

Kansas



**Registered Nurse Shortages
Predicted in the US and Kansas for 2010 and 2020**

**Research
Summary**

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Our Vision – Healthy Kansans Living in Safe and Sustainable Environments

As the state’s environmental protection and public health agency, KDHE promotes responsible choices to protect the health and environment for all Kansans. Through education, direct services, and the assessment of data and trends, coupled with policy development and enforcement, KDHE will improve health and quality of life. We prevent illness, injuries and foster a safe and sustainable environment for the people of Kansas.

Registered Nurse Shortages Predicted in the US and Kansas for 2010 and 2020

The Health Resources and Services Administration (HRSA) reports that by 2020, without aggressive intervention, the US nursing supply will fall 36 percent below requirements, a shortage of more than a million registered nurses (RN) nationwide [1]. In 2007 there were 116,000 hospital RN vacancies nationwide [2], while there are 19,400 vacant nursing positions in long-term care facilities [3]. It is predicted in Kansas that in 2010, 6,890 new RN positions will be needed to meet workforce demands [4]. HRSA projects a deficit of 1,000 Kansas RNs by 2010, and a deficit of 5,900 Kansas RNs by 2020 [1]. Although projections differ about how many Kansas RNs will be needed to address future needs, there is much concern expressed in regard to a steadily worsening RN shortage.

Ranking 2010 shortages by state shows that Kansas will rank 12th in the nation for shortage counts. In 2010, this shortage translates to 351 RNs per 100,000 population. However, ranking of 2020 shortages by state shows that Kansas will rank 18th in the nation for shortage counts. In 2020, HRSA's projections indicate that Kansas will have a shortage of 1,950 RNs per 100,000 population. Kansas ranks 10th in the nation for RN FTEs to population ratio in both 2010 and 2020 [1].

Both nationally and in Kansas, a growing population and changing demographics are impacting access to nursing care. Kansas population is projected to grow an estimated 12 percent between 2000 and 2020 (2.7 million in 2000 to 3.0 million in 2020), while Kansas population age 65 and over is expected to expand by 46 percent (356,000 in 2000 to 520,000 in 2020) [5]. The growing population, and especially the population cohort age 65 and over who are most likely to have the greatest medical needs, will place increasing demands on the health care system.

While the need for health care services is increasing, the RN workforce continues to age. This trend is expected to continue [7]. In Kansas, an additional 4,450 RN replacement positions will be needed due to retirements by 2010 [4]. Nationally, as RNs retire, by the year 2020 the supply of working RNs is projected to fall below the requirements [7].

Nationally, the average age of the RN workforce is increasing. The average RN age increased from 42.3 to 45.2 to 46.8 in 1996, 2000, and 2004, respectively [6]. Special recruiting efforts will need to occur to assure sufficient replacement RNs leaving the workforce in those counties.

In addition, there are bottlenecks to the production of new nurses. There are not enough faculty members to teach RN students and fewer nursing educational slots available than needed to seat the volume of nursing applicants [7]. Nationally, in July 2008, 49,948 qualified applicants were denied admission to nursing colleges and universities due to insufficient faculty and filled admission seats, among other reasons [6]. Additionally, scholarships, grants and loans are not plentiful i.e., in 2006, 3,607 applicants (85 percent) were refused by the Nurse Education Loan Repayment Program (NELRP) due to funding shortages [2]. In 2007 HRSA refused 6,393 applicants (96 percent) for the Nursing Scholarship Program due to lack of funding [2]. Fortunately, in an effort to address some of these issues, many states are providing funding for nurse education [6]. For example, in 2006 the Kansas legislature developed a \$30 million, 10-year program devoted to nursing education. Thus far, 833 new

students have been admitted to educational programs, 65 full-time and 44 part-time Kansas faculty persons have been hired, and 66 Nurse Educator Service Scholarships have been awarded [8].

In light of the current and impending RN shortage, the purpose of this article is to review the estimated Full-time Equivalency (FTE) of RNs in Kansas. Since access to nursing services is critical to addressing the health needs of our expanding and changing population, it is important to learn how severe the Kansas nursing shortage is.

Methodology

For use in this analysis, the most current health care professional credentialing data for RNs (December 2009) were obtained courtesy of the Kansas State Board of Nursing (BON) [9]. An FTE is operationally defined as a count of the number of RNs working in nursing full-time (1.0 FTE) or part-time (0.5 FTE) [1]. RN Full-time Equivalency (FTE) estimates were calculated based on percentages reported in Kansas Occupation Outlook Reports [10,11]. Since the overall RN employment rate of the total number licensed is 83 percent [10], RN unduplicated counts were multiplied by 0.83. Because 71.6 percent of licensed RNs work full-time, while 28.4 percent of RNs work part-time [11], 28.4 percent of RN counts were multiplied by 0.5. Mailing addresses were used as a proxy for county of practice location since actual practice location addresses were unavailable.

Age distributions were derived using the RN's stated date of birth contained in the BON credentialing data. Projections through 2027 prepared by the Kansas Division of the Budget based on population data from the U.S. Census of 2000 were used to prepare ratios by age category and population [12]. HRSA 2010 and 2020 population and nursing estimates and projections were used to develop ranking comparisons with other states [1].

Results:

According to the KDHE most current unduplicated county counts reports on the KDHE Kansas Information for Communities (KIC) website, the number of RNs with Kansas mailing addresses increased from 24,055 in 1995 to 30,134 in 2009 [9,13].

FTEs

Using the most current RN credentialing data, RN FTEs were calculated for the state. Given increasing trends in Kansas RN unduplicated counts and FTEs, the Kansas RN FTE of 21,480.6 for 2009 appears comparable to the HRSA projection for 2010 of 22,100 Kansas RN FTEs [1]. A rough estimate of the number of RN FTEs can be calculated based on mailing addresses and the expected proportion of licensed RNs working in the field either part- or full-time. Work locations and work hours are not available. RN FTE distribution could more accurately be calculated were it possible to gather and make available practice locations and work hours for RNs. Many RNs work in a different county than the one in which they live. Although estimations can be made about how many FTEs there are in Kansas, it is not possible to know the location of service delivery due to lack of work hours and addresses.

Age

A critical element in assuring adequate RN service accessibility is ensuring adequate numbers of active RNs employed in the workforce. Enough new nurses must enter the workforce to offset those

leaving, i.e. entering other occupations or retiring, etc. In Kansas, 40.93 percent of RN Full-time Equivalents (FTEs) are age 56 or older.

Limitations

Although there is widespread interest in health care professional data collection, it is expensive and difficult to collect comprehensive information needed for accurate FTE calculation and projection. Stakeholders like the Kansas Association for the Medically Underserved, the Kansas Hospital Association, the Kansas Medical Society, the Kansas Nurse Association, the Kansas Association of Local Public Health Departments, community health centers, public health departments, critical care access hospitals, health care foundations, and others, need accurate estimates for program planning and management. Accurate data are critical for use in proposal development, for accessing federal and other grant support and for increasing state reimbursements.

Data are inconsistent between State and Federal reports. However, in many cases, accurate data are simply unavailable and less reliable estimates must be used. For example, although HRSA uses information like educational level, reported part-time or full-time work status, work location, among other items for FTE calculation, estimates were derived for purposes of the present analysis using mailing address as a proxy for work address. Given the differences in mailing and work address in metropolitan areas like Johnson and Wyandotte Counties, only gross FTE estimates can be made. One of the challenges is that RNs who work in Wyandotte county often live in Johnson county or a surrounding county and also receive their mail at home rather than in their work county. Thus, they are counted in their mailing county rather than in the county in which they work. This increases the error rate in FTE calculation and reporting. Accurate work location addresses are critical to improving FTE estimation accuracy. Additionally, no information is available about the number of hours worked in RN work locations. A much more accurate FTE calculation could be made were this data collected and made available.

Funding issues are of paramount importance in implementing any data collection effort of the magnitude necessary for calculation and workforce analysis of service distribution and FTE estimates. It is critical that comprehensive and accurate work data be collected for preparation of FTE estimates and for future strategic planning in addressing health care needs of the Kansas population.

Discussion

“The future demand for nurses is expected to increase dramatically as the baby boomers reach their 60s and older,” [14] and as the population ages. Demographic, economic and other societal trends may limit access to nursing care unless the numbers of nurses change proportionally to the increasing elderly population numbers, recruiting and retention issues are addressed, and adequate funding is directed toward strategic planning to meet nursing health care demands of present and future years [1].

It is important to note:

- The shortage of younger nurses to replace older retiring nurses in a rural state like Kansas holds critical implications for access to nursing care for the growing and changing population.
- Unless aggressive action is taken to increase the number of RNs in Kansas, as the gap widens between the number of nurses available to provide services to the increasingly larger population and the growing number of older people, adequate access to nursing care may be threatened.
- Continued attention must be focused on a variety of activities such as recruitment, nursing faculty expansion, increasing the number nursing student training slots, funding scholarship and educational internship

opportunities, improving career retention and length of service rates, and addressing RN work related satisfaction and burnout issues, to name a few.

Knowledge about Kansas RN service distribution based on accurate and comprehensive data will lend a fuller appreciation of issues surrounding the state's growing RN shortage and will assist program managers and policy makers in planning for the health care future of Kansans. In order to address present and increasing needs for RNs, it is imperative that strategic plans be developed to improve data collection for analysis and reporting and to expand the RN workforce in order to address the medical needs of the growing Kansas population, particularly those of the age group 65 and older.

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