



Effect of immigrant nurses on labor market outcomes of US nurses

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ABSTRACT

We study the effect of immigration of foreign-trained, registered nurses (RNs) on the employment and wages of US-trained RNs. We use the “area” approach and study effects of immigration in labor markets defined by the state. We find substantial evidence that immigration by foreign-trained nurses increases the supply of nurses and that this increase in supply is associated with a decrease in annual earnings. Estimates suggest that a 10% increase in supply due to immigration is associated with a 1–4% decrease in annual earnings, although most estimates were not statistically significant and we did not find a similar association between an increase in supply and wages.

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1. Introduction

It is widely believed that there is a severe nursing shortage in the United States (US) and that the shortage will remain for many years.¹ To address this and similar shortages in the past, the government has eased immigration restrictions on foreign-trained nurses. For example, in 1989, Congress passed the Immigration Nursing Relief Act (INRA) that established a 5-year pilot program to allow foreign-educated nurses to enter the country on H-1A visas. Almost immediately, there was a substantial response to this legislation as over 24,000 immigrant nurses entered the US by May 1989, and many nurses who entered the country through this program adjusted to lawful permanent resident status (Meyer, 2006). This program was ended in 1995. However, in 1999, a new program, H-1C visas, was created for nurses that targeted medically underserved areas. Further, changes in immigration rules in 2003 allowed nurses to enter under H1-B visas. The North American Free Trade Agreement (NAFTA) in 1994 also allowed Canadian nurses to enter the US to work. Partly in response to these policy changes, the proportion of foreign-born among newly

licensed registered nurses fell from about 10% in 1995 to close to 5% in 1998, and then rose to close to 15% by 2003 and remained at that level until 2007 (Brush et al., 2004).²

All discussions of solutions to the nursing shortage recognize that immigration will likely play an important role in alleviating current and future nurse shortages (Galessell-Brown, 1998; Berliner and Ginzberg, 2002; Kline, 2003; Aiken et al., 2003; Chaguturu and Vallabhaneni, 2005; Lafer, 2005; Lopez and Tsitouras, 2009). However, immigration of nurses has long generated concerns among health professionals, nursing advocates, and policy analysts about its consequences (Joel, 1996; Galessell-Brown, 1998; Trucios-Haynes, 2002; Brush et al., 2004; Lovell, 2006; Blakeney, 2006). Specifically, there is concern about how foreign-trained nurses will affect the quality of patient care, the labor market opportunities of US-trained nurses and the supply of nurses in the sending countries (Immigrant Nurse Relief Act, 1989; Galessell-Brown, 1998; Trucios-Haynes, 2002; Brush et al., 2004; Lovell, 2006; Aiken et al., 2001; Flynn and Aiken, 2002).

Despite its potentially important consequences, there has been little systematic study of the effect of immigration of nurses on the economic opportunities of domestic nurses (Immigration Nursing Relief Advisory Committee, 1995; Schumacher, 2008). Therefore, public concern and opinion on this issue is largely based on standard economic theory, which predicts that an increase in supply of workers in an occupation should lower wages. However, the available empirical evidence on this issue includes a surprisingly wide range

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¹ According to the Department of Health and Human Services (2002), there was a shortage of 110,000 nurses in the US in 2000, which was projected to increase to 149,000 in 2005 and to 275,000 by 2010. The Bureau of Health Professionals projects a shortage of RNs over the next 15 fifteen years, with a 12% shortage by 2010 and a 20% shortage by 2015 (<http://bhpr.hrsa.gov/healthworkforce/reports/methidentify-summary.pdf>, website last accessed October 19, 2011).

² The 2007 figure is from authors' calculation using NCLEX data.

of possible consequences: from immigrants having no adverse effects on the labor market opportunities of US workers to large negative effects (see Edmonston and Smith (1997) for a summary of previous literature; and Card (2005, 2009), Borjas (2003) and Borjas and Katz (2005) for a review of more recent research). Moreover, the effects of immigration in nursing may differ from those found for workers in general, or for workers in other occupations. Thus, it remains an unanswered question as to how immigration of foreign-trained nurses affects the economic well-being of domestic nurses.

Answering this question is important because of the vital role that nurses play in providing medical care. If foreign-trained nurses are depressing the wages of domestic nurses, as some advocates claim, then the future domestic supply of nurses will shrink, exacerbate the apparent nurse shortage, and worsen the supposed consequences of the shortage such as poor quality patient care.³ In fact, the widespread use of administered prices in health care (e.g., Medicare and Medicaid) may encourage hospitals and other providers to reduce quality perhaps by substituting low-paid immigrant nurses for high-paid domestic nurses. This may be harmful not only to domestic nurses' labor market opportunities, but also to consumers (patients) if foreign-trained nurses are of lower quality than domestic nurses. This problem may be particularly important in health care because of the difficulty of observing the quality of care. On the other hand, if foreign-trained nurses are of the same quality as US trained nurses, but willing to work for less, then the same quality of health care can be delivered at lower cost, but this consumer benefit will come at the expense of domestic nurses who will have worse labor market opportunities than otherwise.

The objective of this paper is to study the effect of immigration of foreign-trained registered nurses (RNs) on the employment and wages of domestic RNs.⁴ The nursing context, although narrow, provides a particularly advantageous setting to study the effect of immigration on native workers. Focusing on one, clearly defined occupation alleviates empirical problems that plague research in this area. First, it is straightforward to identify the native workers most affected by foreign-trained nurses: US-trained RNs. The level of competition between immigrants and natives within such a narrowly defined occupation category is unquestionably high. In contrast, studies focused on the effect of immigration on a broader range of native workers, which often classify workers into groups using a few observable characteristics such as education and age, do not accurately identify similar workers competing for the same jobs. This problem may explain why previous studies often fail to find an effect of immigrants on natives, although this is just one possible explanation. Second, by focusing on one occupation it is easier to adjust for demand shifts that may confound the relationship between immigration and wages. Variables that affect the demand for nurses such as the number of hospital admissions and demographic factors related to population health are readily available. Studies of broader groups of immigrants face more difficulty adjusting for potential demand side factors that may affect wages and immigrant location decisions. Third, health care is a highly regulated service industry (e.g., minimum nurse staffing ratios) and there is arguably less scope for firms (e.g., hospitals) to adjust to changes in immigration (supply of labor) by altering the production process and exporting services. Finally, examining the effect of nurses on a skilled occupation such as nursing is of growing interest given the rising levels of education around the world and the increasing migration of skilled workers into the US. In sum, while the narrowness of our study limits its applicability, the

empirical advantages associated with this narrow focus improve the internal validity and credibility of the analysis.

To accomplish our objectives, we used data from several years of the National Sample Survey of Registered Nurses (NSSRN), which is a dataset uniquely appropriate for this analysis. Unlike the Census, which is used by most previous research to study effects of immigration, the NSSRN provides information on whether a registered nurse works in nursing or in an occupation other than nursing. This distinction is important with respect to identifying the group of nurses affected by immigration because a sixth of all licensed registered nurses work in occupations other than nursing, and occupational choice can be an important adjustment in response to an increase in supply caused by immigration. In addition, the Census does not identify foreign-trained nurses, but only foreign-born nurses. It is the former group that is germane to the study of the effect of immigration on wages. Finally, the Census does not identify nurses with a valid nursing license, which is required to work as a nurse, and the Census is not intended to be representative for narrowly defined occupations within states.

We obtained estimates of associations between the supply of nurses and labor market outcomes using an instrumental variables approach. We used the lagged number of foreign-trained nurses to instrument for the current supply of nurses. Our results indicated that immigration of foreign-trained nurses significantly increased the supply of nurses in labor markets defined at the state level. However, changes in the supply of nurses, as a result of immigration, were not associated with wages or earnings in a consistent manner. While there was some evidence that an increase in the supply of nurses due to immigration was associated with a decrease in annual earnings, the same was not true for wages. In addition, most estimates were not statistically significant reflecting, at least partly, the fact that the instruments were somewhat "weak". Nor was the change in supply associated with the probability of not working in nursing. Overall, our findings are consistent with many of the results in the broader literature that finds a weak association between immigration and labor market outcomes of US-born (trained) workers (Card, 2005).

2. Research design

Our interest is in determining the effect of immigration of foreign-trained nurses on the wages and employment of US-trained nurses. Our analysis is based on what has become known as the "area approach." The assumption underlying this approach is that areas, in our case states, represent separate labor markets and that RN wages are determined by supply and demand factors in those markets. Immigration of nurses to a state represents a shift (increase) in the supply of nurses in that market and simple labor market theory suggests a decrease in wages as a result of immigration.⁵ We use

⁵ The nursing market has sometimes been characterized as monopsonistic. However, the most recent study of the issue concluded that "...whatever one thinks about the importance of monopsony, classic or new, the market for RNs is a questionable example given the relatively high mobility of RNs across employers (Hirsch and Schumacher, 2005, p. 987)." This and other papers (e.g., Hirsch and Schumacher, 1995; Adamache and Sloan, 1982) suggest that it is not unreasonable to assume that the market for nurses is competitive. However, even if we assume that the market for nurses is characterized by monopsony, the main prediction that motivates the empirical analysis is very likely to remain valid (Manning, 2003). Immigration will shift the (upward sloping) supply of labor to the firm to the right. This will result in lower wages (that remain below the marginal product). This is necessarily true if immigrant nurses have a lower reservation wage than natives, which seems likely given the motivation for immigration and labor market opportunities in most sending countries. It is also true if immigrants have a higher reservation wage than natives and the marginal cost of immigrant nurses rises with employment at a rate that is not too much less than native nurses. The marginal cost of employment is affected by the costs of recruiting and training more nurses. It seems unlikely that these costs would rise significantly more slowly for immigrant nurses than native nurses. In sum, the primary prediction—that wages fall as a result of immigration—is likely valid whether the market for nurses is characterized by perfect competition or monopsony.

³ While it is widely believed that patient care has been adversely affected by the nurse shortage, the evidence on this point is not conclusive. Several observational studies have reported a positive association between the quantity of nurses (per patient) and patient outcomes (see Aiken et al. (2002) and Needleman et al. (2002) for prominent examples), but this does not imply that the current level of nurses is not optimal.

⁴ We limit our study to registered nurses (RNs) and in the rest of the paper we use the generic term nurse instead of registered nurse. It is also important to distinguish foreign-trained nurses from foreign-born nurses who are trained in US. It is the former group that is of interest here.

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