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Authors

Rickles, Jordan

Ong, Paul M

Spetz, Joanne

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CALIFORNIA POLICY OPTIONS: SUPPLYING CALIFORNIA'S NEED FOR NURSES

**Jordan Rickles, Project Manager, Ralph and Goldy Lewis Center for Regional
Policy Studies**

**Paul M. Ong, Professor, UCLA School of Public Affairs, Department of Urban
Planning and Social Welfare, Director, Lewis Center**

**Joanne Spetz, Assistant Adjunct Professor, Community Health Systems,
UC San Francisco**

Introduction

Over the next few years, the majority of Californians will either be hospitalized or know someone in the hospital. The quality of the stay will depend, in part, on the number of nurses available to provide care, which the state moved to standardize with the new minimum nurse staffing ratio requirement that took effect in January 2004. The law, the first of its kind in the nation, will not be easy to implement given the current climate of increasing health care costs, state budget problems, and a limited supply of nurses. In fact, newspaper articles in the months surrounding the law's January 1 effective date document the concerns among hospital administrators over implementing the new regulations. Will implementation be difficult? Definitely. Should California therefore abandon the staffing ratios? Not necessarily. An examination of the labor market for nurses indicates that achieving the minimum staffing ratios and meeting the growing demand for nursing care requires both a short-term and long-term commitment.

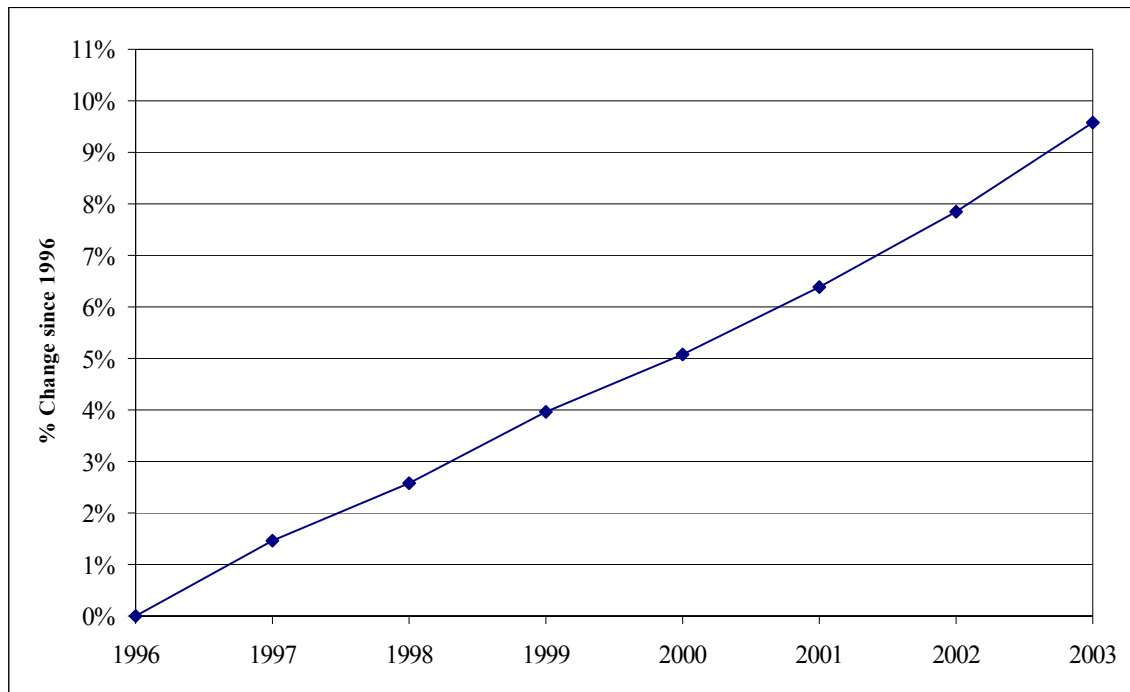
In recent years, attention has focused on the nursing profession due to a shortage of registered nurses (RNs) reported throughout California, the United States, and in many other countries.¹ California's nursing shortage is among the most severe in the United States (U.S. Bureau of Health Professions, 2002). Many of the State's hospitals have great difficulty recruiting and retaining licensed nurses (Kucher, 2000). Currently, a little over 200,000 registered nurses and 50,000 licensed vocational nurses (LVNs) work in California. The California Employment Development Department (2003) predicts that there will be 97,500 job openings for RNs and 27,100 openings for LVNs by 2010. Furthermore, California likely will need over 60,000 additional licensed nurses to meet the projected demand for nursing services in 2020 (Coffman and Spetz, 1999), and even larger numbers will be needed nationally (Buerhaus, Staiger, and Auerbach, 2000).

The ability of hospitals to implement the new ratios depends, in large part, on the size of the pre-existing nursing shortage and California's ability to increase the supply of nurses. In this chapter we address not whether a nurse-to-patient ratio is good policy but whether the labor market conditions are amenable to such a policy. First, we provide an overview of the demand-side factors that influence the labor market for nurses, including the new staffing regulation. Second, we explore the sources of California's nursing stock. Third, we discuss the nursing shortage before concluding with some recommendations for augmenting the nursing supply.

Overview of Demand Forces

Demand for nurses grew steadily over the past years, primarily driven by the population's growing demand for health care. The steady increase in hospital utilization is exemplified by the number of patients discharged from hospitals in California (see Figure 1). California hospitals discharged almost 4 million patients in 2003. This marks over a nine percent increase from 1996 and about a seven percent increase from 1998, when many consider the start of the current shortage.

Figure 1: Increase in Patient Discharges from California Hospitals Since 1996



Source: Annual Patient Discharge Profiles, Office of Statewide Health Planning and Development, State of California.

The predominant determinant of the demand for health care is the size and composition of California's population. The total California population grew by an estimated nine percent from 1998 to 2003, and is projected to grow another eight percent from 2004 to 2010. Furthermore, populations that have a high share of elderly individuals demand more health care services. The elderly population is projected to grow almost 12 percent from 2004 to 2010.² The future aging of the California population is expected to increase the demand for health care services dramatically (Coffman, Spetz, Seago, et al., 2001).

Reimbursement mechanisms used by health insurance plans also affect the demand for health care. In the early 1980s, the federal Medicare system, which provides health insurance for the elderly, changed to the Prospective Payment System (PPS). In this system, all inpatient diagnoses were grouped into categories, and payments to hospitals

were based on these Diagnosis-Related Groups. If the cost of caring for a patient cost less than the payment received, the hospital could earn a profit; however, the hospital also faced a risk of financial loss if costs exceeded the reimbursement payment. In response to PPS, hospitals actively worked to reduce the length of inpatient hospital stays, and they moved many health care services to the outpatient setting. The net effect was a reduction in demand for inpatient health care but increases in outpatient surgery and certain types of ambulatory care.

At the same time PPS came into effect, California implemented legislation that allowed for the growth of Health Maintenance Organizations (HMOs) and Preferred Provider Organizations (PPOs). These managed care insurance plans strive to reduce the use of expensive health care services. As a result, they may increase use of preventive services, such as routine screenings for disease. From the mid-1980s to the mid-1990s, as Medicare PPS evolved and managed care expanded in California, the rate of inpatient hospitalization declined and hospitals reported fewer patient discharges.

Over the past few years, managed care has retreated from active cost-control efforts to restrict patients' use of medical services (Lesser, Ginsburg, and Devers, 2003). At the same time, hospital utilization has increased and health care costs have risen at double-digit rates (Strunk and Ginsberg, 2003). If managed care continues to diminish in its effectiveness to control costs, demand for health care might continue to grow at a faster rate than in the past decade (Strunk and Ginsberg, 2003). However, managed care and fixed reimbursement rates from Medicare still limit a hospital's ability to increase prices for health services. As a result, they must seek multiple ways to offset rising production costs.

Consumer protection-oriented regulations, such as nurse staffing ratios, further limit a hospital's ability to adjust to market and regulatory changes. Even prior to the current nurse-to-patient ratios, the California Department of Health Services (DHS) required hospitals and nursing homes to meet certain nurse staffing requirements. Federally certified nursing homes are required to have an RN director of nursing and an RN on duty 8 hours a day, seven days a week (Harrington, 2001). They also must have a licensed nurse (RN or LVN) on duty during all other shifts. Under California regulations, a nursing home must have an RN on duty 24 hours a day if the facility has 100 or more beds. Other regulations require acute-care hospitals develop patient classification systems to determine their nursing care requirements and staff accordingly.

California passed Assembly Bill 394 (AB 394) in 1999, the first comprehensive legislation in the United States to establish minimum staffing levels for RNs and LVNs working in hospitals. Under the direction of the DHS a minimum ratio of one nurse to six patients in medical-surgical units (richer ratios in other hospital units) was implemented on January 1, 2004, and a one-to-five ratio is scheduled to take effect in January 2005. Full implementation of the law will be phased in between now and 2008. Since the nurse-to-patient ratios initiated under AB 394 exists in tandem with the established patient classification systems, hospitals are to treat the AB 394 ratios as *minimum* ratios and use

their patient classification systems to determine how much *additional* staffing is necessary.

The new law is likely to increase the demand for nurses, but the extent of the impact is unknown. Two studies conducted prior to the enactment of the staffing ratios estimated that between 20 and 50 percent of hospitals would hire nurses to meet the ratios, with statewide demand increasing by up to 7,230 licensed nurses (Kravitz, 2002). Some hospital systems, including the University of California Medical Centers and Kaiser Permanente, were already in compliance with the ratios prior to January 2004. Hospitals may request a waiver to establish flexible staffing strategies or exemption, but less than five percent of hospitals have received waivers (Spetz, forthcoming).

A variety of other factors—including new medical treatments, business cycles, and personal wealth—also influence the demand for health care and, in turn, nurses. As a result, it is difficult to accurately project future demand for nurses in California. Given the current trends of a growing and aging population, however, one can reasonably assume demand will continue to increase in the foreseeable future.

Supply of California Nurses

The nursing labor market exhibits a number of features that distinguish it from other professional labor markets. The most important characteristic of nursing is that it is a licensed profession. The Boards of Vocational Nursing and Psychiatric Technicians (BVNPT) and Registered Nursing (BRN) license nurses in California. Potential nurses are required to complete an approved nursing education program and pass an exam before receiving a license. Without a license, an individual is not permitted to perform a variety of tasks that are essential to the provision of health care.

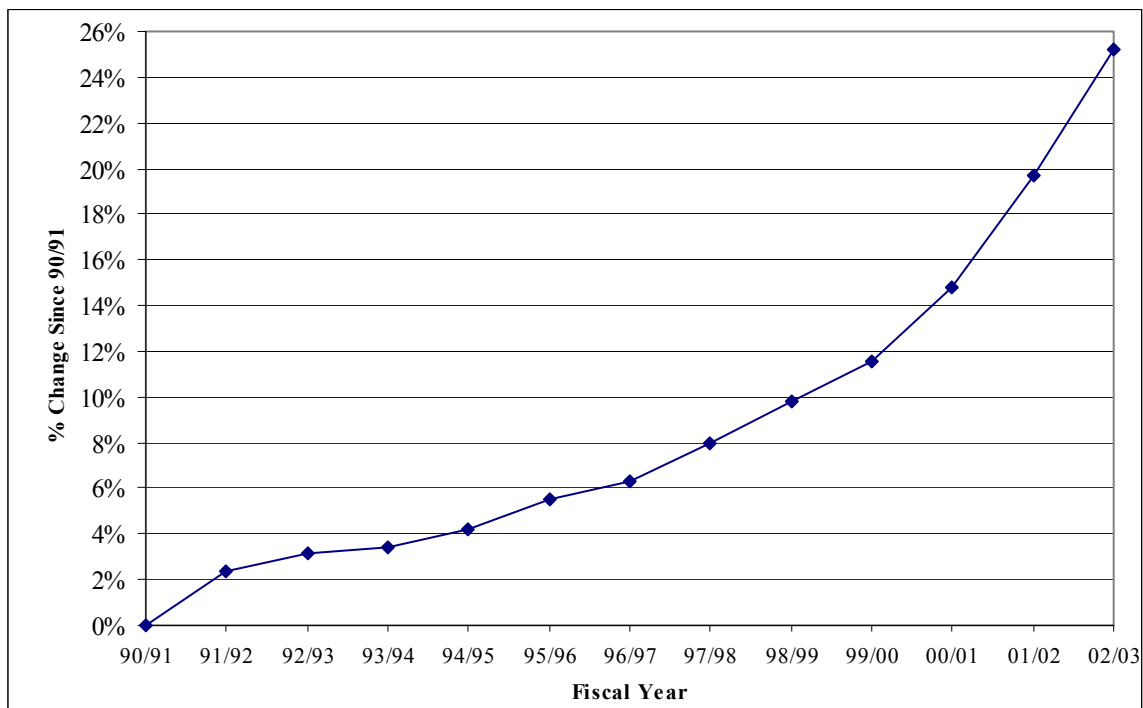
As a result of licensure, entry into the profession of nursing is restricted and less responsive to short-run market changes. Completing a nursing education program takes approximately one to two years for LVNs and two to four years for RNs. To meet growing demand in the short-term, California hospitals have three options: (1) encourage inactive/retired nurses to return to the profession, (2) recruit nurses from other states, and (3) recruit nurses from other countries.

Despite the restrictiveness of the licensing requirement, the supply of nurses appears to have increased significantly since 1998. The number of active RN licenses in California grew little in the early 1990s, but California experienced considerable growth from the mid-1990s through 2002 (see Figure 2). In 1998, there were approximately 246,000 RNs with active California licenses and by 2002 a little over 280,000 RNs had active licenses. During this period, the number of RNs educated in California remained fairly steady—around 4,800 nurses per year—with a noticeable increase in 2002/03 to 5,300 nurses. A major reason for the consistency in the number of RNs coming out of the California educational system is that the nursing programs have been operating at capacity levels for many years. Most nursing education programs cannot admit all

qualified applicants due to space limitations (Coffman, Spetz, Seago, Rosenoff, and O’Neil, 2001; CA Board of Registered Nursing, 2003). Furthermore, a shortage of teachers and budget constraints makes expansion difficult.

Growth in the domestically-educated nursing workforce begins with interest in the nursing profession. For the first part of the 20th century, licensed nursing was one of a few occupations widely open to women. As career opportunities expanded for women in the second half of that century, however, nursing had to compete with numerous other attractive professions for new entrants. Over the years, some have argued that the increased labor market opportunities for women have depleted the supply of nurses. However, an annual survey of 350,000 first-year college students across the U.S. found that the percent of students planning on a career in nursing remained steady at five percent between 1966 and 1996 (Astin, 1998).

Figure 2: Increase in Active California Licensed Registered Nurses Since 1990

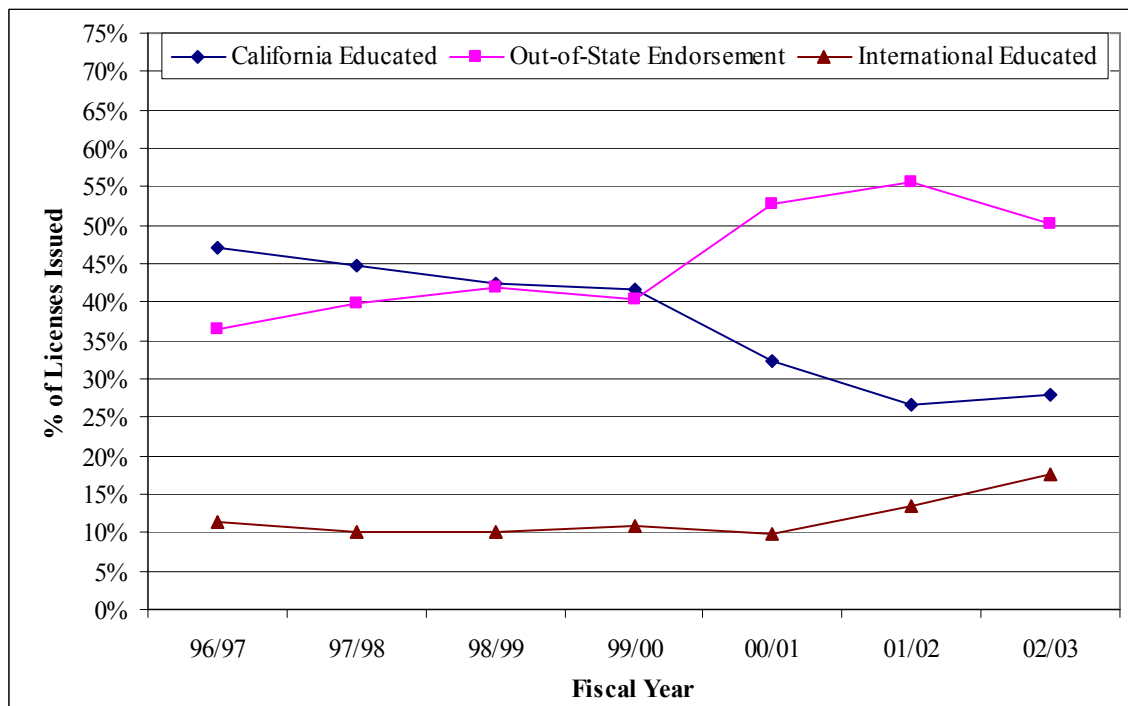


Source: California Board of Registered Nurses.

While the percent of inactive nurses decreased somewhat during the 1990s, the increase in California’s nursing stock is primarily attributable to a growing dependence on nurses from outside California. Figure 3 displays the percent of new RN licenses issued by the source of education. The percent of new licenses issued to those educated in California declined each year from 1996 to 2001, while the percent getting a California license from out-of-state endorsement increased dramatically from 1999/00 to 2000/01. Even with a drop in 2002/03, out-of-state endorsements still accounted for roughly 50 percent of all new licenses issued to California RNs. Some of these out-of-state nurses may be employed by agencies and work with traveling contracts. Nurses who work

through these arrangements agree to work at a hospital for a fixed period of time, and receive a substantially higher wage than regular employees. Traveling nurses can help fill the gap between demand and supply, but most hospitals strive to reduce their use of traveling nurses as much as possible.

Figure 3: Source of Registered Nurse Licenses Issued in California



Notes: The percentages for a given year do not add to 100 percent because smaller sources are excluded from the figure, such as out-of-state educated individuals taking the RN exam in California.

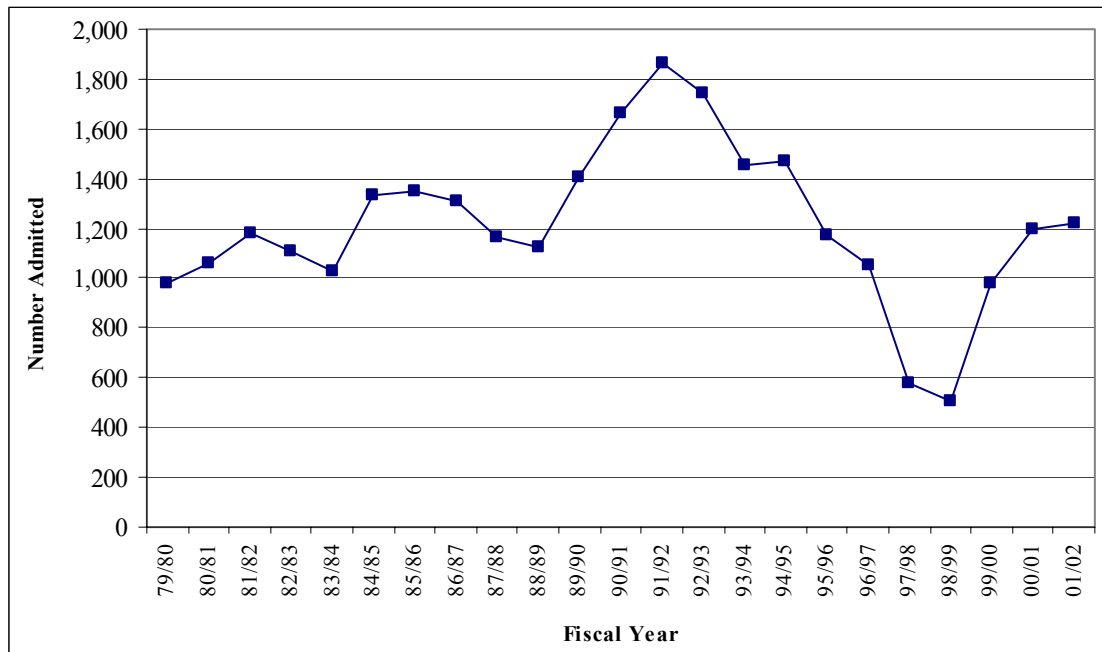
Source: California Board of Registered Nurses.

As Figure 3 indicates, the percent of new RN licenses going to internationally educated nurses also increased in recent years. From 1996/97 to 2000/01 about 10 percent of new licenses went to internationally educated nurses per year. By 2002/03 that percentage increased to about 18 percent. An examination of INS data reveals a similar increase in international RNs (see Figure 4). After increasing throughout the 1980s, the number of registered nurses entering as permanent immigrants and intending to reside in California declined drastically in the mid-1990s when reports of a surplus of RNs abounded. The number of registered nurse immigrants more than doubled as the current nursing shortage materialized at the end of the 1990s.

Changes in U.S. immigration policy are partially responsible for the fluctuation in foreign nurses entering California as temporary workers. As the high-tech economic boom of the late-1990s got underway a greater proportion of temporary worker visas (H1-B visas) went to computer science occupations and less went toward health care occupations. At the same time, the H1-A visa category reserved for nurses expired in

1997. In response to the current nursing shortage, Congress passed the Nursing Relief for Disadvantaged Areas Act (NRDAA) in 1999. The NRDAA provides up to 500 H1-C visas per year for registered nurses working in health professional shortage areas. While the H1-C visa category replaces the H1-A visas, it is limited due to the cap and restriction to shortage areas. The H1-C visas are scheduled to expire in 2005.

Figure 4: Nurse Immigrants Admitted to California



Notes: Number of registered nurse immigrants reflects the number of immigrants admitted to the U.S. as legal permanent residents that reported registered nurse as their occupation and reported California as their intended state of residence. For FY 82/83 data on occupation were not reliable, so we estimated the number admitted based on the numbers in the previous and subsequent year.

Source: Immigrants Admitted to the United States, Immigration and Naturalization Service, U.S. Department of Justice, annual files (1980-2002).

With the number of newly educated nurses fairly stagnant, California hospitals have relied on imported labor in the past few years. This approach increased the supply of nurses, but may not be enough to close the projected long-term shortage created by impending RN retirements and anticipated increases in demand.

A Shortage of Nurses

Most analysts acknowledge that a significant shortage of licensed nurses exists in the United States.³ Reports of nursing shortages in the United States have arisen regularly over the past 60 years (Yett, 1975; Friss, 1994). Prior to the current shortage, the most recent shortage was reported in the late 1980s and early 1990s (Aiken and Mullinix, 1987). By the mid-1990s, complaints of a shortage were replaced with concerns of an oversupply of nurses, largely due to the growth of managed care in the United States (Aiken, Sochalski, and Anderson, 1996; Buerhaus and Staiger, 1996). However, by 1998,

stories of a shortage resurfaced, particularly in nursing specialties such as critical care and on the western and eastern coasts of the United States (Gurnon, 1997; Kilborn, 1999).

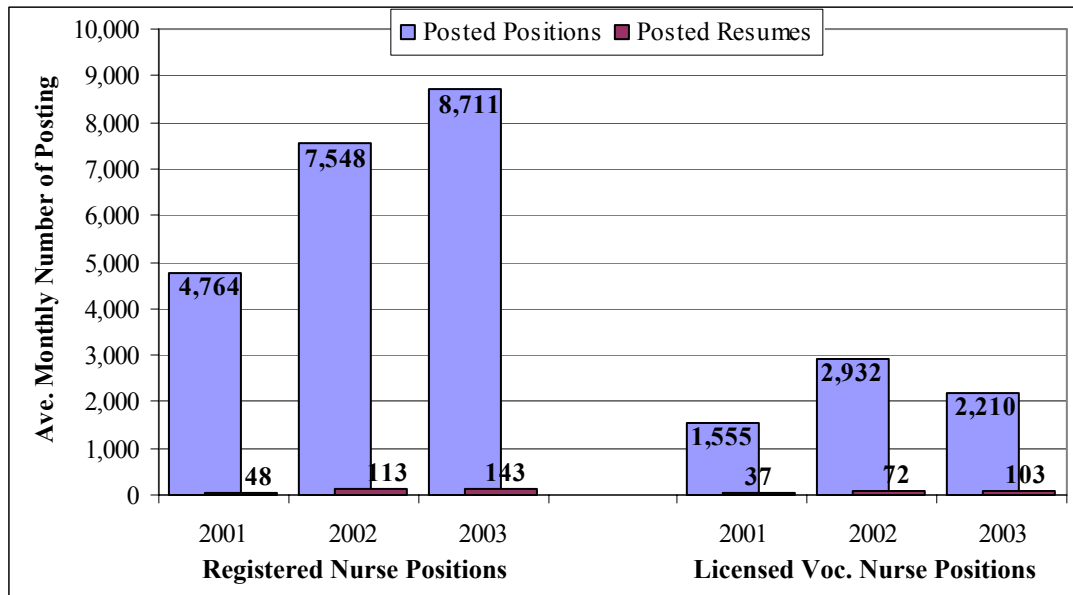
While one recent study suggests the current shortage has improved (Buerhaus, Staiger, and Auerbach, 2003), most forecasts see no immediate end to the shortage of RNs.⁴ The Bureau of Health Professions (2002) in the U.S. Department of Health and Human Services projects that the shortage will worsen dramatically over the next 15 years, with a shortage of over 120,000 nurses projected by 2020 in California and a shortage of over 800,000 nationwide. The nursing shortage is made even more worrisome by the fact that many other nations are experiencing similar shortages. The United Kingdom, Canada, Australia, Southeast Asia, and Southern Africa are among many nations and regions that report nursing shortages of varying magnitudes (Aiken, Clarke, and Sloane, 2002).

Many economists suspect that the nurse labor market is characterized by “monopsony,” i.e., that employers collude in restraining nurse pay in the face of excess demand. A 1999 study of Veterans' hospitals—one of the more recent examples of this literature—finds evidence of employer monopsony power in the nurse labor market (Staiger, Spetz, and Phibbs, 1999).⁵ One aspect of a monopsonistic labor market is that wage increases can occur without reductions in employment. In effect, upward pressure on wages reduces vacancies rather than the number actually employed. That attribute of monopsony makes such markets particularly enticing targets for nurse unionization. And, indeed, in California the two major nurse unions—the California Nurses Association and the Service Employees International Union—have been very active in organizing nurses at major hospitals.

Unfortunately, available statistics on employment and wage levels of nurses in California are not sufficiently consistent for us to document a clear picture of changes over time. The data sources focus either on specific sectors of the economy, contain cross-sectional data for non-consecutive years, or have a sampling framework that makes year-to-year comparisons unreliable. Nevertheless, analysis of the available data suggests that California still suffers from a nursing shortage, despite the recent increase of nurses documented in the previous section. Unfortunately, the limited information available and described below does not, by itself, identify the existence of a shortage nor quantify the extent of a shortage. It does, however, present analysis that is consistent with the notion of a shortage.

The discrepancy between the number of openings and resumes posted on the CalJOBS Electronic Database provides an indication of the depth of the shortage (see Figure 5).⁶ The monthly average number of RN job openings posted on CalJOBS in 2003 is over 60 times greater than the number of resumes posted to fill those positions. For LVNs the difference is not as great, but still measures a large discrepancy. While the differences between job openings and resumes could simply be the result of disparate use of the CalJOBS system (i.e., potential workers are less likely to use the database than potential employers), it nevertheless documents a mismatch between demand and supply.

Figure 5: Posted Job Openings and Resumes in the CalJOBS Electronic Database



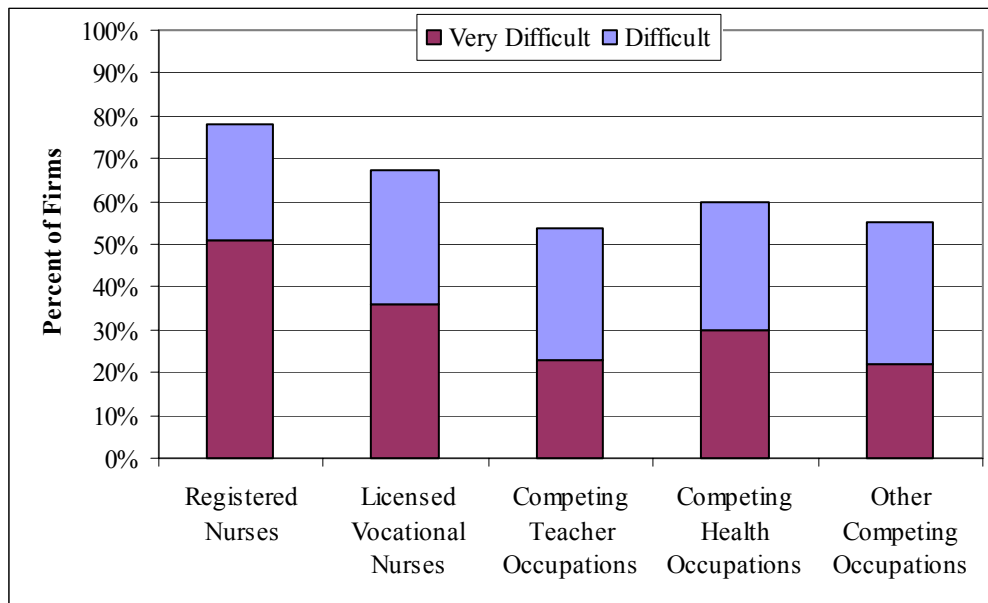
Source: CalJOBS Database, EDD, 2001-2003.

Note: Data for 2003 only includes the first four months of 2003.

Another indicator of a labor market shortage is the extent of unemployment since occupations with high demand, relative to supply, will exhibit less unemployment than other occupations and shorter unemployment spells. According to the 2000 decennial census, only about 1.3 percent of registered nurses, and about 3.7 percent of licensed vocational nurses were unemployed in California. These rates are significantly lower than the overall California unemployment rate of about 6.9 percent, suggesting the labor market is much tighter for nurses. Analysis of state unemployment insurance (UI) claims in 2002 also indicates a tighter labor market for nurses. The length of time nurses collected unemployment benefits in 2002 was significantly shorter than workers in competing occupations. The average RN and LVN received benefits for about 14 and 20 weeks, respectively, while the average claimant in a competing occupation received unemployment benefits for about 22 weeks. Furthermore, RNs claiming UI benefits were almost twice as likely as claimants from competing occupations to find a new job before benefits could be collected.

Employer-based data from the California Cooperative Occupational Information System (CCOIS) also documents a shortage of nurses. Just over half of employers reported that it was very difficult to find qualified RN applicants and over a third reported that it was very difficult to find qualified LVN applicants (see Figure 6). These rates are significantly higher than those reported for competing occupations. Over three-fourths of employers reported difficulty (difficult or very difficult) finding qualified RNs, a much higher percentage than those seeking qualified applicants for other competing occupations. Even after statistically controlling for basic differences across employers, geographic regions, and years, we find that employers report more difficulty finding

Figure 6: Employer Perceived Difficulty of Finding Qualified Applicants, by Occupation



Source: California Cooperative Occupational Information System (CCOIS), EDD, 2000-2003 pooled.
 Note: The competing occupations represent occupations with a relatively high percentage of females with educational attainment and wage rates similar to those in the nursing profession.

qualified RNs than other occupations. Furthermore, the CCOIS data do not indicate any significant improvement in the shortage from 1999 to 2003.⁷

Although the nursing shortage has ebbed and flowed for many years, the fact that it is often cited as a problem by nurse employers suggests that the labor market is not adjusting to eliminate the shortage. Supply has not increased enough to close the gap with demand, which will worsen in years to come. Moreover, the stock of active nurses is expected to drop dramatically over the next 15 years as large numbers of nurses retire. Nonetheless, a continued shortage is not an inevitable force that predicates a major restructuring of the health care delivery system or the abandonment of public health assurances.

Conclusions and Policy Options

For hospitals to meet patient care needs and comply with the new minimum staffing ratios, they must find nurses available for and willing to work. Yet anecdotal reports and data analyses indicate that California suffers from a nursing shortage. In most labor markets, shortages are cyclical or short lived. As a result, long-term policy responses are not required. The labor market for nurses, however, exhibits particular characteristics conducive to a persistent shortage, thus suggesting that government intervention may be required to alleviate the problem.

A shortage can become persistent for several reasons: wages might not adjust, supply might not increase, or demand might not decline. In the current labor market for nurses, employers face relatively fixed revenue due to government reimbursement rates and pre-existing private contracts. As a result, it is difficult for employers to absorb increased labor costs associated with raising wages. Monopsonistic behavior among hospitals also may suppress wages.⁸

Even as wages for the nursing profession increase, significant changes in the local nursing supply might not occur immediately because of the lag between a person's decision to become a nurse and the time it takes to complete the required education. Moreover, nursing education programs may not be able to expand, because their capacity is restricted by the state budget and teacher availability. Finally, employers will not significantly decrease the demand for nurses because staffing is controlled by patient needs and various regulations, including the new nurse-to-patient ratios.

Despite the lag between growing demand and nurses entering the workforce, the supply of nurses has expanded significantly. The expansion occurred because California became increasingly dependent on nurses trained in other states and countries. This was true even before hospitals faced the staffing ratios. While the number of licenses issued to California-educated nurses remained relatively steady at about 5,000 per year from the mid-1990s to 2002, the number of licenses going to out-of-state nurses increased from about 5,000 in 1997 to over 13,000 in 2002.

In the short-term, hospitals are likely to continue their reliance on out-of-state nurses to meet growing demand and the staffing ratios. Immigration is another component used to maintain an inflow of nurses, which depends in part on federal immigration policy. In the past year the Bush Administration recommended increasing the number of temporary worker visas, with an emphasis on low-wage workers such as farm laborers. While more farm laborers would likely benefit the California economy, nurse employers are likely to press the state to seek more worker visas for nurses through an extension of the H1-C visa legislation set to expire in 2005.

In the long-term, continued dependence on out-of-state nurses is risky. On the surface it appears that California benefits from the services and knowledge of nurses whose training expenses were absorbed by other states and countries. But to attract these nurses into California, hospitals must increase their compensation packages. Base pay rates for nurses have increased over the past few years (Spetz, 2004), but employers often use other approaches to attract nurses. Current job postings for nurses advertise \$5,000 signing bonuses, referral bonuses, housing subsidies, travel reimbursements, student loan repayment, and even Costco memberships. This strategy allows employers to attract nurses from other states and countries, but only postpones the long-term problem of attracting new people into the nursing profession and keeping experienced nurses from leaving.

The costs of attracting and keeping nurses will continue to rise as the nursing shortage in other states and countries worsens, and these costs will be passed to the public in the

form of higher health care expenses and insurance rates. Efforts to increase the flow of nurses from other states may be limited by countervailing efforts by other states to retain their pool of nurses. Additionally, California's reliance on international nurses could deplete the health care workforces of other countries—such as the Philippines, which supplies over half of California's international nurses. Continued dependence on external nursing supplies leaves California's health care system susceptible to external uncertainties, such as changes in immigration laws and international economies.

California needs to become a more self-sufficient supplier of nurses, but limited training slots and budget constraints at California universities and community colleges make it difficult for the state to train enough nurses to meet the growing demand. In 2002, then-Governor Davis allocated \$60 million over three years for the Nurse Workforce Initiative (NWI) to address the nursing shortage. The NWI includes both short- and longer-term strategies to increase the number of nurses in California. About 5,000 nurses are expected to be trained with NWI funds, but this is only a few drops in a seemingly expanding bucket. At least \$24 million of the NWI funds earmarked by former Governor Davis has not yet been allocated, and the current budget environment in Sacramento suggests that additional state-supported relief is not likely. To best cope with the need to train more nurses during a tight fiscal environment, state funds dedicated to training programs should be directed to occupations in high demand, like nursing.

Keeping current nurses working in the profession may be as important as educating new nurses. As with the overall population, the nursing workforce is aging. In 2000, about one-third of active nurses in California were over 50 years old. As recommended by Buerhaus, Staiger, and Auerbach (2003), “efforts are needed to improve the clinical ergonomic environment of hospitals to minimize the physical strain” of the job and prolong careers. Steps to make nursing tasks more amenable to older workers will help delay the retirement decision many nurses will face in the coming years.

Research demonstrates that hospitals with better nurse-to-patient ratios provide better care to patients.⁹ But for the nurse staffing ratio law to be effective, policymakers, hospital administrators, and the public must recognize that achieving desired nurse staffing ratios requires not only a short-term solution but also a long-term commitment. This commitment needs to include further investment in education and training, along with an exploration of new training paths, to push potential nurses through the structural bottleneck. Without such a commitment we may be left with little more than a good intention and too few nurses.

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Endnotes

¹ For example, see: Buerhaus 2001; Murray, 2002; and Spetz and Given, 2003.

² Projections based on California Department of Finance published numbers.

³ For example, see: Gurnon, 1997; Buerhaus, 1998; Kelley, 1998; Buerhaus 1999; Kilborn, 1999; Buerhaus and Staiger, 1999; and Spetz and Given, 2003.

⁴ For example, see: Coffman and Spetz, 1999; Buerhaus, Staiger, and Auerbach, 2000; Levine, 2001; and Maher, 2003.

⁵ The references in this paper provide other citations of the monopsony literature.

⁶ The CalJOBS database is maintained by the California Employment Development Department. It allows job seekers and employers to search online. Further information on CalJOBS is available at www.caljobs.ca.gov.

⁷ i.e., the percent of employers reporting difficulty was not significantly different across years.

⁸ Available data on wages for nurses in California indicate that wages for RNs and LVNs increased slightly over the past few years, but did not increase at a greater rate than other occupations. However, data limitations make state-level, year-to-year comparisons of occupation-specific wages imprecise.

⁹ For example, see: Aiken, Clarke, and Sloane, 2002; Needleman, Buerhaus, Mattke, Stewart, and Zelevinsky, 2001 and 2002.