	429	-26%
Diploma	330	0	-
Total	2,305	139	-39.60%

Admission to the practical nursing programs reflects a similar decline in enrollments. From 1993-94 to 1998-99 a 13.7% decline in enrollment was noted. Since approximately 66% of the LPN graduates continue their education immediately to become licensed as a RN, this decrease in admissions ultimately impacts the number of RN admissions.

Attrition reflects the number of students that leave nursing education programs for any reason prior to completion. Average rates of attrition vary between 14% for the ADN and PN programs and 22 % for the BSN programs. (See Figure #7.)

Fig. 7

Attrition Rates for Iowa Nursing Education Programs*		
*Annual Reports from Iowa Nursing Education Programs		
ADN	5 Years	14%
BSN	3 Years	22%
LPN	5 Years	14%

With declining admission and double digit attrition rates one should also be concerned about the graduation rates from Iowa’s nursing education programs. Comparing the 1993-94 rates with the 1998-99 data, there is almost a 27 % decrease in both RN and LPN graduates

As the number of students graduating from nursing education programs has decreased, the number of those individuals that successfully pass the National Council Licensure Exam (NCLEX) on the first attempt has also declined. (See Figures #8 and #9).

Fig. 8

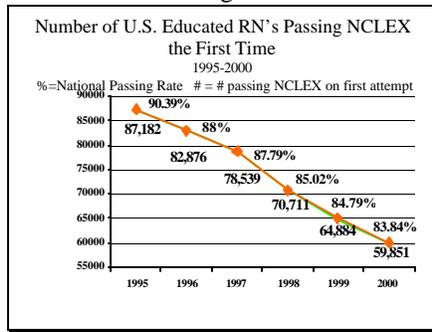
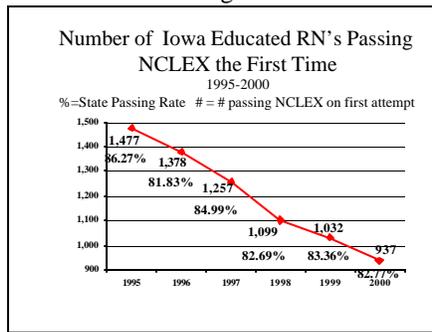
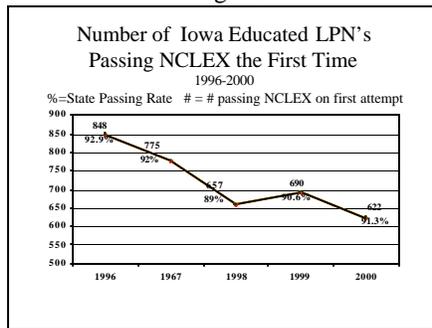


Fig. 9



Since 1995, there has been a 37% decrease in the number taking the exam in Iowa who are eligible for RN licensure following their first attempt on NCLEX. The LPN's have shown a 27% decrease in the number eligible for licensure following their first attempt. (See Figure #10.)

Fig. 10



Nursing Faculty

As the Iowa's nursing workforce ages so does the faculty of the nursing education programs. The Retirement Survey that was developed by the Nursing Supply Taskforce was pilot tested using a convenience sample of full-time and part-time theory and clinical nursing faculty. A copy of the retirement survey can be found in the Appendix. The results indicate that 49% of the respondents plan on retiring within the next 10 years. A concern is the limited number of faculty

that is in the 30-39 age bracket that will be available to take over the vital role of instruction for the future nursing workforce. (See Figures #11 and #12.)

Fig. 11

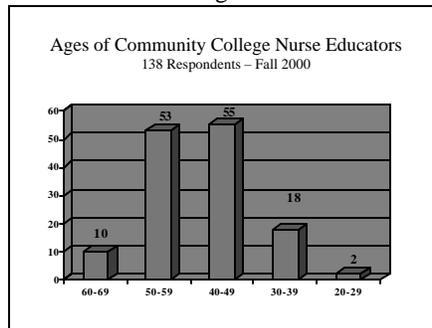
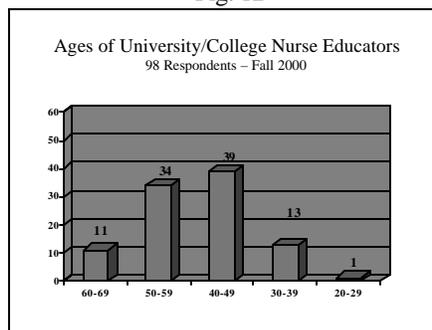


Fig. 12



IOWA WORKFORCE INITIATIVE DEMOGRAPHICS

The population of the United States is graying at an ever-increasing rate. The U.S. Census Bureau projects that the elderly population will grow to 80 million by the year 2050. Health care for older Americans will become an increasingly important issue in American life.

Nurses provide much of the health care for Americans and the oldest elderly (those 85 and older), which require numerous health care services. Generally the aging population is considered to be individuals 65 years of age or older. The State of Iowa is a leader in the nation in the number of elderly residents requiring health care. With its rural demographics, Iowa's elderly citizens are especially prevalent in smaller towns. Eleven percent of the U.S. elderly are farm residents in the Midwest. Understanding the needs of the elderly will guide the nursing profession in providing appropriate care and services to the aged.

Additionally, the nursing workforce of Iowa is aging along with the general population. According to the Iowa Board of Nursing statistics, by 2004, 3,140 nurses will reach retirement

age in Iowa, increasing the annual loss from 568 to 628 nurses per year. Supplying an adequate number of nurses for the healthcare workforce, who are prepared by specialty for needed services, will increasingly become a challenge for Iowa's leaders.

According to the Statewide Iowa Job Outlook 2006 publication prepared by Iowa Workforce Development health services ranks number two of the top fifteen industries expected to create the most new jobs for Iowa's economy. Twenty-three percent of the new jobs created in the 1996-2006 period are expected to be in the professional, paraprofessional and technical occupations. The state estimates there will be 800 job openings annual for registered nurses for this same period.

According to the results of the 2000 Census, Iowa is considered the 30th most populous state in the nation with its estimated population of 2,926,324. Over the last decade the population has increased by 149,493 or 5.4%. Iowa unlike 11 other states has an elderly population (i.e. 65years of age and older) of 14% or more.

Currently Iowa ranks 5th in the nation of population 85 and over. Census officials project that by 2020, the total population for Iowa will reach 3.1 million and the elderly proportion will be equal to 19%. (See figure #13.)

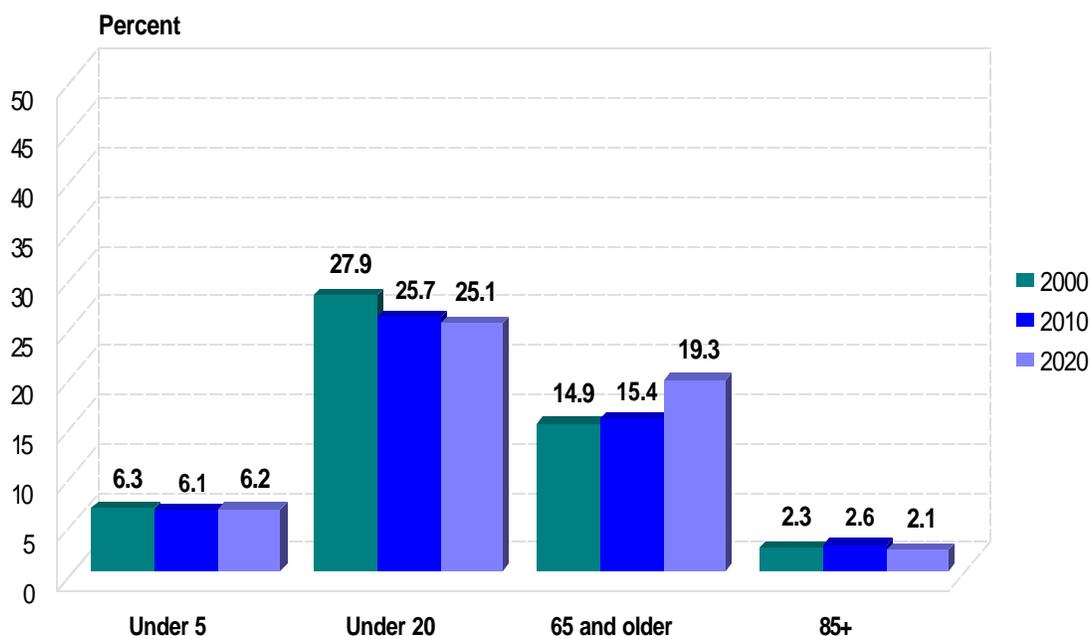
**Figure 13
IOWA ELDERLY POPULATION PROJECTIONS**

AGE	2000	2010	2020
65 - 69	105,507	128,354	194,406
70 - 74	101,655	102,084	152,258
75 - 79	89,799	83,555	105,349
80 - 84	66,918	70,759	74,753
85+	65,802	77,263	76,253
Total Elderly	429,681	462,015	603,019

Source: Woods & Poole Economics, Inc. (projected to 1999 census estimates)

As the Baby Boomer generation (individuals born between 1946-1964) begins to reach the age of retirement the nation will experience a dramatic growth in the elderly population. The outlook for 2020 is that the percentage of people age 65 and older will continue to rise, while those younger than 20 will drop. It's estimated that by 2025 Iowans 65 and older will increase to 22.6%, up from 15.2% in 1995. This would rank Iowa's elderly population as 7th in the nation. (See Figure #14.)

Iowa Population Projections



Source: Woods & Poole Economics, Inc. (projected to 1999 census estimate)

Iowa's urban area (cities with 2,500+ population) is comprised of 127 cities, which includes 61% of the population (1,791,700). The remaining 39% can be found in rural areas and have of these residents almost 58% live in small towns.

Since 1990 Iowa's population has been moving towards a more diverse cultural due to the international migration of Sudanese, Hispanic, Bosnian and other ethnic groups. This is evident by the 73% increase in the amount of minorities overall. The largest growth of 133% occurred in the Hispanic/Latino population. The table below displays the breakdown of the racial distribution.

Fig.15

POPULATION BY MINORITY STATUS		
2000 CENSUS DATA		
	TOTAL	%
TOTAL FOR BOTH SEXES	2,926,324	100.0
WHITE	2,748,640	93.9
BLACK OR AFRICAN AMERICAN	61,853	2.1
ASIAN	36,635	1.3
AMERICAN IND/ALASKAN NATIVE	8,989	0.3
HISPANIC OR LATINO	82,473	2.8
OTHER RACES	38,428	1.3
TOTAL MINORITY	228,739	7.8

Source: U. S. Census Bureau

Iowa's youth population has been declining since the 1980's due to slow down in the number births and youth leaving the state in search of potential opportunities. This reduction also has a profound impact on our labor pool because we lose the potential for these individuals to enter Iowa's already ailing workforce. From 1980 to 2020 Iowa's youth population will steadily decrease over 3% from 9.3% to 6.1% (See Figure #16.)

Fig. 16

Iowa Population Projections for 20-24 Age Group

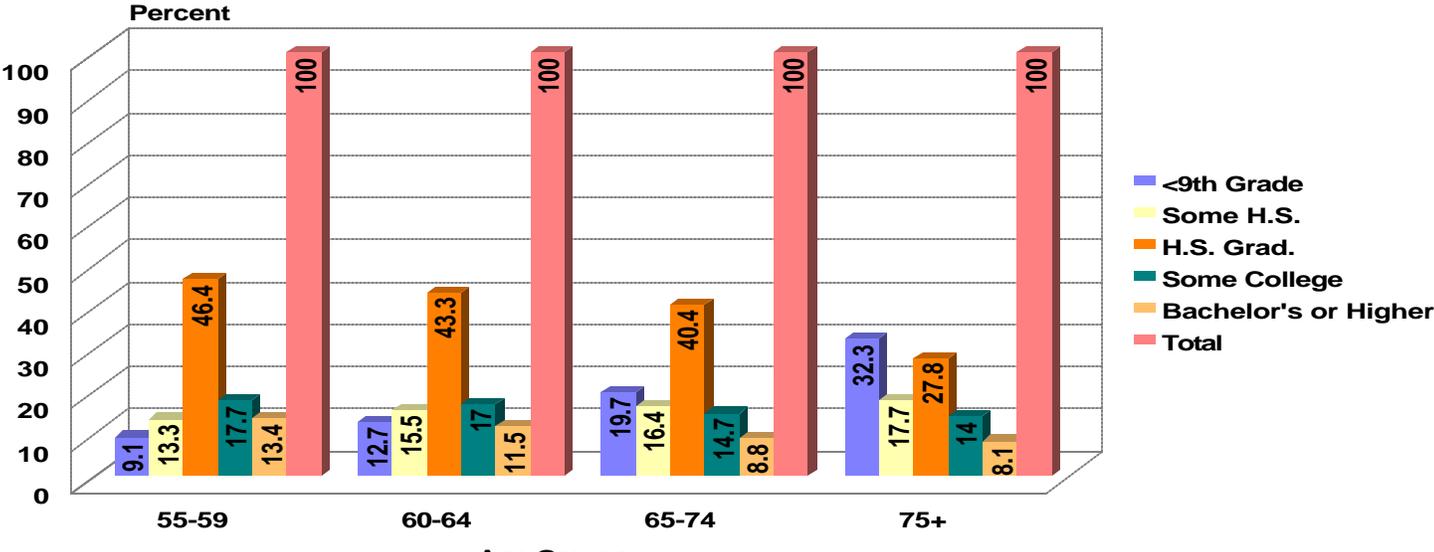
1970	206,290
1980	272,030
1990	197,960
2000	197,090
2010	202,500
2020	191,650

Source: Woods & Poole Economics, Inc. (projected to 1999 census estimates)

Iowa is a state that prides itself in education which has shown to have a positive factor on certain aspects of individuals lives - health, longevity and economics. Iowa's elderly population has become better educated as indicated by the table below from the 1990 Census. Individuals 75 years of age and older were not highly educated, 1/3 had not completed the 9th grade, 28% were high school graduates and 8% earned a post-secondary degree. The portion of elderly graduates from high school and colleges has increased sharply and will likely continue. Individuals age 55-59 have increased their high school graduation rates from 27.8% to 46.4% and bachelor or higher degrees from 8.1% to 13.4%. (See Figure #17.)

Fig. 17

Educational Attainment of the Elderly



Poverty rates for Iowans age 18-64 remained consistent only for the White population. For minorities it is a much more crucial issue. Compared to Whites in the same age group, the Hispanic poverty rate increased 66% and the American Indians/Alaskan Native poverty rate increased 325%. However, the poverty level gap becomes significantly reduced once individuals reach age 75. (See Figure #18.)

Fig. 18

PERCENT OF IOWA POPULATION WITH INCOME BELOW THE POVERTY LEVEL

	Iowa	White	Black	American Indian
Age 18-64	5.8%	5.5%	15.6%	18.7%
65-74	0.7%	0.6%	0.7%	0.7%
75+	0.9%	0.9%	0.5%	0.4%

Source: U.S. Census Bureau

Eight out of ten Iowans age 65-84 will succumb to death via heart disease, malignant neoplasm, or disease of the respiratory system. As Iowans age, mental disorders replace endocrine, nutritional & metabolic diseases as a leading cause of death. There is also a difference in the males and females in that males have a higher incidence of dying from malignant neoplasm, chronic liver and respiratory diseases and unintentional injuries. Females have higher incidences in cerebrovascular disorders, influenza and pneumonia. There are differences within disease of the digestive system, Blacks have a higher rate of diabetes mellitus, Asians have a higher rate of respiratory system. (See Figure #19.)

Fig. 19

LEADING CAUSES OF DEATH IN IOWA'S ELDERLY

65-84 Total of All Causes	13,485	100%
Heart Disease	4,288	31.8
Malignant Neoplasm	3,453	27.8
Disease of the Respiratory System	1,648	12.2
Cerebrovascular Disease	978	7.3
Endocrine, Nutritional & Metabolic Diseases	474	3.5
85+ Total of All Causes	9,805	100%
Heart Disease	3,732	38.1
Disease of the Respiratory System	1,295	13.2
Cerebrovascular Disease	1,090	11.1
Malignant Neoplasm	1,079	11.0
Mental Disorders	456	4.7

Source: Iowa Department of Public Health

The health care services industry in Iowa ranks second in terms of industries with the most new jobs for the 1996-2006 time period. The chart below provides projections on annual openings of the four health care occupations. (See Figure #20.) These occupations hold a significant role in Iowa's economy- the home health aide is the 10th fastest growing occupation in the state, registered nurses and nursing aides respectively are occupations with the 11th and 12th largest annual openings. For occupations requiring a post secondary education, licensed practical nurses have the 12th largest amount of annual openings.

Fig. 20

	Annual Growth	Annual Replacement	Total Annual Openings
RN	450	350	800
LPN	85	140	
Nurse Aide/Orderly	425	285	225
Home Health Aide	195	55	710
			210

Listed in the charts below are the major industries in which the four health care occupations are employed. Approximately 80% of nurses and nursing aides/orderlies can be found in three industries-hospitals, nursing/personal care and office/clinics. The same portion of home health aides is spread across four industries - hospitals, residential care, home health and local government. (See Figure 21.)

Fig. 21

1996-2006 Major Employers

	RN	LPN
1. Hospitals	62.8%	27.3%
2. Nursing/Personal Care	8.6%	42.7%
3. Office/Clinics	8.0%	10.8%
4. Home Health	5.4%	3.9%
5. Elem./Sec. Schools	2.6%	0.7%
6. Residential Care	0.8%	3.7%
7. Federal Govt.	2.4%	1.4%
8. Local Govt.	2.1%	3.2%
TOTAL	92.7%	93.7%

Fig. 21 (Continued)
1996-2006 Major Employers

	NA/O	HHA
1. Nursing/Personal Care	66.7%	0.0%
2. Hospitals	16.3%	14.8%
3. Residential Care	6.4%	15.2%
4. Self Employed/Family Worker	3.1%	5.0%
5. Individual/ Family Services	0.0%	7.1%
6. Job Training, Related Services	0.2%	4.7%
7. Home Health	0.1%	36.2%
8. Local Govt.	4.1%	15.1%
TOTAL	96.9%	98.1%

Source: Iowa Workforce Development

Iowa's workforce is changing and work practices will need to change in order to recruit and retain an adequate supply of workers in the future. Characteristics of the future workforce are listed in Figure #22.

Fig. 22

Iowa's Future Workforce Characteristics

- Low Employment Rate
- Aging Population
- Greater Influx of Immigrants and Minorities
- Professional/Paraprofessional/Technical Occupations are expected to have most job openings
- Alternative Employment Practices Increasing
- Lifelong Learning Required
- Skill Shortages Continue with Rising Wages for Skilled Workers
- Work Hours and Work Patterns Change to Accommodate Underutilized Workers
- Retirement Practices Undergo Transformation

Healthcare Needs

Iowa Administrative Code (641 - Chapter 77) outlines the roles and responsibilities of local boards of health in Iowa. 641-77.3 (137) identifies the overall mission of the boards of health is to safeguard the community's health. This goal is pursued through three core public health functions: assessment, policy development and assurance. These core public health functions are further defined and expanded into the ten essential public health services. Monitoring health status to identify community health problems and developing plans that support individual and community health efforts are two of the essential public health services.

In April 2000, the 99 local boards of health in Iowa submitted an updated community health needs assessment and health improvement plan for each of their counties. *Healthy Iowans 2010*, the health improvement plan for the state, was completed in January 2000 and provided an excellent companion piece to the Community Health Needs Assessments and Health Improvement Plans submitted by all of the counties. Both the county health needs assessments and *Healthy Iowans 2010* can be seen in their entirety on the Iowa Department of Public Health web site: www.idph.state.ia.us.

An overview of the community health needs assessments and health improvement plans identified several factors that are impacting the health status of Iowans. These included lack of knowledge regarding health care, the aging of Iowa's population, and lack of health care providers in many areas of the state.

The health problem priorities identified most often in the needs assessments were:

- substance abuse/alcohol abuse
- tobacco use
- incidence of heart disease and cardiovascular disease
- exposure to lead/lead poisoning
- teen pregnancies
- domestic violence/abuse, including child abuse
- inadequate immunization status of children and adults
- diabetes
- access to health care

Factors identified in the reports relating to access to health care included:

- the rural nature of the state
- the age of both the population and the healthcare workforce
- complexity of health problems, particularly as related to socio-economic and addictive behavior problems
- lack of transportation
- lack of healthcare providers in many areas of the state but most notably in the rural areas
- difficulty in accessing culturally sensitive health care

Assuring adequate numbers of nurses and other healthcare providers in all areas of the state will be critical to addressing the health problem priorities identified in the community health needs assessments as well as being successful in meeting the goals of *Healthy Iowans 2010*.

Employer Demand

The Steering Committee believed it was important to differentiate between nursing need and nursing demand. Need is defined as the number of nurses health care professionals believe are required to provide quality care to patients and is determined by the health care needs of the population. Demand is defined as the number of nurses employers are willing to hire and pay. The two are not always equal. Many factors may contribute to this imbalance between need and demand. One of the hopes of the Initiative is to bring these two factors into balance.

An employer survey was developed to determine nurse demand. Review of data from the Iowa Board of Nursing indicated that 85 % of Iowa RNs and LPNs were employed in four settings; hospitals, long term care, home health/public health, and ambulatory clinics. In October, 2000, 1325 surveys were mailed to these agencies. There were 398 returns for a response rate of 30 %. A copy of the survey for hospitals is in the Appendix.

A number of major issues were included in the survey, including budgeted and vacant positions, estimates of future growth in services and staffing, current and desired educational mix of RN staff, and a variety of questions related to part time staff and strategies used for vacancies. The survey asked for positions rather than FTEs. Since part time positions are critical for many health care organizations, it was determined that positions would be of more value in determining the actual number of nurses needed within the state. Several agencies were unable to report positions and reported FTEs. This may have lead to a lower number of positions being recorded than were actually vacant.

Several of the questions were intended to provide direction for later development of strategies once the initial vacancies were identified. It was believed that input from those closest to the work setting would be helpful as they have first hand knowledge of their personnel and the issues relating to staffing. In addition their experience with vacancies and the methods used to deal with them would also be of value.

Some organizations were unable or unwilling to provide answers to all questions. However, over all the responses were thoughtful and demonstrated concerns as well as frustration with the current nurse supply.

Data from the survey was entered into an Access Data Base. This data base is available on the Iowa Workforce Development Web page. The site can accessed from the Web page of the Iowa Board of Nursing at <http://www.state.ia.us/nursing> or directly at <http://www.state.ia.us.iwd>.

Due to limited funding only one mailing was conducted for hospitals, ambulatory clinics, and home health/public health agencies. Initial responses from ambulatory clinics and home health/public health agencies did not indicate a major vacancy problem. In November the Iowa Hospital Association conducted a survey of all hospitals within the state to identify vacancies in all categories of health care providers. Information on RN, LPN and non licensed vacancies in

those hospitals that responded to the IHA survey but not to the ICON survey was added to the ICON hospital responses, bring the total of hospitals responses to questions on vacancies to 111 or 92%.

The early responses from long term care indicated a serious staff shortage. Initially 112 long term care agencies responded to the survey for a 27% response rate. A second mailing was conducted for those long term care agencies in counties without a response to the first mailing. 147 surveys were mailed in the second mailing with 35 responses, increasing the total response rate to 35%. Only 19 counties with a total of 46 agencies had no representation.

Once the number of vacancies was identified in the responding agencies, vacancies were projected for the total number of agencies in each of the four settings. These projections were developed using the ratio of vacancies for the reported facilities and projecting the same vacancy rate for the total number of agencies in each category. With 111 out of 118 responses from hospitals, this seemed a reasonable projection. Based on the percent of responses and the percent of agencies in each group reporting vacancies, this method again seemed reasonable. Detailed statistical analysis was not available to the Steering Committee due to limited funding and personnel constraints. Anecdotal information from associations for long term care, public health, and ambulatory clinics supports the projections and state they may even be too low.

FINDINGS

Ambulatory Care

Iowa Board of Nursing data indicate 8.1% of the actively licensed RNs are employed in ambulatory care settings. Five hundred sixteen ambulatory clinics were surveyed with 87 returns, for a 14% response rate. Twenty of the respondents reported RN vacancies for a total of 51 RN vacancies. The vacancies were deemed significant since historically ambulatory clinics have had no difficulty filling positions due to the lack of weekend, holiday, or rotation shifts found in hospitals and long term care. Table #1 illustrates the findings from the ambulatory settings.

Home Health/Public Health

5.4% of the actively licensed RNs are employed in home health or public health settings. Two hundred seventy five agencies were surveyed with 84 agencies responding for a 31% return. Twenty three (27 %) of the respondents reported RN vacancies for a total of 50 RN vacancies. Table #2 illustrates the findings for home health/public health agencies.

<p>Table 1 Reported Vacancies Ambulatory Clinics 516 clinics surveyed 87 returns—14% 20 (23%) report RN vacancies 51 RN vacancies. 16 LPN vacancies 23 non licensed staff vacancies</p>	<p>Table 2 Reported Vacancies Home Health/Public Health 275 agencies surveyed 84 returns (31%) 23 (27%) reported RN vacancies 50 vacant RN positions 15 LPN vacancies 99 non licensed vacancies</p>
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Long Term Care

Long term care agencies employ 8.6 % of the actively licensed RNs within the state. Four hundred fourteen LTC agencies were surveyed with 147 returns for a response rate of 36%. Seventy six (52%) respondents reported RN vacancies, for a total of 209 RN vacancies. Table #3 illustrates the findings for long term care.

<p>Table 3 Reported Vacancies Long Term Care 414 agencies surveyed 147 returns – 36% 76 (52%) report RN vacancies 209 RN vacancies 145 LPN vacancies 638 non licensed staff vacancies</p>

Hospitals

62.2 % of the actively licensed RNs within the state are employed by hospitals. One hundred eighteen hospitals were surveyed with 80 (68%) returns. Seventy one (85%) of the respondents reported RN vacancies, for a total of 847 RN vacancies. Table #4 illustrates the findings from hospitals. When data from the IHA survey hospital respondents who had not previously responded to the ICON survey are added to the data, hospital results are as shown in Table #5.

<p>Table 4 Reported Vacancies 118 Hospitals surveyed 80 returns – 68% 71 (85%) Report RN Vacancies 847 Vacant RN vacancies 84 LPN Vacancies 341 Non-licensed Staff Vacancies</p>	<p>Table 5 Reported Vacancies 118 Hospitals Surveyed 111 returns – 92% 1373 RN Vacancies 149 LPN Vacancies 364 Non licensed Staff Vacancies</p>
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Projecting vacancies for all hospitals, home health/public health agencies, long term care and ambulatory clinics was done by using the same vacancy ratio for all settings as reported by the 389 respondents. Projections for the state are shown in Tables #6, #7, and #8.

Table 6 Projected RN Vacancies For Iowa		Table 7 Projected LPN Vacancies For Iowa	
Hospitals	1,460	Hospitals	158
Ambulatory Clinics	303	Ambulatory Clinics	95
Home Health	164	Home Health	49
Long Term Care	589	Long Term Care	408
Total	2516	Total	710

Table 8 Non-Licensed Staff Vacancies		
	Reported	Projected
Hospitals (111)	354	387
Ambulatory	23	136
HH/PH	99	324
Long Term Care	638	1,797
Total	1,124	2,644

Vacancies for all settings include both full time and part time positions. In all settings, part time staff worked an overall average of 20 hours per week.

The non-licensed staff category includes certified nursing assistants, home health aides, and certified medical assistants. Ambulatory settings reported using both non-licensed staff and Certified Medical Assistants, as well as RNs and LPNs. Several indicated a trend to replace RNs with Certified Medical Assistants due to cost.

In an effort to obtain data on future demand, the agencies were asked to project changes to both workload and staffing within the next 5 years. Data in Table #9 illustrates responses. The numbers in the table refer to the number of responses received for each choice.

Table 9 FUTURE CHANGES		
	WORKLOAD	STAFF NEED
INCREASE up to 15 %	139	210
REMAIN SAME	101	102
DECREASE up to 15 %	89	26

Strategies

Vacancy strategies relied heavily on increased hours for part time staff and use of an on-call pool. Reduction in patients was primarily limited to home health/public health agencies that reported restrictions of patients. Several hospitals reported some patient reductions, primarily in critical care areas.

With approximately one fourth of the nursing workforce employed on a part time basis, agencies were asked to identify those strategies they believed would encourage part time nurses to increase their hours of employment. Higher salary and flexible scheduling received the highest ranking, with dependent care third. Unfortunately the survey did not ask for age in the dependency care strategy so it is not known if the need is for children or adult dependents. Tables 10 and 11 illustrate responses to the vacancy strategy questions. The numbers are the number of agencies selecting that strategy.

	VACANCY STRATEGIES			
	AMB	LTC	HH	HOSP
Vol. Overtime	46	109	48	70
Mand. Overtime	11	35	11	20
Temp. Staff	11	55	10	31
Reduce Patients	10	17	38	12
Increase P.T. Hrs.	33	79	33	62
On Call Staff	34	47	22	63

STRATEGIES TO INCREASE PART TIME STAFF HOURS	
Flexible Staffing	135
Higher Salary	157
Reduce Rotation	32
Dependent Care	83
More Full Time Positions	45
Other (Benefits)	14

The need for more full time positions was primarily identified by long term care and ambulatory clinics.

In order to provide guidance in developing strategies to encourage part time staff to increase hours, the survey asked employers why they thought employees worked part time. Over 70 % of respondents cited family responsibilities and personal preference as the first and second reason for part time work. Dislike of week end and holiday rotation was third at 35 %, lack of part time positions and employer preference were fourth at 24% and fifth at 23 % with salary last at 15 %.

Hiring

Difficulty in hiring depended on the setting. While overall more respondents (170) reported that RNs were the most difficult to hire, home health/public health agencies stated home health aides were the most difficult for them to hire. Table #12 illustrates the number of responses for hiring difficulty for each type of staff.

Table 12 #1 Hiring Difficulty RN – 170 Unlicensed staff – 68 Home Health Aide – 48 RN Management – 40 LPN – 20 CMA – 17

Education

Reporting on educational mix of RN staff showed a higher percent of BSN graduates in Ambulatory clinics, followed by home health/public health, hospitals and lastly, long term care. Hospitals and long term care had the highest percent of AD graduates, 61% and 60% respectively, followed by ambulatory care and home health/public health at 43% each. However when employers were asked their desired educational mix, different patterns emerged. Table #13 illustrates the desired RN educational mix as reported in the survey.

		Table 13 Desired RN Educational Staff Mix						
	Maintain	↑AD	↓AD	↑BSN	↓BSN	↑MA	↓MA	
AMB.	59 %	7 %	0 %	13 %	1 %	1 %	0 %	
HH/PH	36 %	2 %	8 %	59 %	0 %	16 %	0 %	
LTC	49 %	18 %	1 %	30 %	0 %	3 %	0 %	
HOSP.	33 %	3 %	8 %	60 %	1 %	17 %	3 %	

Salary

Base or starting salaries were reported for all settings. Starting salaries for RNs varied from a low of \$13.08/hour in ambulatory clinics to a high of \$14.29/hour in long term care. Long term care also had the highest starting salary for LPN staff at \$12.01/hour. Ambulatory care reported the highest salary for non licensed staff at \$8.86/hour and \$9.14/hour for certified medical assistants. Base salary comparisons are illustrated in Table #14.

Facility	Table 14 Average Base Salary			
	RN	LPN	Non Lic.	CMA
Amb.	\$13.08	\$10.30	\$8.86	\$9.14
HH/PH	13.84	10.58	7.51	
LTC	14.29	12.01	8.06	9.00
HOSP	13.46	9.56	7.21	

SUMMARY

The ICON Nursing Workforce Initiative represents a major step in the process of achieving a stable supply of nurses for the citizens of Iowa. That the work has been funded and developed by nurses in Iowa clearly demonstrates nursing's commitment to quality health care for the public and a positive work environment for nurses.

To address data elements that are not currently available, new questions have been added to license renewal forms for RN's and LPN's. Surveys are planned to assist in planning for the retirement of a large number of nurses in the next 10-20 years.

Demographic and workforce data must be updated annually with information from Iowa Workforce Development. As the Department of Public Health monitors the state health care needs, health priorities and nursing's role may be redefined.

To be effective, the employer survey will need to be repeated annually. The survey should be conducted at the same time of year in order to obtain meaningful comparisons. Efforts should be directed at increasing the percent of return from all settings.

At this time, a valid prediction of the amount and type of nursing workforce needed to provide healthcare to the citizens of Iowa cannot be made with certainty. However the work done to date clearly identifies problem areas and the potential for a serious nurse shortage .Major areas of concern include:

A current shortage of nursing staff in Iowa. Although the RN supply has increased by at least 200 annually for the past 9 years and the number of admissions to RN and LPN programs increased during the 1999-2000 academic year, the number of nurses may not be sufficient to meet projected needs.

Large numbers of the current actively licensed RNs and LPNs eligible for retirement within the next 20 years.

Retirement of 49% of RN faculty members within 10 years. To maintain or increase the number of students in nursing education programs, there is a need to support existing faculty and recruit new faculty.

High attrition rates for both RN and PN nursing programs. This may partially be due to the relatively large number of students in nursing programs who attend school on a part-time

basis and/or while employed. Financial support through loan forgiveness programs or availability of additional scholarships may assist in reversing this trend.

Declining NCLEX-RN passing rates. Results are now beginning to return to national passing percentages reversing a decline during the past five years.

Decreased numbers in the 20-24 year age cohort in Iowa. This makes recruitment, the strategy used for past nurse shortages, difficult and limited in effectiveness.

Increased employer demand for baccalaureate prepared nurses. This may require review of the current Articulation Model as well as methods for recruitment and financial support for nurses seeking baccalaureate education..

Staff dissatisfaction with environmental issues in the workplace. Employers, particularly those who need 24 hour/day, 365 day/year staffing, must develop creative strategies to recruit and retain their workforce.

To determine the type and number of nurses required to provide care in the future, an ongoing analysis of health care needs and population change is required.

Iowa is one of nine states in the nation to have 10 or more RNs per 1000 population. Many states face serious nurse shortages. Iowa needs to be prepared for heavy recruitment from other states, particularly states that may mandate nurse/patient staffing ratios.

The information from Phase 1 of the Initiative has been communicated through a press release, a press conference and various presentations. Copies of the press release were also sent to state legislators and the Governor. Forums are planned throughout the state to present data and to obtain input for recommendations from nurses and other members of the health care community and the public.

A copy of the press release issued in March 2001 is in Appendix A.

Phase 2 and Phase 3 of the Workforce Initiative focus on data analysis and development of recommendations to address the issues that have been identified. Initial recommendations developed by the Steering Committee have been submitted to Dr. Stephen Gleason, Director, Iowa Department of Public Health at his request. The recommendations focus on actions that are deemed appropriate at the state level.

Recommendations

1. Consistent with the Health Enterprise mission of assuring that every Iowan has access to quality health care services, establish an Office of Health Professional Development with input from the Departments of Public Health, Economic Development, Education and Workforce Development. The mission of this office is to develop and implement a workforce prediction model that is sustainable over time and to develop strategies that result in the right supply of competent individuals to ensure the public health, safety and welfare of all Iowans. Strategies should address:
 - Recruitment and retention of qualified health care professionals
 - Access to education for those preparing for a health care profession as well as access to continuing educational opportunities for those currently working in health care; thus assuring continued competency
 - Design and testing of alternative health care delivery models
2. Additionally, the Office of Health Professional Development would support state and local initiatives to restructure workplace, improve the working environment and improve employment conditions.
 - Improve workplace environment
 - effective and efficient support systems for health care professionals
 - increased employee decision-making and autonomy
 - processes to facilitate transitions in work environment and other major changes in work life; i.e. work redesign, mergers, continued employment for older health care workforce
 - appropriate health and safety protections; e.g. blood borne pathogens, infection control, ergonomics
 - streamline documentation and reporting requirements that remove health care professional from direct patient care
 - Improve the services/products offered to health professionals/nurses
 - flexible benefit packages; e.g. health insurance for part time employees, retirement
 - improved lifetime earnings
 - career ladder
3. Consistent with both the missions of the Health Enterprise and *Healthy Iowans 2010*, ICON supports the Iowa Department of Public Health in moving ahead with the following action steps identified in *Healthy Iowans 2010*.
4. Establish scholarship and/or loan forgiveness programs for individuals who practice nursing in Iowa utilizing federal, state and local resources.
5. Initiate collaborative action with federal and state agencies to ensure that documentation and reporting requirements are essential to improve patient outcomes and allow nurses and other health care professionals to maximize their time and expertise in providing direct patient care.

While ICON has provided leadership in beginning this Initiative, it will take the action of many people to accomplish the changes needed to ensure Iowa has the nursing workforce needed for the future. The health care industry will need assistance from government and the public. Work environment issues must be identified and improved in each work setting. Education issues must remain a priority for both education and practice. Joint efforts will ensure the nurse of the future is prepared for the nursing responsibilities of the future. Nursing care delivery systems can best be redesigned by both practice and education working together to streamline care so that the critical work of nursing will not be lost.

Nurses have an opportunity to play a key role in these changes. Change does not come easily. Some of the things valued in the past may not survive the future. However, with strong nursing involvement, we can be assured the most important focus for health care will not be lost. The patient is our reason for being, and the patient needs to become the leader of the health care team. Health care professionals are resources to assist the patient in achieving the highest level of health possible.

The profession of Nursing continues to be one of the finest professions available for women or men. The scope of practice is broad, the opportunities many. We must now focus on improving the environment in which nursing is practiced.

As ICON continues to lead this effort, recommendations and actions will be communicated to the nursing community through the web site of the Iowa Board of Nursing (www.state.ia.us/nursing).

Appendix

- A. Retirement Survey
- B. Hospital Employer Survey
- C. Press Release