An Overview of the Nursing Workforce, Educational Capacity and Future Demand for Nurses in the State of Indiana

A Report from the Education Subcommittee on Nursing Data

The Indiana Action Coalition: Transforming Healthcare
The Indiana Center for Nursing
May 15, 2013
Report submitted by the

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Introduction

For twelve of the last thirteen years, nurses have ranked as the most trusted profession by the public (Gallup, 2012). The reasons for this are numerous and are tied to the fact that nurses, as the largest segment of the health care team, play a key role in our nation’s healthcare system. Nurses teach us how to stay healthy; care for us during acute illnesses; help us regain our health; teach us how to manage our chronic illnesses; and help us navigate the healthcare system. In short, nurses are there from our first breath to our last. The Institute of Medicine (IOM) recognized the incredible impact that nurses have on the health of our nation in their report on the Future of Nursing (2010). The IOM report also made several recommendations for insuring that the public’s need for high quality nurses will continue to be met. These recommendations include the following goals:

- Increase the proportion of nurses with a bachelor’s degree to 80% by 2020;
- Double the number of nurses with a doctorate level degree by 2020; and
- Build an infrastructure for the collection and analysis of interprofessional health care workforce data.

The IOM recommendation to increase the proportion of nurses with a baccalaureate or higher degree was made in response to evidence that indicates lower patient mortality when there is a higher percentage of baccalaureate or higher prepared nurses (Aiken, Cimiotti, Sloane, Smith, Flynn & Neff, 2011; Aiken, Clarke, Cheung, Sloan & Silber, 2003; Estabrooks, Midodzi, Cummings, Ricker & Giovannetti, 2005; Kendall-Gallager, Aiken, Sloane, & Cimiotti, 2011; and Tourangeau, et al, 2007. Aiken, et al. (2003) were among the first to report that surgical patients in hospitals with a higher percentage of baccalaureate or higher prepared nurses experienced lower mortality and failure-to-rescue rates. Estabrooks, et al. (2005) examined the
relative effects and importance of nurse education and other variables in predicting 30-day mortality of patients discharged from acute care hospitals. They reported that hospitals with a higher proportion of baccalaureate prepared nurses had lower 30-day mortality rates. Similarly, a study by Aiken, et al. (2011) reported that a 10% increase in total number of baccalaureate educated nurses decreases the odds of patients dying by 4%.

To insure that there will be a sufficient number of appropriately educated nurses to meet healthcare needs of Indiana citizens in the future, it is important to: identify what types of data are currently available on the nursing workforce and what are the most reliable sources for this data; identify and catalog existing data on the characteristics of the current nursing workforce; identify the current educational capacity (enrollment and graduation) for nurses; clarify any gaps between current educational capacity and projected future demand; and identify the projected nursing workforce need.

Shortly after its inception, the Indiana Action Coalition: Transforming Healthcare (IAC:TH), recognized the importance of obtaining current data on the numbers of nurses in practice, the anticipated needs for nurses across Indiana, and the current capacity of Indiana’s nursing education system. This need was also included as a priority goal in the Strategic Plan approved by the Council of Indiana Nursing Deans and Directors in 2011 and was included in the Strategic Plan developed by the Indiana Center for Nursing (ICN) in 2012. Beginning late in 2011, a subcommittee of the INAC: TH Education Committee began to study this issue. This document reports the results of this work and includes an overview of the current nursing workforce in Indiana, an examination of the future demand for nurses, an evaluation of the current educational capacity and a determination of whether educational supply will be sufficient to meet projected demand. The subcommittee was chaired by Dr. Peggy Gerard (Purdue
University Calumet), one of the co-chairs of the Education Committee of the INAC: TH and ICN. Other subcommittee members were Dr. Jane Kirkpatrick (Purdue West Lafayette), Dr. Deb Poling (Indiana University Purdue University at Fort Wayne), Kate Cerbin (Indiana University Northwest), Marta Makielski (Indiana University South Bend), Dr. Jane Walker (Purdue University Calumet), Dr. Ann White (University of Southern Indiana), Dr. Linda Wallace (Indiana University Kokomo), Jewel Diller (IVY Tech), Keith Riessaus (Goodwill Industries of Indianapolis), Kimberly Harper (Indiana Center for Nursing and IAC:TH liaison) and Elizabeth Kiefner Crawford (Indiana State Board of Nursing). To complete this work, subcommittee members conducted an exhaustive review of the literature and available reports on workforce projections and demands, educational capacity and nursing workforce characteristics. The subcommittee also reviewed recommended National Nursing Workforce Minimum Datasets (NMDS) for supply, demand, and education developed by the Forum of State Nursing Workforce Centers (2012), hereafter referred to as The Forum. The Forum developed these minimum data sets to standardize collection of data so that a comprehensive national dataset could be developed. The nursing minimum data set includes data on the various levels of education and practice as well as the variety of settings where nurses are employed. These data are essential for long and short-term planning at all levels to insure adequate numbers of appropriately educated nurses in our workforce.

This report is organized into several sections. In the first section, we provide data on the current nursing workforce and summarize findings from the voluntary Indiana Registered Nurse Re-licensure Survey conducted in 2011. We also present a comparison of the variables on the national NMDS for supply with the information available in Indiana, identify the sources of that information and gaps between recommended variables to be collected and available data.
In the second section, we present information on the current educational capacity of nursing programs including LPN programs and RN programs from AD-to-doctoral levels. We review trends in enrollment and graduation for LPN programs and RN programs at the AD, baccalaureate, master’s degree and doctoral levels. In addition, we compare the variables on the NMDS for education with enrollment and graduation data available in Indiana and make recommendations for future data collection efforts.

The third section of the report focuses on the projected need for nurses by 2020. Because there has not been a recent comprehensive nursing workforce study in Indiana, most of the information we present on projected need comes from data produced by national studies. We also compare existing Indiana data to the NMDS for demand and identify gaps between recommended variables and available data.

The fourth section of the report analyzes whether Indiana will be able to achieve the national goals of having 80% of the nursing workforce prepared at the BS or higher degree in nursing and doubling the number of nurses with a doctoral degree by 2020. The final section of the report summarizes key recommendations for addressing the identified data gaps in the nursing minimum data sets, projections for meeting the national goals for 2020, and the need for obtaining reliable data on projected demand for nurses at all educational levels and in all healthcare service sectors.
Section 1: Overview of the Current Nursing Workforce in Indiana – 2011

Based on the preliminary analysis of responses to the 2011 voluntary Registered Nurse Re-licensure Survey (RNRS) conducted by the Indiana Professional Licensing Agency (IPLA), in coordination with the Indiana State Department of Health, a total of 76,796 RNs responded to the survey who had an active or probationary Indiana license and an Indiana mailing address, up slightly (+1,376 RNs) from 75,420 in 2009. Of the 76,796 RNs licensed in Indiana who responded to the 2011 survey, 53,088 RNs reported actively working in paid nursing positions in Indiana; of this group 2,405 reported that their primary residence is in a neighboring state. The total number of licensed RNs in the state of Indiana as of December 2011 was 93,554. There were an additional 1,730 RN licenses issued to individuals between August and December 2011. These nurses did not complete the survey because they were not required to renew their license during this cycle. This results in a net response rate of 83.6% of active licensees to the RNRS. In terms of diversity in RNs, 94.5% were female and 93.8% were Caucasian. There was very little changed in the RNRS between 2009 and 2011 in terms of the average ratio of RNs to residents in the state of Indiana, which in 2011 was 122 to 1. The range included Crawford County with the fewest nurse to resident ratio of 1 RN per 973 residents to Marion County with a ratio of 1 RN per 68 residents.

Educational Preparation:

Of the 53,088 RNs actively working in paid nursing positions, approximately 49% hold a BSN or higher degree. There is clearly much to do in order to meet the state goal and IOM recommendation of 80% of Indiana’s RNs being minimally prepared at the BSN level by 2020. To meet this goal, an additional 31% or 16,457 of our currently licensed nurses must be educated at the BSN or higher level. Based on a question in the RNRS, 8,500 RNs holding an associate degree (AD) and working in paid positions in nursing indicated they were planning to work
towards a BSN within the next two years. This is half of the total of current AD graduates who would need to go back to school to meet the 2020 goal if the number of nursing positions in Indiana remains unchanged from 2011. Given that the number of nursing positions is projected grow by 26% nationwide, it is likely that the number of additional BSNs needed is actually much higher. In the meantime, Indiana continues to graduate approximately 4300 nursing students from associate degree programs each year who will also need additional education. Figure 1 illustrates the trends in highest education level achieved for RNs in 2001, 2009 and 2011. The only area that did not grow was diploma graduates and this is not unexpected, as there are few diploma programs in Indiana. Table 1 demonstrates that the percentage of AD nurses has stayed fairly consistent from 2001 to 2011, hovering around 45%. The percentage of BS nurses is slowly growing from 34.8% in 2001 to 39.3% in 2011. Similar growth in MS nurses has occurred in this same time frame, with 6.2% in 2001 to 8.8% in 2011.

Figure 1: Comparison of RNs highest degree obtained from 2001, 2009, and 2011
Table 1: Educational Levels of Indiana RNs from 2001, 2009, 2011

<table>
<thead>
<tr>
<th>Highest Degree</th>
<th>2001</th>
<th>2009</th>
<th>2011</th>
</tr>
</thead>
<tbody>
<tr>
<td>Diploma</td>
<td>6,663</td>
<td>4,222</td>
<td>3,662</td>
</tr>
<tr>
<td>Associate</td>
<td>19,879</td>
<td>22,579</td>
<td>25,032</td>
</tr>
<tr>
<td>Bachelor’s</td>
<td>15,745</td>
<td>18,964</td>
<td>22,134</td>
</tr>
<tr>
<td>Master’s</td>
<td>2,828</td>
<td>4,085</td>
<td>4,967</td>
</tr>
<tr>
<td>Doctorate</td>
<td>172</td>
<td>196</td>
<td>282</td>
</tr>
</tbody>
</table>

*missing survey data accounts for discrepancies in number totals

According to the 2011 RNRS, approximately 55% of all working RNs were employed by hospitals; approximately 15% were employed by nursing homes or extended care facilities; 9% were employed in ambulatory care centers; 5% were employed in home health care; and 3% were employed in community and rural health centers. A total of 2.6% of all working RNs were employed in education (up from 2.1% in 2009). Each of the other types of employers accounted for 2% or less of RNs actively working as nurses in paid positions. Of the advanced practice nurses, approximately 69% identified themselves as nurse practitioners (increased from 55% in 2009).

Retirement Projections:

Although it is difficult to fully project retirements, we can state that there are 13,958 nurses (26.1% of the workforce) who will be age 63 or older on July 1, 2020. The percentage of respondents to the RNRS who will be age 65 or older in 2020 (20.1%) was quite close to the percentage of individuals who indicated on the survey that they plan on retiring in the next nine years (19.7%).
The IPLA reported 5,674 new nurses were licensed in 2011; however data on the educational preparation of these newly licensed nurses was not available. If the projections for both retirement and graduation numbers hold constant, only about half of the retiring nurses will be replaced.

Comparison of Recommended Variables on Minimum Nursing Supply Dataset to Available Indiana Data

Most of the variables that the Forum recommended for the NMDS on supply are collected on nurses licensed in Indiana through the RNRS with a few exceptions (see Appendix A for comparison). The RNRS does not currently ask for information on nurse’s year of birth or entry level education. In addition, the RNRS does not include an option for LPN as the initial education in nursing although this is included as an option on the NMDS. In Indiana, a separate survey is conducted on LPNs. There were differences in response options for several variables between the NMDS and the RNRS. In most cases the RNRS offers more response options than does the NMDS for similar questions. Although it may be helpful for the State to obtain more detailed information from the RNRS survey, it may make it difficult to report required data to a national clearinghouse. Additionally, these questions add length to the RNRS. Beginning in 2012, the National Council of State Boards of Nursing (NCSBN) and the Forum will collect nursing workforce supply data from states using the Forum’s Minimum Nursing Supply Dataset (NCSBN and Forum, 2011). To insure that accurate data is reported for Indiana, we recommend that the RNRS survey be revised to at least match the variables and response options on the Minimum Nursing Supply Dataset.
Section 2: Nursing Education

Licensed Practical Nurse Programs

Data on enrollment and graduation from all Licensed Practical Nurse (LPN) programs in Indiana was difficult to locate. Enrollment and graduation data for this report comes from the Indiana Commission for Higher Education (ICHE) for the state supported institutions. These data show a 29.7% decline in enrollment in LPN programs from 2006-2010 (figure 2). A similar trend was noted in graduations with a decline of 31% from 2007 and 2011 (figure 3). No recent national data on LPN enrollment and graduation trends was located.

Figure 2: Enrollment in state supported LPN programs 2006 - 2011
Figure 3: Graduations from state supported LPN programs 2007 - 2012

Associate Degree Programs

Data on enrollment and graduation from associate degree programs in Indiana was also difficult to obtain. Although the annual ICN Survey of Nursing Programs includes associate degree programs, the response rate from associate degree programs has declined over the past two years to 50%. Consequently the data is incomplete and unreliable. Data on enrollment and graduation from ICHE was used in this report; however, the ICHE data includes only the state supported programs. ICHE data shows a fairly steady increase in the number of students enrolled in associate degree programs across the state with a slight decrease in 2009-10. The major increase in enrollment documented in the ICHE data set reflects expansion of associate degree programs across the IVY Tech system. During this time of growth in the IVY Tech system, there was a corresponding closure of AD programs at several four-year campuses, including regional campuses of Purdue, Indiana University, Ball State, Indiana State and the University of Southern Indiana. Overall, the enrollment in state-supported associate degree programs has increased by
12.9% from 2006-07 to 2010-11 (figure 4). The number of graduates from state-supported AD programs increased by 21.6% from 2006-7 to 2010-11 (figure 5). More complete data on enrollment and graduations from associate degree programs in nursing should be available from the Indiana State Board of Nursing beginning in 2013. According to the National League for Nursing, nation-wide enrollments and graduations for associate degree programs from 2006-08 showed similar growth but at a slower rate than occurred in Indiana (National League for Nursing, 2009). No national enrollment data beyond 2008 for associate degree programs was found.

Figure 4: Enrollments in state-supported AD nursing programs in Indiana 2007 - 2010
Baccalaureate Enrollment and Graduation Data

Baccalaureate Entry-level Programs

Based upon data obtain from the American Association of Colleges of Nursing (AACN), the enrollment and graduation rates for entry level BSN programs in Indiana has increased each year from 2009 to 2011. During this time, all 24 BSN nursing programs in the state of Indiana (100%) submitted data to AACN. Figure 6 illustrates the increase in enrollment in baccalaureate entry-level programs in Indiana from 5,518 students in 2009 to 6,203 student in 2011, a 12% increase. From 2010 to 2011, enrollment in baccalaureate entry-level programs in Indiana increased by only 3.8% while nationwide enrollments in BSN entry-level programs increased by 5.1% (AACN, 2012). Although enrollment data has not been collected in Indiana for 2011-2012, AACN recently reported a 3.5% increase in nationwide enrollment in baccalaureate entry-level programs from 2011 to 2012 (“Nursing education enrollment keeps rising in 2012”, 2012.)
More importantly, Indiana had a 7% increase in graduations from entry level baccalaureate programs from 1,543 graduates in 2009 to 1,654 graduates in 2011 (figure 7).

Figure 7: Graduation from BSN Programs in Indiana 2009 - 2011
Unfortunately, the baccalaureate entry-level nursing programs also reported an increase in the number of qualified applicants that were not accepted into these programs. In 2009, 14 of the 24 Indiana baccalaureate entry-level nursing programs reported turning away 1288 qualified applicants. In 2011, the number of qualified students who were not accepted increased to 1586 students. The top two reasons reported by schools of nursing for not admitting qualified applicants are insufficient numbers of nursing faculty and limited clinical sites. Similarly, AACN (2012) reported increases nationwide in the number of qualified students being turned away from baccalaureate-entry programs in nursing due primarily to lack of qualified faculty and resource constraints. It should be noted that while not being able to admit qualified applicants to Indiana nursing programs is of significant concern, the actual number of qualified applicants who were not admitted is difficult to accurately ascertain, as it is impossible to account for students who applied to multiple programs.

*RNBS Completion Data*

The Future of Nursing Report (2010) calls for 80% of the nursing workforce to be prepared at the baccalaureate or higher level by the year 2010. Already some clinical institutions in Indiana are requiring a BSN for their nursing employees. This policy change is stimulating renewed interest in RN to baccalaureate (RN to BS) programs. According to AACN data, Indiana has increased enrollments in RN to BS programs. One hundred percent of the RN to BS programs in Indiana reported enrollment and graduation data to AACN from 2009 -2011. According to these data, enrollment in RN to BS programs in Indiana increased from 2,232 in 2009 to 2,715 students in 2011; a 22% increase (Figure 8). Although this increase shows a positive trend in Indiana, the percent change is much lower than increases reported nationwide. From 2010 to 2011, enrollment in Indiana’s RN to BS programs increased by 7.5% compared to
a 15.8% increase nationwide (AACN, 2012). A recent news release from the American Association of Colleges of Nursing reported a 22% increase in RN to BS enrollments nationwide from 2011 to 2012 (“Nursing education enrollment keeps rising in 2012”, 2012). Based on these national data, Indiana is behind in enrollment growth for the RN to BS. It is important to note that these data may be under reporting the actual number of Indiana nurses who are enrolled in RN to BS programs since these data do not include the number of Indiana nurses who are enrolled in RN to BS programs offered by out-of-state online universities.

Figure 8: Enrollment of RN to BS Students in Indiana 2009 - 2011

The number of graduates from RN to BS programs in Indiana increased from 827 in 2009 to 997 in 2011; a 21% increase (figure 9).
Figure 9: Graduation from RN to BS Programs in Indiana 2009 - 2011

Master’s Degree Programs: Enrollment and Graduation

Data related to Master’s and Doctoral Degree programs were obtained from the AACN surveys. A total of 15 of 17 Indiana programs submitted information between the years of 2009 through 2011. According to these data, enrollment in Indiana’s master’s degree programs increased from 2235 students in 2009 to 2477 students in 2010. This number fell slightly in 2011 to 2434. However, the net increase between 2009 and 2011 is 8.9% (figure 10). Although this increase shows a positive trend in Indiana, the percent change is much lower than increases reported nationwide. From 2009 to 2011, enrollment in master’s programs nationwide increased by 23.3% (AACN, 2010 and 2011).
The trend in graduations from Indiana’s master’s programs mirrored the Indiana enrollment trend. In 2009, the number of graduates reported in the AACN dataset was 568 and increased to 648 students in 2010; a 14% increase. In 2011, this number fell to 618 graduates, resulting in a net increase of 8.8% in graduates between 2009 and 2011 (figure 11). Despite this overall net increase in master’s graduates, the percent growth in master’s graduates in Indiana is substantially lower than growth reported nationwide. According to AACN, graduations from master’s degree programs nationwide increased by 28.4% from 2009 to 2011 (AACN, 2010 and 2011).
These data provide only an estimate of the actual numbers of Indiana nurses enrolled in and graduating from Master’s degree programs. Data on the number of Indiana nurses who are enrolled in master’s programs offered by out-of-state online universities (such as the University of Phoenix) are not available. However, when analyzing master’s level education trends, it is apparent that enrollment and graduation numbers have increased during the past three years. If enrollees and graduates from out-of-state online universities could be identified, these figures are expected to be higher.

Another emerging trend occurring in master’s education in the state of Indiana relates to inadequate numbers of seats in the state’s master’s degree programs. In 2009, three schools reported turning away 388 qualified applicants to Indiana nurse practitioner programs and 21 qualified applicants to other Indiana masters in nursing programs. In 2011, six schools reported turning away applicants to Indiana master’s programs. A total of 300 qualified applicants to Indiana nurse practitioner programs (six schools reporting) and five qualified applicants to other masters in nursing programs were not accepted. The primary reasons reported by Schools of
Nursing for not admitting qualified applicants are insufficient numbers of faculty, preceptors and clinical sites.

It is also important to note that the true number of qualified applicants who were not accepted is difficult to ascertain, because potential students may apply to more than one program and thus could be counted more than once. The fact remains that Indiana nursing programs are turning away qualified applicants for master’s education in nursing. Similar trends have been reported nationally. In 2010, a total of 4,149 qualified applicants to NP master’s programs were not accepted while an additional 4,342 qualified applicants to other master’s programs were not accepted (AACN, 2010). The numbers of qualified applicants not accepted increased in 2011. A total of 8,753 applicants were not accepted into NP programs while an additional 4,445 qualified applicants to other master’s programs were not accepted (AACN, 2011). Similar to what was reported by Indiana schools, major reasons for not accepting qualified applicants nationally were an insufficient number of faculty, insufficient clinical sites, and insufficient clinical preceptors (AACN, 2010 and 2011).

Doctoral Degree Programs: Enrollment and Graduations

There are two types of nursing doctoral education programs: the practice doctorate, called the Doctor of Nursing Practice (DNP) and the Research Doctorate (PhD). Both programs are available in Indiana. There has been a dramatic growth in the number of DNP programs in Indiana since the first program opened in 2005. During the period of 2009-2011, enrollment in the state’s DNP programs rose 67% (Figure 12). Since these data were collected, three more programs have launched in Indiana, bringing to nine the number of DNP programs in the state. It is expected that enrollments in DNP programs will continue to increase. Although there has been growth in the number of DNP programs Indiana and increases in enrollment, this growth lags behind national trends. From 2010 to 2011, enrollment in DNP programs in Indiana
increased by 19% in comparison to a 28.9% increase nationwide (AACN, 2012). The national trend of increasing enrollments in DNP programs has continued in 2012 with a 19.6% increase being reported nationwide (“Nursing education enrollment keeps rising in 2012”, 2012.).

Figure 12: Enrollment in Indiana DNP Programs 2009 - 2011

The numbers of graduates from DNP programs has risen in a corresponding way. In 2009, there were eight graduates from DNP programs compared to 32 in 2011 for a 300% increase (figure 13).

Figure 13: Graduation from Indiana DNP Programs 2009 - 2011
With respect to DNP programs, it appears that there may be an inadequate number of seats for qualified applicants. According to the AACN report, in 2010 there were 9 qualified applicants denied admission into Indiana’s DNP programs and 1 denied admission in 2011. Schools of Nursing reported that an insufficient number of qualified faculty was the primary reason these applicants were not admitted.

At the present time, there is only one PhD program in Nursing in the state of Indiana. Indiana University at IUPUI grants the PhD. Data from AACN indicates that the number of enrolled PhD students in Indiana has decreased between 2009 and 2011. The number of enrollees was 51 in 2009 compared to 38 in 2011 for a net decrease of 25% (figure 14). From 2010 to 2011, enrollment in the PhD program in Indiana decreased by 23 students (38%) while in contrast, enrollment in PhD programs nationwide increased by 7.9% (AACN, 2012). A recent news release from AACN reported a further enrollment increase of 1.3% in PhD programs nationwide from 2011 to 2012 (“Nursing education enrollment keeps rising in 2012”, 2012).

Graduations from Indiana’s PhD program have remained flat at 10 graduates for each of the three reporting years. According to the AACN report, no qualified applicants have been denied admission to the PhD program from 2009 to 2011.
Issues in Graduate Education in Indiana

With respect to the issue of turning away qualified applicants from the state’s graduate nursing programs as described above, several factors exist that may contribute to this problem and could affect the state’s ability to educate nurses at all levels. These concerns include: faculty vacancies; inadequate state opportunities for doctoral education; and the proliferation of online out-of-state graduate education programs.

*Faculty vacancies* are cited by Indiana Schools as one reason for turning away applicants to all levels of nursing programs and inadequate faculty limits program growth. The national AACN special survey on vacant faculty positions for academic year 2012-2013 (Fang & Li, 2012) indicates that approximately 90% of the programs who are seeking full-time faculty required or preferred an earned doctorate. The survey reports that the Midwestern states have the second highest full-time faculty vacancy rate (11.4%) in the nation as compared to the Western (12.0%), North Atlantic (9.8%), and Southern (9.1%) regions of the US for schools reporting vacancies.
It is significant to note that master’s and DNP programs that educate advanced practice nurses (APN) which includes nurse practitioners, clinical nurse specialists, nurse midwives, and nurse anesthetists require faculty to hold the advanced practice credentials that match the program’s specialty. In trying to fill faculty vacancies in APN programs, schools of nursing are in direct competition with other employers of APNs and in many instances are unable to attract quality candidates due to salary disparities. In addition, APN faculty must maintain practice expertise in order to keep the clinical certification that qualifies them for their faculty roles. Academic models that allow faculty to maintain their practice skills are essential.

Inadequate state opportunities for doctoral education have a direct impact on the supply of nursing faculty. Lack of production of adequate faculty to replace those expected to retire in the next 10-15 years has major implications for the ability of Indiana to educate enough nurses (at all program levels) to meet the needs of our citizens.

To better understand how Indiana compares to other states in generating nursing doctoral graduates, we selected the four states (Washington, Massachusetts, Arizona, and Tennessee) whose population is within 250,000 of Indiana’s 2010 census (Bates & Spetz, n.d.). When comparing the numbers of both practice (DNP) and research (PhD) doctoral program graduates from Indiana with these states (Figure 15) it is quite apparent that Indiana is underperforming.
This is a troubling report, as these data suggest a potential negative impact on future nursing faculty numbers.

Research-intensive universities typically require research doctorates (PhDs) for their tenure–earning faculty. In order to meet the burgeoning need, Indiana needs to expand opportunities to generate more graduates holding a PhD. At the present time, nurses living in Indiana who wish to pursue an in-state research doctorate in nursing are limited to one program, or else must enroll in an out-of-state program or a distance program, incurring more cost to achieve their educational goal. The other option (readily observed in many Indiana schools of nursing) is the pursuit of a doctorate from other disciplines.

Graduates from practice doctorates (DNPs) are also essential to assume faculty and preceptor positions. It is crucial that additional opportunities for practice doctorate programs be made available, and data continue to be assessed on the outcomes of the rapid growth of DNP programs in the state.
Nursing Faculty

The only source of data available on nursing faculty across all nursing programs in Indiana is the ICN (formerly the Indiana Nursing Workforce Development Coalition) annual Statewide Survey of Nursing Programs. This survey has been conducted for approximately 10 years and includes questions related to faculty vacancies, reasons for difficulty hiring faculty, faculty composition (full-time vs. part-time), faculty age ranges by employment category, and academic degrees held. In addition, this survey collects information on the reasons for turning away qualified students at all program levels. Initially, the survey included only programs preparing registered nurses and advanced degrees, but beginning in 2009, LPN programs were also surveyed. Response rates from the schools who offer baccalaureate and higher degree programs have consistently been much higher (ranging from 87 to 100%) than response rates from those schools offering AD (ranging from 50% to 100%) and LPN programs (ranging from 29% to 54%) in the state. Despite this inconsistency in response rates from the schools, age of faculty and reported difficulty recruiting master’s and doctorally prepared faculty have remained fairly consistent over the past three years.

According to the ICN surveys (2008 – 2011) vacancies for full-time faculty in Indiana remained fairly consistent at between 32 to 36 positions each year for all BS and higher degree programs until 2011. The number of vacant full-time faculty positions rose sharply in 2011 to 43 positions; a 7% vacancy rate. As approximately 40% of full-time faculty members teaching in Indiana nursing programs are 56 years of age and over, the expectation is that the vacancy rate for full-time faculty will increase significantly through 2020. This high number of projected retirements for full-time faculty is particularly troubling. Vacancies for part-time faculty have
been much lower and actually decreased from 12 in 2008 to 3 (1% vacancy rate) from 2009 - 2011.

At the national level, the AACN surveys have reported vacant faculty positions and unbudgeted faculty positions are a challenge to program sustainability and growth. Since 2008, over 94% of nursing programs responding to the annual ICN Statewide Survey of Nursing Programs have reported it is somewhat to very difficult to recruit qualified master’s prepared nurses and 100% have reported it is somewhat to very difficult to recruit doctorally prepared nurses to faculty positions. This faculty shortage will significantly reduce the number of nurses that can be educated and will contribute to the significant nursing shortage in Indiana projected by 2020.

Although we were not able to locate national reports for faculty teaching in AD and LPN programs in Indiana, we located reports from AACN for 2012-13 on faculty positions in baccalaureate or higher degree programs (Fang & Li, 2012). The results of this report illustrate trends in faculty vacancies similar to those reported in Indiana from the ICN Statewide Survey of Nursing Programs (2008 to 2011). The AACN reported a 7.7% vacancy rate in 2011-12 for full-time faculty positions, similar to the reported vacancy rate in Indiana, and a 6.7% vacancy rate in 2011-2012 for part-time faculty. Fifty six percent of the full-time vacancies reported were for positions requiring an earned doctoral and another 32% were for positions in which a doctorate was preferred (Fang and Li, 2012). Of the 103 schools that had no vacant positions but indicated needing more faculty, 64.1% had insufficient funds to hire new faculty, over 35.9% reported difficulty recruiting qualified faculty due to competition for jobs with other marketplaces, and 26.2% reported that there are not qualified applicants in their geographic area (Fang and Li,
2012). According to the national survey, the most critical issues faced by schools of nursing (N=659) related to faculty recruitment and retention are listed below:

- Limited pool of doctorally prepared faculty (32.9%)
- Noncompetitive salaries (27.6%)
- Finding faculty with the right specialty mix (19.0%)
- Finding faculty willing/able to teach clinical courses (4.9%)
- Finding faculty willing/able to conduct research (5.8%)
- High faculty workload (3.2%)

The number of nursing faculty expected to retire also has implications for the future of both undergraduate and graduate education in nursing. Among the critical issues identified regarding faculty recruitment (Fang & Li, 2012) is the growing number of faculty retirements and difficulties in finding qualified replacements for retired faculty. The 722 institutions responding to a 2012 AACN survey reported their doctorally prepared faculty as 49.1% of their total faculty numbers. Of these, 74.6% held doctorates in nursing and 25.4% held doctorates in other fields (Fang, Li, and Bednash, 2013). In addition, the mean age of nursing faculty continued to increase between 2011-2012 and 2012-2013. The mean age of full-time doctorally prepared nursing faculty with the rank of professor increased from 61 to 61.3 years, the mean of age associate professor increased from 57.5 to 57.7 years and the mean age for assistant professors remained at 51.5. Although master’s prepared faculty are slightly younger than their doctorally prepared counterparts, similar increases in mean age were noted. For master’s prepared faculty, the average ages for professors, associate professors and assistant professors were 57.2, 56.8 and 51.2 respectively (Fang, Li, and Bednash, 2013). Over the next 5 years,
many of these faculty will reach 62.6 years, the average age of nurse faculty at retirement (Yordy, 2005).

Comparison of Recommended Variables on Minimum Nursing Education Dataset to Available Indiana Data

Most of the variables on the Minimum Nursing Education Dataset (MNED) are available through the ICN’s annual Statewide Survey of Nursing Programs (see Appendix B). However, the response rate to the ICN survey for all programs has decreased over the past two years, with response rates for the 2011 survey of 86.96% for baccalaureate and higher programs, 64% for AD programs and 28.57% for LPN programs. In order to insure that the data collected is valid and reliable, a higher response rate is needed. There is significant cost related to this method of obtaining data (administering this survey, insuring a high response rate and analyzing the data). A more feasible and possibly less costly alternative going forward may be to obtain data from other surveys that are being conducted by the state and other professional nursing organizations. For example, data on enrollment, graduations and faculty characteristics for LPN and AD programs could be obtained from the annual online Indiana State Board school survey while data on enrollment and graduations and faculty characteristics for baccalaureate and higher degree programs could be purchased from the American Association of Colleges of Nursing each year. Since the response rates to both the Indiana State Board of Nursing Survey and the AACN surveys are very high, the use of data from these sources would provide a reasonable alternative to the annual Statewide Survey of Nursing Programs.
Section 3 Nursing Workforce Demand

Projected Needs for Registered Nurses at the National Level

    Health care is undergoing unprecedented change that will directly impact the need for registered nurses and advanced practice nurses. In February 2012, the Bureau of Labor Statistics (BLS) published a report projecting that the number of employed nurses will increase from 2.74 million in 2010 to 3.45 million by 2020. At the national level, approximately 712,000 or 26% more nurses will be needed to fill new positions in the next eight years. This report also predicts that an additional 495,000 nurses will be needed to replace nurses who leave the workforce, bringing the total number of new nurses needed to 1.2 million by 2020.

Projected Needs for Registered Nurses in Indiana

    Juraschek, Zhang, Ranganathan and Lin (2012) completed a state-by-state study of projected need for nurses. Based on their projections, Indiana will need 11,074 additional nurses by 2030. According to the Indiana Department of Workforce Development (INWD) “Hoosiers by the Numbers” (2012) a total of 57,312 registered nurses (RN) were employed in Indiana in 2010. INWD predicts that the number of RNs employed in Indiana RNs will grow to 70,110 by 2018, a 22.1% increase. Similar growth is predicted for employed LPNs.

    The number of employed licensed practical nurses in the U.S. is expected to grow from 753,560 in 2010 to 909,160 by 2018, a 20.6% increase (INWD, 2012). In Indiana, the numbers of employed LPNs/LVNs are expected to increase from the 8,910 reported in 2010 to 11,112 by 2018, an increase of 2,202 (19%) practical or vocational nurses (INWD, 2012).
Obtaining information for this report regarding the numbers of nurses employed in all areas of nursing, the numbers recruited, hired, retired and relocated was difficult, and required the review of multiple data sources from multiple agencies and government offices.

According to the Forum of State Nursing Workforce Centers (2009), statistics on the nursing workforce demand should include regular collection of hospital staffing information, preferably collected by one state-wide source. Data collected should include at a minimum 80% of the hospitals. The Forum also recommends that the information collected include nurse staffing for all nurse practice types; licensed practical or vocational nurses and associate and bachelor prepared registered nurses. As the education and scope of nursing practice advances, the categories of advanced nurse practice should include nurse practitioners, certified registered nurse anesthetists, certified nurse specialists and certified nurse midwives. The Forum also suggests that these data be made available to all stakeholders.

**Comparison of Recommended Variables on Minimum Nursing Demand Dataset to Available Indiana Data**

We were not able to locate current employment data on licensed practical nurses and advanced practice nurses in Indiana. Specialty organizations contacted for advanced practice nurses practicing in anesthesia (CRNA), certified nurse specialists (CNS) and certified nurse midwives (CNM) were unable to provide the requested workforce information. What follows is a report of the best information that the taskforce could compile. Data was pulled from a variety of sources to understand the employment status of nurses in Indiana.

Information was only available on the numbers of full-time equivalents currently occupied for acute care hospitals from the Indiana Hospital Association (IHA) based on surveys
they conduct quarterly to track staffing needs. Of the 73 reporting hospitals, current vacancy rates of registered nurses climbed from just under 4 FTEs to over 6 FTEs between the third quarter report of 2010 and the current, second quarter report for 2012. Figure 16 demonstrates the turnover rate reported by IHA. Of significance is the relatively flat rate of turnover between 2009 and the second quarter of 2012. These dates coincide with the downturn of the national economy.

Figure 16: Annualized Turnover Rate in Indiana Hospitals

Data on the numbers of full-time equivalent nurses currently employed in ambulatory health care facilities were available only from the respondents to the IHA quarterly surveys and are therefore incomplete (see Table 2 below).
Table 2: Full-time equivalent employees in Hospitals, Ambulatory Healthcare Facilities and Nursing and Residential Care in Indiana (2012)

<table>
<thead>
<tr>
<th></th>
<th>FTE LNAs/CNAs</th>
<th>FTE LPNs/LVNs</th>
<th>FTE RNs</th>
<th>FTE APNs</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Hospitals</strong></td>
<td>489</td>
<td>4,489</td>
<td>37,978</td>
<td>None reported</td>
</tr>
<tr>
<td><strong>Ambulatory health care facilities</strong></td>
<td>No category count</td>
<td>4,800</td>
<td>No category count</td>
<td>None reported</td>
</tr>
<tr>
<td><strong>Nursing and residential care</strong></td>
<td>5,007</td>
<td>8,910</td>
<td>3,223</td>
<td>None reported</td>
</tr>
</tbody>
</table>

There were no other data located for the other variables included on the National Nursing Centers Minimum Nursing Supply Dataset (see Appendix C).

The absence of available data on current and future supply of nurses in Indiana needs to be remedied. As recommended by the Forum of State Nursing Workforce Centers (2009), the collection and sharing of nursing workforce data must be standardized to provide information to better anticipate workforce needs. The Center recommends data collection at regular and expected intervals. All agencies and stakeholders using and evaluating the information need to know when and in what interval the data will be collected and communicated.

Information from a wide source of employers needs to be collected. As nurses work in a variety of settings, including hospitals, ambulatory out-patient facilities, nursing and residential care facilities and home-based nursing centers, schools, government offices, social agencies and other non-health care facilities, gathering these data will be challenging. Information from all nursing work locations should be collected and reported to the agency that will serve as the repository for these data. In all likelihood this would be the Indiana Center for Nursing.
The various levels of nurse licensing and practice need to be accounted for separately. Identification of data from the two entry-level registered nurse degrees, AD and BSN, needs to be collected and evaluated separately. The licensed practical nurses, LPN and LVN also need to be accounted for in the workforce information, as the change in primary care and health care models will likely impact their practice and the need for these employees.

The hourly increment of contracts of employment for all nursing groups is important data to understand. The Nursing Workforce Center has requested reporting and monitoring of this information. The employment status stating whether these are regular full-time or part-time practitioners has also been recommended in the data set for collection and monitoring workforce supply and demand. The full-time and part-time equivalence calculations need to be standardized so that the contracted employment work schedules are similar and thus can be directly compared.

As the education and scope of practice for nurses continues to evolve, the employment locations and types of these practice varieties need to be included in the data collection and reports. Advanced practice nursing roles need to be identified by type and recorded and communicated separately from the licensed registered nurse. It is yet to be determined what the most efficient method will be for gathering these data; however, complete data is essential for planning for future roles and workplace needs. Data on nurses employed in roles such as administration, education, or other nursing roles also should be captured. As the roles of nurses and their practice specialties evolve, data collection will need to keep pace with the changes.

“Measures that do not accurately reflect the intended construct can significantly impact conclusions and inferences” (Unruh, Russo and Jiang & Stocks, 2009, p. 68). To this end, the collection of nursing employment, potential hiring needs, layoff possibilities, and reduction in force that changes the need for nursing employees must be reliably reported and evaluated for
potential nurse demands and replacement. In their report, Unruh et al. identified five exemplar states (Arizona, Pennsylvania, Tennessee, Virginia, and West Virginia) that have initiated thorough reporting and communication of all of these aspects of nursing workforce measures. Indiana can incorporate some or all of the procedures and processes used by these exemplar states. The National Forum of State Nursing Workforce Centers is working toward a national database for nursing workforce statistics. By using the same minimum data set criteria as defined at the national level for supply, demand, and nursing programs, Indiana will be able to compare its standing and progress with other states as well as the nation. These data are essential to assure that there are adequate numbers of well-prepared nurses to provide optimal care for the populace in Indiana.
Section 4: Gap Analysis

Gap Analysis: 80% of nurses hold baccalaureate degree or higher by 2020

One of the goals set forth in the IOM report on the Future of Nursing (2010) was to increase the proportion of nurses with a bachelor’s degree to 80% by 2020. Using data from the Registered Nurse Re-licensure Survey of 2011, the 2011 AACN Survey of Nursing Programs and recently released projections from the Indiana Workforce Development Center (IWDC) on RN positions by 2020, we compared the projected need for nurses with baccalaureate or higher degrees to current working RNs with baccalaureate degrees or higher to determine how many additional nurses with BS or higher degrees must enter the workforce by 2020.

As illustrated in Figure 17, the IWDC projects that approximately 62,119 RNs prepared at BSN or higher levels are needed to meet the goal of 80% of BSN plus nurses working in the state by 2020. If graduations from BS entry-level and RN-to-BSN programs remain stable at 2011 levels, only 44,598 nurses will hold BS or higher degrees by 2020. Schools of nursing will need to graduate approximately 17,521 total or an additional 1947 new BSN graduates each year from BSN entry-level or RN-to-BSN programs in order to meet the goal of 80% RNs with baccalaureate or higher degrees.

Enrolling and graduating these additional students will be difficult if not impossible to achieve due to limited numbers of faculty and availability of clinical placements. Results of the ICN Statewide Survey of Nursing Programs indicate that large numbers of master’s and doctorally prepared faculty are predicted to retire over the next several years. In addition, there are insufficient numbers of RNs holding master’s and doctoral degrees who are interested becoming nurse educators. Another challenge is the low salaries and the lack of funding available to Schools of Nursing to hire the additional nursing faculty needed to expand programs.
The goal of 80% of RNs with BS or higher degrees by 2020 can only be achieved if substantial resources are directed toward increasing the number of qualified nursing faculty and increasing capacity of existing BS and higher degree programs.
Figure 17: Gap Analysis - Education Projections to Reach Target of 80% BSN + by 2020

Current Number of BSN + Nurses in Indiana:

26,013*

*Represents 2011 re-licensure data reporting that 49% of the 53,591 nurses responding to the survey working in Indiana report obtaining a BSN degree or higher.

Projected BSN Graduates Between 2011 and 2020:

23,859***

***Based on multiplying the number of 2011 entry-level BSN and RN completion BSN graduates (2651) by 9 years.

Predicted # of BSN + Nurses working in Indiana in 2020:

20,739**

**Prediction obtained by subtracting 49% of the total number of nurses indicating they would be 65 or older on 6/1/20 from the current number of BSN + nurses.

Projected Number of BSN + Graduates (Between 2011 and 2020) and BSN + Working Nurses in 2020 = 44,598

Projected Number of BSN + Nurses Needed in Indiana by 2020:

62,119****

****Based on IOM recommendation of 80% of predicted number of nurses needed in Indiana in 2020 (77,649)

Projected Shortfall Between Number of BSN + Nurses Needed in Indiana by 2020 and Projected Number of BSN + Graduates and BSN + Working Nurses in 2020 = 17,521
Gap Analysis: Double the number of nurses with doctorates by 2020

The IOM report on the Future of Nursing also established a goal to double the number of nurses with doctoral degrees by 2020. Using data from the Registered Nurse Re-licensure Survey of 2011 and the 2011 AACN Survey of Nursing Programs, we analyzed the gap between the estimated number of doctorally prepared RNs who will be practicing in Indiana in 2020 and the number of doctorally prepared RNs in Indiana needed to achieve 2020 goal to double the number of nurses with doctorates. The following paragraph summarizes the data we used to complete this analysis (see Figure 18).

Of the nurses who responded to the 2011 RNRS survey, a total of 268 nurses working in paid positions reported they held doctorates in nursing. Based on that number, a total of 536 doctorally prepared nurses should be practicing in Indiana by 2020 to achieve the national goal of doubling the number of nurses with doctorates. Of the 268 doctorally prepared nurses who responded to the 2011 RNRS survey, 105 indicated they planned to retire in the next 9 years. Therefore, to achieve the goal of 536 doctorally prepared nurses by 2020, a total of 373 additional doctorally prepared nurses will be needed. If graduations from PhD and DNP programs remain stable at 2011 levels, a total of 378 students should graduate from DNP and PhD programs in Indiana by 2020. If all of these graduates remain in Indiana, the number of new doctorates will be slightly more than is needed to achieve the goal of 536 nurses with doctoral degrees by 2020.

Although Indiana will most likely be able to graduate a sufficient number of new nursing doctorates to achieve the goal of doubling the number of doctorates by 2020, the number of nurses with doctorates in Indiana is still low in comparison with other comparable states. In addition, since the majority of new doctorates will hold DNP degrees, it is likely that many of
them will practice as APNs rather than in full-time nursing faculty positions. This reflects a shift in the major practice setting for nurses with doctorates from 2011 when approximately 66% of the nurses with doctorates reported working in nursing education. Therefore, despite reaching the 2020 goal for doubling the number of nursing doctorates, the shortage of doctorally prepared nursing faculty in Indiana will remain and may become more serious. The faculty shortage will limit production of bachelor’s and master’s prepared nurses at the same time the demand for nurses with these degrees will be growing.
Figure 18: Gap Analysis: Education Projections to Reach Target of Doubling Nurses with Doctorates by 2020

**Current Number of Nurses with Nursing Doctorates in Indiana: 268***

*Represents 2011 re-licensure data reporting that 268 of the 53,591 nurses responding to the survey working in Indiana reported having a doctorate in nursing.

**Projected Doctorally Graduates Between 2011 and 2020: 378***

***Based on multiplying the number of 2011 DNP and PhD graduates (42) by 9 years.

+ 

**Predicted # of Nurses with Doctorates in Nursing Working in Indiana in 2020:**

163**

**Prediction obtained by subtracting 39.2% of the total number of nurses with doctorates in 2011 who indicated they would retire by 2020 from the current number of nurses with nursing doctorates.

= 

**Projected Number of DNP and PhD Graduates (Between 2011 and 2020) and Working Nurses with Nursing Doctorates in 2020 =**

541

**Projected Number of BSN + Nurses Needed in Indiana by 2020:**

536***

****Based on IOM recommendation of doubling nurses with doctorates in Indiana in 2020 (268)

Difference Between Predicted Number of DNP + PhD Graduates and Working Nursing with Nursing Doctorates in 2020 and Number of DNP and PhD Nurses Needed in Indiana by 2020 in 2020

= 

+5
Section 5: Summary

The data analysis and recommendations contained in this report represents the efforts of a variety of organizations and key stakeholders that gathered and analyzed information pertaining to the current and future nursing workforce in Indiana. All involved worked collaboratively to search available databases and nursing workforce and education surveys to identify the most accurate and reliable information. Committee members used the available information to:

- Describe the current nursing workforce in Indiana
- Examine current educational capacity of all types of nursing education programs in the state
- Project Indiana’s need for nurses by 2020
- Predict whether Indiana will achieve the goals set by the IOM Future of Nursing report to increase the percent of nurses with BS or higher degrees to 80% and double the number of nurses with doctorates by 2020.

A summary of findings for each of these aims is listed below. In addition, conclusions relating to the report in its entirety will be presented along with recommendations for future action.

Summary of Findings

Current Nursing Workforce

- The total number of licensed RNs in the state of Indiana as of December 2011 was 93,554 with an additional 1,730 RN licenses issued between August and December 2011.
- Of the licensed nurses 53,088 reported working in paid nursing positions in Indiana with 2,405 of these nurses residing in a neighboring state.
• The nursing workforce is homogenous with respect to gender (94.5% female) and ethnicity (93.8% Caucasian).

• The relative geographic distribution of nurses within the state is unequal with a ratio of 1 RN to 68 residents in Marion County vs. 1 RN to 973 residents in Crawford County. The average RN to resident ratio is 1:122.

• Nearly half (49%) of the nurses working in Indiana hold a BSN or higher degree.

• Between 2001 and 2011, the percent of diploma prepared nurses fell and the percent of associate degree prepared nurses was fairly steady. An increase in the percent of bachelor’s and master’s prepared nurses occurred. The number and percent of doctorally prepared nurses was very small in 2001 (172, 0.4%) and rose very slightly by 2011(282, 0.5%).

• Slightly over half (55%) of RNs were employed in hospitals and 32% were employed in nursing homes/extended care, ambulatory care, home health, and community/rural health centers. A small percent (2.6%) reported working in education.

• The majority of advanced practice nurses (69%) identify themselves as nurse practitioners.

• Over one quarter of the current nursing workforce will be aged 63 or older by July 1, 2020.

*Nursing Education*

• Enrollment in state supported LPN programs decreased 29.7% between 2006 and 2010 with a similar decline of 31% in graduations between 2007 and 2011.

• Enrollment in AD programs increased by 12.9% between 2006 and 2011 and the number of graduates increased 21.6% during this time frame.
• Enrollment in Baccalaureate entry-level programs increased 12% between 2009 and 2011 and the number of graduates increased 7%.

• Enrollment in RN-to-BSN programs increased 22% between 2009 and 2011 and the number of graduates increased 21%.

• Enrollment in master’s degree programs increased 8.9% between 2009 and 2011 and the number of graduates increased 8.8%.

• Doctor of Nursing Practice programs grew considerably with a 67% increase in enrollment and a 300% increase in the numbers of graduates. Although the percent increase in graduates from the state’s DNP programs may appear impressive, the actual numbers remain small (e.g. 8 graduates in 2009 and 32 in 2011).

• Enrollment in the state’s one PhD program fell 25% between 2009 and 2011 and there has been no change in the number of graduates; 10 per year.

• An increasing number of qualified applicants to baccalaureate and higher programs within the state are not being accepted for admission.

• Primary reasons for not admitting qualified applicants include insufficient numbers of nursing faculty and growing competition from medical students and physician assistant students for limited clinical sites/preceptors.

• Fewer opportunities for doctoral nursing education exist in Indiana in comparison to other states with similar populations.

• Fewer opportunities for doctoral nursing education in Indiana in conjunction with growing numbers of retirements and salary disparities may compound the current problem of insufficient numbers of faculty.
Projections for 2020 Nursing Supply

- Nationally, 1.2 million new nurses will be needed to fill new and existing positions by 2020 (Bureau of labor Statistics, 2012).

- Indiana will need 11,074 additional nurses by 2030 (Juraschek, Zhang, Ranganathan & Lin, 2012).

- The INWD predicts a 22.1% increase in the number of RNs and a 19% increase in the number of LPNs by 2018.

- Current hospital vacancy rates for registered nurses grew from 4 FTEs to over 6 FTEs between 2010 and 2012 although the turnover rate is relatively flat.

- Employment data for ambulatory care facilities exists only for LPNs. No information is available for nursing assistants, RNs or APNs. Other significant information gaps also exist.

- Data availability issues include but are not limited to: a lack of standardized approaches to collecting and sharing workforce data; insufficient information regarding nurse employment for all settings; insufficient granularity of existing data with respect to education and part-time/full-time status; and lack of information pertaining to advanced practice nurses.

Gap between projected demand and supply for 2020 to meet IOM Goals

- Approximately 62,119 RNs will need to be prepared at BSN or higher levels to meet the goal of 80% of BSN plus nurses working in the state by 2020.

- The gap between current supply and the number of BSN plus nurses that will be needed by 2020 is 17,521
The number of master’s and doctorally prepared faculty predicted to retire over the next several years coupled with a potential lack of academically prepared and credentialed nurses interested in assuming faculty positions will impede the state’s ability to meet supply needs.
Section 6: Conclusions

Based on the information contained throughout this report, it is apparent that issues related to data limitations, education, and funding are important to address in order to meet Indiana’s ongoing and future need for nurses. Specific conclusions regarding each of these issues are presented below.

Data Limitations

In most instances, the Committee was unable to locate one complete data source addressing each section of the report. For example, although there exists a fair amount of data pertaining to nursing supply, gaps exist related to key types of information that would have allowed the Committee to better describe the nursing workforce across all areas of educational preparation and practice settings. Also, these data gaps made it difficult to accurately predict future nursing workforce demand and supply. Because partial data is collected and housed by a variety of state and national agencies and organizations, the Committee needed to work diligently to reconcile and compile information to best address each topic area of this report. Specific conclusions related to data limitations and needs include the following.

- The need to reconcile data from a variety of data sources may have limited the reliability and validity of the information presented in this report.
- Although data exists regarding nursing employment in acute care, little data is available related to demand and employment opportunities across all settings within the healthcare industry.
- Little data exists related to the type of education preparation required for the various employment settings and positions.
• With respect to advanced nursing practice, little information exists regarding the scope and variety of locations where APNs are currently employed. Additionally, little information exists regarding future APN employment demand.

• Data are currently not available related to LPN to BSN education programs. This lack of information makes it difficult to project supply.

• A large data gap exists with respect to school of nursing faculty needs at different program levels. Data on faculty needs of BS and higher degree programs is available from the AACN and the ICN Statewide Survey of Nursing Programs. However, data on faculty needs of LPN/LVN and associate degree programs is not readily available primarily due to the low response rate from these programs to the ICN Survey.

Educational Issues

The ability to meet Indiana’s future needs for nurses depends not only on recruiting qualified applicants into the nursing profession, but also on our ability to provide them with excellent faculty and educational opportunities. Access to nursing education is critical at all levels, from the LPN to doctorate. Articulation agreements can be expanded, for example, between schools offering LPN and AD programs with schools offering BS programs to provide a seamless and more efficient method for Indiana to meet the IOM goal of 80% of nurses prepare at the BSN or higher by 2020. Although Indiana has excellent schools of nursing, these schools are challenged by many critical issues that may adversely impact their ability to educate adequate numbers of nurses needed in Indiana.

The conclusions related to educational issues are listed below.

• If enrollment in BSN programs remains level, Indiana will fall short of being able to prepare the number of baccalaureate nurses needed in the near future.
• The number of LPN/BSN programs throughout the state is also limited. In light of a potential decrease in LPN employment opportunities in the state, availability of LPN to BSN programs is a concern.

• Mirroring a national trend, Indiana is facing critical issues related to faculty recruitment and retention. The most critical issues include: aging faculty; a limited pool of doctorally prepared faculty; noncompetitive salaries; high workloads; and finding faculty with the right credentials, specialty, willingness to teach clinical courses, and with the ability to conduct research.

• A large salary gap exists between doctorally prepared nurses working in education vs. master’s and doctorally prepared advanced practice nurses working in practice. The salaries of most APN program graduates are higher than the salaries of their program faculty. This gap, which will likely continue to grow, has a negative impact on the ability to attract qualified faculty.

• With the aging of both doctorally prepared and master’s prepared faculty, Indiana’s schools of nursing will see approximately 60% of their current faculty retire within the next 5 to 10 years. This loss of faculty coupled with the other factors limiting faculty recruitment has potential to further limit the supply of nurses.

• Indiana is lagging behind other similarly populated states in the ability to produce doctorally prepared nurses, particularly with respect to the PhD. As the DNP gains greater demand and becomes officially recognized as the required degree for entry into advanced practice (e.g. CNRA requires the DNP by 2022), Indiana’s ability to produce adequate numbers of DNP graduates may be limited, unless there is program growth.
Funding Issues

Funding devoted to studying and analyzing the nursing workforce is essential, especially as the data required to project supply and demand are currently lacking. These data are critical to accurately plan to meet Indiana’s future nursing supply needs. The information gaps discussed in this report could be addressed with additional funding.

Another direct consequence of inadequate funding pertains to the economic support of schools of nursing and faculty. Faculty salaries in the state have not remained competitive with the general nursing workforce. As addressed earlier, this disparity may have a great influence on our state’s ability to meet future supply needs.
Section 7: Recommendations

Following is a list of recommendations based on the work of this committee and the committee’s report. It is our hope that these recommendations be seriously considered. It is essential that adequate numbers of well-educated nurses be available to address the health care needs of the citizens of Indiana.

Data Recommendations

1. Create a system for ongoing communication and oversight of the state’s nursing workforce data collection process

2. Develop a regular data collection timeframe and methods for Indiana nursing.

3. Capture LPN and ADN enrollment and graduation data from ISBN reports; use data captured by AACN annual surveys for BS and higher degree program enrollment and graduation data.

4. Develop a mechanism to obtain reliable data on nursing workforce demand for all healthcare sectors and for all levels of nursing preparation from LPN to PhD.

5. Develop reliable and valid methods to collect annual data on faculty as it relates to all schools in the state or use data from the ISBN annual report and AACN enrollment and graduation surveys.

Education Recommendations

6. Create seamless transitions for nurses to progress from one educational level to the next.

7. Remove barriers for attending doctoral programs and create innovative systems to support nurses as they pursue doctoral degrees.

8. Develop creative ways to increase the number of faculty.
**Funding Recommendations**

9. Provide an ongoing source of funding to assess current nursing workforce, educational capacity, faculty characteristics and needs, and predict workforce demands for nurses at various levels of practice.

10. Explore new, innovative methods to support nursing education beyond providing tuition reimbursement. For example, a model that provides nurses a minimum wage salary while they take time off work to attend school has been successful in some state locations.
Acknowledgements

We are especially grateful to Dr. Terrell Zollinger and the IU Bowen Research Center staff for assistance with interpreting the data and writing this report and to Elizabeth Kiefner Crawford, Executive Director of the Indiana State Board of Nursing, for verifying its accuracy.
References


Appendix A
Comparison of Minimum Nursing Supply Dataset (MNSD) with Available Indiana Data

<table>
<thead>
<tr>
<th>National Nursing Workforce Minimum Datasets: Supply Items (18 Variables Identified)</th>
<th>2011 Indiana Registered Nurse Re-licensure E-Survey Questions</th>
<th>Comments</th>
</tr>
</thead>
</table>
| **Variable 1**: Gender  
*Stem (example)*: What is your gender?  
*Response Categories*: Male, Female | 3. What is your gender?  
*Response Categories*: Male, Female |  
| **Variable 2**: Race/Ethnicity  
*Stem (example)*: What is your race/ethnicity? (Mark all that apply)  
*Response Categories*: American Indian or Alaska Native, Asian, Black/African American, Native Hawaiian or Other Pacific Islander, White/Caucasian, Hispanic/Latino | 4. What is your racial background?  
*Response Categories*: American Indian or Alaska Native, Asian, Black or African American, Native Hawaiian or Other Pacific Islander, White, Multiracial |  
| **Also Variable 2**: Race/Ethnicity |  
| **Variable 3**: Year of birth  
*Stem (example)*: In what year were you born?  
*Response Categories*: Open ended field | 5. What is your ethnic background?  
*Response Categories*: Hispanic or Latino, Not Hispanic or Latino | Year of birth is not currently being asked on the RNRS. Consider adding. |
<table>
<thead>
<tr>
<th>National Nursing Workforce Minimum Datasets: Supply Items (18 Variables Identified)</th>
<th>2011 Indiana Registered Nurse Re-licensure E-Survey Questions</th>
<th>Comments</th>
</tr>
</thead>
</table>
| **Variable 4:** Entry level education  
**Stem (example):** What type of nursing degree/credential qualified you for your first U.S. nursing license?  
**Response Categories:**  
Vocational/Practical certificate-nursing  
Diploma-nursing  
Associate degree-nursing  
Baccalaureate degree-nursing  
Master’s degree-nursing  
Doctoral degree-nursing | **14. What is your highest degree in nursing? Please select only one response.**  
DROP-DOWN LIST  
Diploma  
Associate  
Bachelor’s  
Master’s  
Doctorate | Entry level education is not currently being asked on the RNRS. Consider adding. |
| **Variable 5:** Highest level of education  
**Stem (example):** What is your **highest level of education**?  
**Response Categories:**  
Vocational/Practical certificate-Nursing  
Diploma-Nursing  
AD degree-Nursing  
AD degree-Non nursing  
BS degree-Nursing  
BS degree-Non-nursing  
Master’s degree -Nursing  
Master’s degree -Non-nursing  
Doctoral degree -Nursing  
Doctoral degree -Non-nursing  
Doctoral degree-Nursing Practice (DNP)  
Doctoral degree-Nursing other  
Doctoral degree-Non-nursing |
<table>
<thead>
<tr>
<th>National Nursing Workforce Minimum Datasets: Supply Items (18 Variables Identified)</th>
<th>2011 Indiana Registered Nurse Re-licensure E-Survey Questions</th>
<th>Comments</th>
</tr>
</thead>
</table>
| **Variable 6:** License type  
**Stem (example):** What type of license do you currently hold?  
**Response Categories:**  
RN LPN  
Advanced Practice RN license (include all advanced license statuses in your state) | | Not included on current RNRS survey but IPLA probably has this info. |
| **Variable 7:** Year of Initial U.S. licensure  
**Stem (example):** Year of Initial U.S. Licensure  
**Minimum Response Categories:** Open-ended field or drop-down menu | | Not included on current RNRS survey but IPLA probably has this info. |
| **Variable 8:** Country of Initial RN/LPN licensure  
**Stem (example):** In what country were you initially licensed as RN or LPN  
**Minimum Response Categories:** Open-ended field | | Not included on current RNRS survey but IPLA probably has this info. |
| **Variable 9:** License status  
**Stem (example):** What is the status of the license currently held?  
**Response Categories:** Active or Inactive | | Not included on current RNRS survey but IPLA probably has this info. |
<table>
<thead>
<tr>
<th>National Nursing Workforce Minimum Datasets: Supply Items (18 Variables Identified)</th>
<th>2011 Indiana Registered Nurse Re-licensure E-Survey Questions</th>
<th>Comments</th>
</tr>
</thead>
</table>
| **Variable 10:** Advanced Practice Nurse License/Certification  
**Stem (example):** Indicate whether you are credentialed in your state to practice as any of the following:  
**Response Categories:** Nurse Practitioner Clinical Nurse Specialist  
Certified Registered Nurse Anesthetist  
Certified Nurse Midwife  
Not credentialed as any of the above | 16a. Are you currently **certified** in any of the following Advanced Practice Nursing roles?  
- Yes  
- No  
**If you answered “yes,” please select all that apply.**  
DROP-DOWN LIST  
- Clinical nurse specialist  
- Nurse anesthetist  
- Nurse-midwife  
- Nurse practitioner | 

| **Variable 11:** Employment Status  
**Stem (example):**  
What is your employment status? (Mark all that apply)  
**Response Categories:** Actively employed in nursing or in a position that requires a nurse license – indicate if FT, PT, Per diem  
Actively employed in a field other than nursing – indicate if FT, PT, Per diem  
Working in nursing only as a volunteer  
Unemployed indicate if seeking work as a nurse, not seeking work as a nurse  
Retired | 1. What is your current work status in nursing? **Please select only one response.**  
DROP-DOWN LIST  
- Actively working in a **paid** position related to nursing  
(Consider yourself actively working in nursing if you are involved in a position where RN licensure is required)  
- Actively working in a paid position in health care but not in nursing  
- Actively working, but not as a nurse or in health care  
- Working in nursing, but ONLY on a **non-paid** basis  
(volunteer or religious order)  
- Unemployed and seeking work as a nurse in Indiana  
- Temporarily inactive as a nurse  
- Retired or permanently inactive as a nurse |
<table>
<thead>
<tr>
<th>National Nursing Workforce Minimum Datasets: Supply Items (18 Variables Identified)</th>
<th>2011 Indiana Registered Nurse Re-licensure E-Survey Questions</th>
<th>Comments</th>
</tr>
</thead>
</table>
| **Variable Group 12:** Reason for being unemployed  
**Stem (example):** If unemployed, please indicate the reasons.  
**Response Categories:**  
Taking care of home and family  
Disabled  
Inadequate Salary  
School  
Difficulty in finding a nursing position  
Other | **21. If you are currently not working for pay in nursing, what is the PRIMARY REASON(s) you do not actively working as a nurse? Please select all that apply.**  
DROP-DOWN LIST  
I have never worked in a paid position as a registered nurse.  
Burnout/stressful environment  
Career advancement/promotion to a non-nursing position  
Disability/illness  
Family obligations  
Pursuing a career in a different field  
Laid off/downsizing of staff  
Inadequate pay/benefits  
Relocated  
Retired  
Other | |
| **Variable 13:** Number of positions employed in  
**Stem (example):** In how many positions are you currently employed as a nurse?  
**Response Categories:** 1, 2, 3 or more | **7. Do you hold more than one paid position as a nurse (more than one employer)?**  
DROP-DOWN LIST  
Yes, 2 paid positions  
Yes, 3 paid positions  
Yes, 4 or more paid positions  
No | |
| **Variable 14:** Hours worked per week  
**Stem (example):** How many hours do you work during a typical week in all your nursing positions?  
**Response Categories:** Open-ended field | **12. How many hours per week on average do you spend in ALL related nursing activities? Please select only one response.**  
DROP-DOWN LIST  
1-19  
20-35  
36-40  
41 or more | |
<table>
<thead>
<tr>
<th>National Nursing Workforce Minimum Datasets: Supply Items (18 Variables Identified)</th>
<th>2011 Indiana Registered Nurse Re-licensure E-Survey Questions</th>
<th>Comments</th>
</tr>
</thead>
</table>
| **Variable 15**: Employer’s address  
**Stem (example)**: Please indicate the state and zip code of your primary employer.  
**Response Categories**: Open-ended field | 2. Please type the street address of your principal practice location.  
“Principal practice location” is the location in which you work for the most hours as a nurse.  
TEXT BOX. | |
| **Variable 16**: Employment Setting*  
**Stem (example)**: Please identify the type of setting that most closely corresponds to your nursing practice position.  
**Response Categories**:  
Hospital  
Nursing Home/Extended Care/Assisted Living Facility  
Home Health Correctional Facility  
Academic Setting  
Public/Community Health  
School Health  
Service/Occ. Health  
Ambulatory Care Setting  
Insurance Claims/Benefits  
Policy/Planning/Regulatory/Licensing Agency  
Other | 10. Which of the following best describes the setting where you work at your principal position?  
Please select only one response.  
DROP-DOWN LIST  
**Hospital** (Exclude nursing home units and all off-site units of hospitals, but include all on-site clinics and other services of the hospitals.)  
Several options listed on survey  
**Nursing Home/Extended Care Facility**  
Several options listed on survey  
**Nursing Education Program**  
LPN/LVN program  
Diploma program (RN)  
Associate degree program  
Bachelor's degree  
Higher degree nursing program  
Other program  
**Public or Community Health Setting**  
Several options listed on survey  
**School Health Service**  
Several options listed on survey  
**Occupational Health**  
Several options listed on survey  
**Ambulatory Care Setting**  
Several options listed on survey | |
<table>
<thead>
<tr>
<th>National Nursing Workforce Minimum Datasets: Supply Items (18 Variables Identified)</th>
<th>2011 Indiana Registered Nurse Re-licensure E-Survey Questions</th>
<th>Comments</th>
</tr>
</thead>
</table>
| **Variable 16. Cont.** | 11. What type of work setting best describes where you work for your other nursing position(s)? **Please select only one response.** (Refer to categories in Question 10 for further clarification.) DROP-DOWN LIST  
Hospital  
Nursing Home/Extended Care Facility  
Nursing Education Program  
Public or Community Health Setting  
School Health Service  
Occupational Health (Employee Health Service)  
Ambulatory Care Setting  
Insurance Claims/Benefits Policy, Planning, Regulatory, or Licensing Agency  
Other | |
<table>
<thead>
<tr>
<th>National Nursing Workforce Minimum Datasets: Supply Items (18 Variables Identified)</th>
<th>2011 Indiana Registered Nurse Re-licensure E-Survey Questions</th>
<th>Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td>Variable 17: Employment Position* Stem (example): Please identify the position title that most closely corresponds to your nursing practice position. <strong>Response Categories:</strong> Consultant Nurse Researcher Nurse Executive Nurse Manager Nurse Faculty Advanced Practice Nurse Staff Nurse Other-Health Related Other-Not Health Relate</td>
<td>8. Please choose the term that best describes your job title for the principal position as a nurse (the position in which you work the most hours). <strong>Please select only one response.</strong> DROP-DOWN LIST Advice/triage nurse Certified Nurse-Midwife (CNM) Certified Registered Nurse Anesthetist (CRNA) Charge nurse or team leader Clinical Nurse Specialist (CNS) Community health nurse Consultant Faculty First-line management (head nurse, floor supervisor) Infection control Informatics nurse Instructor/lecturer Legal nurse Middle management/administration (assistant director, house supervisor, associate dean, department head) Nurse Practitioner (NP) Patient care coordinator</td>
<td></td>
</tr>
<tr>
<td>National Nursing Workforce Minimum Datasets: Supply Items (18 Variables Identified)</td>
<td>2011 Indiana Registered Nurse Re-licensure E-Survey Questions</td>
<td>Comments</td>
</tr>
<tr>
<td>---</td>
<td>---</td>
<td>---</td>
</tr>
<tr>
<td><strong>Variable 18: Employment Specialty</strong>*&lt;br&gt;Stem (example): Please identify the employment specialty that most closely corresponds to your nursing practice position.&lt;br&gt;<strong>Response Categories:</strong>&lt;br&gt;Acute care/Critical Care&lt;br&gt;Adult Health/Family Health&lt;br&gt;Anesthesia&lt;br&gt;Community&lt;br&gt;Geriatric/Gerontology&lt;br&gt;Home Health&lt;br&gt;Maternal-Child Health&lt;br&gt;Medical Surgical&lt;br&gt;Occupational health&lt;br&gt;Oncology&lt;br&gt;Palliative Care&lt;br&gt;Pediatrics/Neonatal Public Health&lt;br&gt;Psychiatric/Mental Health/Substance Abuse&lt;br&gt;Rehabilitation School&lt;br&gt;Health Trauma Women’s Health Other</td>
<td>9. In your principal position, in what type of clinical specialty did you spend most of your time in? <strong>Please select only one response.</strong>&lt;br&gt;DROP-DOWN LIST&lt;br&gt;No patient care&lt;br&gt;Ambulatory care (including primary care, outpatient settings, except surgical)&lt;br&gt;Cardiac or cardiovascular care&lt;br&gt;Chronic care&lt;br&gt;Community health&lt;br&gt;Critical care&lt;br&gt;Dermatology&lt;br&gt;Education&lt;br&gt;Emergency or trauma care&lt;br&gt;Gastrointestinal&lt;br&gt;General medical surgical&lt;br&gt;Gynecology (women’s health)&lt;br&gt;Home health&lt;br&gt;Hospice&lt;br&gt;Infectious/communicable disease&lt;br&gt;Labor and delivery&lt;br&gt;Long-term care/nursing home&lt;br&gt;Neurological&lt;br&gt;Obstetrics&lt;br&gt;Occupational health&lt;br&gt;Oncology&lt;br&gt;Pediatrics/neonatal&lt;br&gt;Primary care&lt;br&gt;Psychiatric or mental health (substance abuse and counseling)&lt;br&gt;Public health&lt;br&gt;Pulmonary/respiratory&lt;br&gt;Radiology (diagnostic or therapeutic)&lt;br&gt;Renal/dialysis&lt;br&gt;Surgery (including ambulatory, pre-operative, post-operative, post-anesthesia)&lt;br&gt;No specific area&lt;br&gt;Other specialty for a majority of my time</td>
<td></td>
</tr>
</tbody>
</table>
## Appendix B

**Comparison of Minimum Nursing Education Dataset (MNED) with Available Indiana Data**

<table>
<thead>
<tr>
<th>National Nursing Workforce Minimum Datasets: Education Items (17 Variables Identified)</th>
<th>Source for Indiana Data</th>
<th>Comments and Recommendations</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Variable 1</strong>: Accreditation Stem (example): Is your nursing program currently accredited by either or both of the national nursing accreditation agencies? <strong>Response Categories:</strong> Neither Commission on Collegiate Nursing Education (CCNE) National League for Nursing Accrediting Commission (NLNAC) Both CCNE and NLNAC</td>
<td>Indiana State Board of Nursing website CCNE and NLNAC website</td>
<td>Not included in annual ICN Statewide Survey of Nursing Programs. Is available through the Indiana State Board of Nursing</td>
</tr>
<tr>
<td><strong>Variable 2</strong>: Seats for New Students <strong>Time Frame</strong>: most recently completed 12-month reporting period <strong>Stem (example):</strong> Enter the count of seats for new students for each program type on this survey. <strong>Pre-licensure Programs</strong>  - LPN  - Diploma  - ADN, generic  - AND, Bridge  - BSN, generic  - BSN, 2nd degree  - MS <strong>Post-licensure Programs</strong>  - BSN  - Master’s in nursing – clinical</td>
<td>Indiana Nursing Deans Survey for LPN through doctorate ICHE for LPN through BS Annual Data from the AACN Research and Data Center for BS through doctorate Indiana State Board of Nursing for pre-licensure AD through MS</td>
<td>Response rates at AD level are low and provide unreliable data. ICHE is a very reliable source for AD and BS but only includes state-supported institutions There are other sources of data but the AACN report seems to be the most reliable for this population Indiana State Board would provide very complete data for</td>
</tr>
<tr>
<td>National Nursing Workforce Minimum Datasets: Education Items</td>
<td>Source for Indiana Data</td>
<td>Comments and Recommendations</td>
</tr>
<tr>
<td>------------------------------------------------------------</td>
<td>-------------------------</td>
<td>------------------------------</td>
</tr>
<tr>
<td>(17 Variables Identified) tracks - Master’s in nursing – non-clinical tracks - PhD - DNP - Other doctoral</td>
<td></td>
<td>LPN, AD and BS degrees-entry degrees.</td>
</tr>
</tbody>
</table>

**Response categories:** Open-ended numeric fields

**Variable 3:** Qualified Applicants
**Time Frame:** most recently completed 12-month reporting period
**Stem (example):** Enter the count of qualified applicants for each program type on this survey.
**See Variable 2 for program types.**
**Response Categories:** Open-ended numeric fields.

**Variable 4:** Admitted Applicants
**Time Frame:** most recently completed 12-month reporting period
**Stem (example):** Enter the count of admitted applicants for each program type on this survey.
**See Variable 2 for program types.**
**Response Categories:** Open-ended numeric fields.

**Variable 5:** New Enrollees
**Time Frame:** most recently completed 12-month reporting period
**Stem (example):** Enter the count of new enrollees for each program type on this survey.
**See Variable 2 for program types.**
**Response Categories:** Open-ended numeric fields.
<table>
<thead>
<tr>
<th>National Nursing Workforce Minimum Datasets: Education Items (17 Variables Identified)</th>
<th>Source for Indiana Data</th>
<th>Comments and Recommendations</th>
</tr>
</thead>
</table>
| **Time Frame:** most recently completed 12-month reporting period  
**Stem (example):** Enter the count of new enrollees for each program type on this survey.  
**See Variable 2 for program types.**  
**Response Categories:** Open-ended numeric fields. | | |
| **Variable 6:** Graduates  
**Time Frame:** most recently completed 12-month reporting period  
**Stem (example):** Enter the count of graduates for each program type on this survey.  
**See Variable 2 for program types.**  
**Response Categories:** Open-ended numeric fields. | Same as above | Same as above |
| **Variable 7:** NCLEX Pass Rate  
**Time Frame:** most recently completed 12-month reporting period  
**Stem (example):** Enter the percentage of first-time candidates passing for each NCLEX Code.  
**See Variable 2 for pre-licensure program types.**  
**Response Categories:** Open-ended numeric fields ranging from 0 to 100. | Indiana State Board of Nursing | Reliable source |
### National Nursing Workforce Minimum Datasets: Education Items

(17 Variables Identified)

<table>
<thead>
<tr>
<th>Variable 8: total Students Enrollment</th>
<th>Source for Indiana Data</th>
<th>Comments and Recommendations</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Time Frame:</strong> as of the fall term census date</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Stem (example):</strong> Enter the count of all students enrolled for each program type on this survey.</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>See Variable 2 for program types.</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Response Categories:</strong> Open-ended numeric fields.</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Variable 9: Student Gender</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Time Frame:</strong> as of the fall term census date</td>
</tr>
<tr>
<td><strong>Stem (example):</strong> Enter the count of all students enrolled by gender category for each program type.</td>
</tr>
<tr>
<td><strong>See Variable 2 for pre-licensure program types.</strong></td>
</tr>
<tr>
<td><strong>Response Categories:</strong> Open-ended numeric fields for female, male, and missing data.</td>
</tr>
</tbody>
</table>

Same as student enrollment above

Same as student enrollment above
| **National Nursing Workforce Minimum Datasets: Education Items**  
(17 Variables Identified) | **Source for Indiana Data** | **Comments and Recommendations** |
|---|---|---|
| **Variable 10:** Student Race/Ethnicity  
**Time Frame:** as of the fall term census date  
**Stem (example):** Enter the count of all students enrolled by race/ethnicity category for each program type.  
**See Variable 2 for pre-licensure program types.**  
**Response Categories:** Open-ended numeric fields for American Indiana or Alaska native, Asian, Black/African American, Native Hawaiian or other Pacific Islander, White/Caucasian, Hispanic/Latino, Missing/unknown. | Same as student enrollment above | Same as student enrollment above |
<table>
<thead>
<tr>
<th>National Nursing Workforce Minimum Datasets: Education Items (17 Variables Identified)</th>
<th>Source for Indiana Data</th>
<th>Comments and Recommendations</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Variable 11: Student Age</strong>&lt;br&gt;<em>Time Frame:</em> as of the fall term census date&lt;br&gt;<em>Stem (example):</em> Enter the count of all students enrolled by age category for each program type. <em>See Variable 2 for pre-licensure program types.</em>&lt;br&gt;<em>Response Categories:</em> Open-ended numeric fields for 17-20, 21-25, 26-30, 31-40, 41-50, 51-60, 61 and older, and Missing/Unknown.</td>
<td>Not currently available from any source</td>
<td>Not currently available from any source. Possibly ISBN in future?</td>
</tr>
<tr>
<td><strong>Variable 12: Faculty Counts</strong>&lt;br&gt;<em>Time Frame:</em> as of the fall term census date&lt;br&gt;<em>Stem (example):</em> How many nursing program faculty were employed by the program(s) represented on this survey as of the fall term census date?&lt;br&gt;<em>Faculty Types:</em> Full-time, Part-time&lt;br&gt;<em>Response Categories:</em> Open-ended numeric fields -</td>
<td>Indiana Nursing Deans Survey for AD through doctorate&lt;br&gt;Indiana State Board of Nursing for pre-licensure AD through MS&lt;br&gt;Annual Data from the AACN Research and Data Center for BS through doctorate</td>
<td>Response rates at AD level are low and provide unreliable data.&lt;br&gt;Indiana State Board would provide very complete data for AD and BS degrees. What about BS completion, MS and Doctorates?&lt;br&gt;AACN report seems to be the most reliable for this population</td>
</tr>
<tr>
<td>National Nursing Workforce Minimum Datasets: Education Items (17 Variables Identified)</td>
<td>Source for Indiana Data</td>
<td>Comments and Recommendations</td>
</tr>
<tr>
<td>---</td>
<td>---</td>
<td>---</td>
</tr>
</tbody>
</table>
| **Variable 13:** Faculty Vacancies  
**Time Frame:** as of the fall term census date  
**Stem (example):** How many faculty positions were vacant and being actively recruited?  
**Faculty Types:** Full-time, Part-time  
**Response Categories:** Open-ended numeric fields | Same as for faculty count above | Same as for faculty count above |
| **Variable 14:** Highest Degree Held by Faculty  
**Time Frame:** as of the fall term census date  
**Stem (example):** Count your faculty as of the fall term census date by highest level of education.  
**Faculty Types:** Full-time, Part-time  
**Response Categories:** Open-ended numeric fields Associate Degree in Nursing/Nursing Diploma, Baccalaureate Degree in Nursing, Non-nursing Baccalaureate Degree, Masters Degree in Nursing, Non-nursing Masters Degree, PhD in Nursing, Doctorate of Nursing Practice, Other Doctorate in Nursing, Non-nursing Doctorate, and Missing/Unknown | Same as for faculty count above  
AACN does not ask for info on part-time faculty | Same as for faculty count above |
<table>
<thead>
<tr>
<th>National Nursing Workforce Minimum Datasets: Education Items (17 Variables Identified)</th>
<th>Source for Indiana Data</th>
<th>Comments and Recommendations</th>
</tr>
</thead>
</table>
| **Variable 15**: Faculty Gender  
**Time Frame**: as of the fall term census date  
**Stem (example)**: Count your faculty as of the fall term census date by gender.  
**Faculty Types**: Full-time, Part-time  
**Response Categories**: Open-ended numeric fields for female, male, and missing data. | Same as for faculty count above  
AACN does not ask for info on part-time faculty | Same as for faculty count above |
| **Variable 16**: Faculty Race/Ethnicity  
**Time Frame**: as of the fall term census date  
**Stem (example)**: Count your faculty as of the fall term census date by gender.  
**Faculty Types**: Full-time, Part-time  
**Response Categories**: Open-ended numeric fields American Indiana or Alaska native, Asian, Black/African American, Native Hawaiian or other Pacific Islander, White/Caucasian, Hispanic/Latino, Missing/unknown. | Same as for faculty count above  
AACN does not ask for info on part-time faculty | Same as for faculty count above |
<table>
<thead>
<tr>
<th>National Nursing Workforce Minimum Datasets: Education Items (17 Variables Identified)</th>
<th>Source for Indiana Data</th>
<th>Comments and Recommendations</th>
</tr>
</thead>
</table>
| **Variable 17:** Faculty Age  
**Time Frame:** as of the fall term census date  
**Stem (example):** Count your faculty as of the fall term census date by age category.  
**Faculty Types:** Full-time, Part-time  
**Response Categories:** Open-ended numeric fields for 30 or younger, 31-40, 41-50, 51-55, 56-60, 61-65, 66-70, 71 and older, and Missing/unknown. | Same as for faculty count above  
AACN does not ask for info on part-time faculty | Same as for faculty count above |
### Appendix C

**Comparison of Minimum Nursing Demand Dataset (MNDD) with Available Indiana Data**

<table>
<thead>
<tr>
<th>Variable Group and Item Description</th>
<th>Source for Indiana Data</th>
<th>Comments and Recommendations</th>
</tr>
</thead>
</table>
| **Variable 1:** Full Time Equivalents (FTEs) Currently Occupied | Indiana Hospital Association  
- Provides data on all positions listed for acute care institutions  
- Provides some data on outpatient/ambulatory and home health if owned by acute care agency  
- Provides some data on long-term care facilities is owned by acute care agency | Need more complete source of data for  
- outpatient/ambulatory care  
- home care, long term care  
- public health  
- Medicare/Medicaid certified home health agencies. |
| **Time Frame:** As of survey’s census date | Indiana Department of Workforce Development  
- Provides information for the variety of nurse licensures | Need more information concerning each nurse type and work locations  
- Nursing assistants CNAs/LNAs  
- Licensed Practical/Vocational Nurses (LPNs/LVN)s  
- Registered nurses Associate degree and Baccalaureate degree (RNs)  
- Advanced practice nurses (APNs) |
<table>
<thead>
<tr>
<th>Variable Group and Item Description</th>
<th>Source for Indiana Data</th>
<th>Comments and Recommendations</th>
</tr>
</thead>
</table>
| **Variable 2:** FTE vacancies currently being recruited or on hold (frozen). **Time Frame:** As of survey’s census date **Nurse Types:**  
  - Nursing assistants (CNAs/LNAs)  
  - Licensed Practical/Vocational Nurses (LPNs/LVNs)  
  - Registered nurses (RNs)  
  - Advanced practice nurses (APNs) | This information was not found for Indiana | Need consistent reporting for  
  - nurse education types  
  - nurse work locations |
| **Variable 3:** Average full-time workers employed. **Time Frame:** one-year time frame defined by states **Nurse Types:**  
  - Nursing assistants (CNAs/LNAs)  
  - Licensed Practical/Vocational Nurses (LPNs/LVNs)  
  - Registered nurses (RNs)  
  - Advanced practice nurses (APNs) | This information was not found for Indiana | Need to collect and report information for full-time employees (FTEs) and all nurse types |
<table>
<thead>
<tr>
<th>Variable Group and Item Description</th>
<th>Source for Indiana Data</th>
<th>Comments and Recommendations</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Variable 4</strong>: Average part-time worker employed</td>
<td>This information was not found for Indiana</td>
<td>Need to collect and report information for part-time employees and all nurse types.</td>
</tr>
<tr>
<td><strong>Time Frame</strong>: one-year time frame defined by states</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Nurse Types</strong>:</td>
<td></td>
<td></td>
</tr>
<tr>
<td>- Nursing assistants (CNAs/LNAs)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>- Licensed Practical/Vocational Nurses (LPNs/LVNs)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>- Registered nurses (RNs)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>- Advanced practice nurses (APNs)</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<p>| <strong>Variable 5</strong>: Per diem workers employed | This information was not found for Indiana. | Need to collect and report information for per diem workers and all nurse types. |
| <strong>Time Frame</strong>: as of survey’s census date | | |
| <strong>Nurse Types</strong>: | | |
| - Nursing assistants (CNAs/LNAs) | | |
| - Licensed Practical/Vocational Nurses (LPNs/LVNs) | | |
| - Registered nurses (RNs) | | |
| - Advanced practice nurses (APNs) | | |</p>
<table>
<thead>
<tr>
<th>Variable Group and Item Description</th>
<th>Source for Indiana Data</th>
<th>Comments and Recommendations</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Variable 6:</strong> Contract, Agency, and Traveling FTEs Employed&lt;br&gt;<strong>Time Frame:</strong> as of survey’s census date&lt;br&gt;<strong>Nurse Types:</strong>&lt;br&gt;  - Nursing assistants (CNAs/LNAs)&lt;br&gt;  - Licensed Practical/Vocational Nurses (LPNs/LVN s)&lt;br&gt;  - Registered nurses (RNs)&lt;br&gt;  - Advanced practice nurses (APNs)&lt;br&gt;This information was not found for Indiana.</td>
<td>Need to collect and report information for per diem workers and all nurse types.</td>
<td></td>
</tr>
<tr>
<td><strong>Variable 7:</strong> Workers Leaving Your Organization (Separations)&lt;br&gt;<strong>Time Frame:</strong> one year time frame defined by states&lt;br&gt;<strong>Nurse Types:</strong>&lt;br&gt;  - Nursing assistants (CNAs/LNAs)&lt;br&gt;  - Licensed Practical/Vocational Nurses (LPNs/LVN s)&lt;br&gt;  - Registered nurses (RNs)&lt;br&gt;  - Advanced practice nurses (APNs)&lt;br&gt;This information was not found for Indiana.</td>
<td>Need to collect and report information for per diem workers and all nurse types.</td>
<td></td>
</tr>
<tr>
<td>Variable Group and Item Description</td>
<td>Source for Indiana Data</td>
<td>Comments and Recommendations</td>
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| **Variable 8**: Number of FTEs the Organization Intends to Employ in One Year Time Frame **Time Frame**: as of survey’s census date **Nurse Types**:  
- Nursing assistants (CNAs/LNAs)  
- Licensed Practical/Vocational Nurses (LPNs/LVNs)  
- Registered nurses (RNs)  
- Advanced practice nurses (APNs) | This information was not found for Indiana. | Need to collect and report information for per diem workers and all nurse types. |