



*Notes from the Dismal Science:*

THE NURSING SHORTAGE:  
TRUE OR FALSE?

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The website “Nursing Shortage” reports that 72 percent of hospital supervisors in a recent year reported a nursing shortage at their facility. The American Association of Colleges of Nursing report that the shortage of RNs “could reach as high as 500,000 by 2025.” The U.S. Bureau of Labor Statistics projects that more than one million new and replacement nurses will be needed by the year 2016. And lastly, Linda Aiken, a professor of sociology and nursing at U Penn, and a highly respected spokesperson on nursing issues, asserts that the U.S. is currently “short an estimated 150,000 nurses.”

These statements might all be true, I cannot say that any are wrong, even though I doubt that anyone can confidently say that they know what will happen in the year 2025. However, I can explain why health economists usually greet these kinds of numbers with skepticism. At one time I studied manpower shortage theory and projected nursing shortages as part of a job. This experience led me to join the skeptics; moreover, it mainly led me to respect how devious the future can be. The future will take your numbers, make a fool out you, and then it won't be sorry.

Just out of graduate school in the late '70s, I took a posi-

tion with a federal health manpower planning project in Pierre, S.D. We did planning democratically, with citizen committees and subcommittees and subcommittees of the subcommittees. I helped staff these committees and eventually came to believe that I had met nearly all 167,000 citizens of South Dakota.

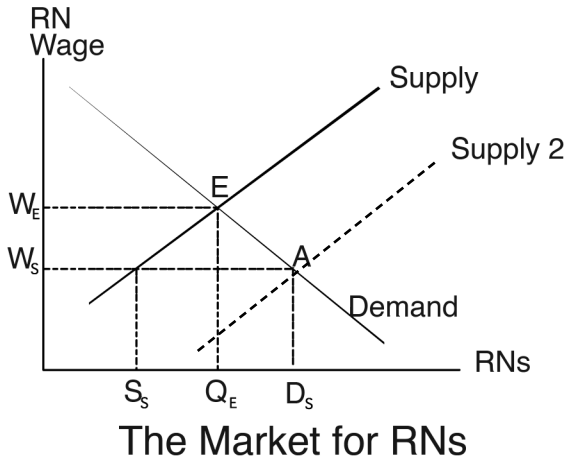
The assignment required the study of nursing manpower and the preparation of a report on the adequacy of the nursing labor force in the state. The first surprise was finding two contemporaneous prior reports claiming there was a nursing surplus in the state, while the other claimed there was a shortage. As is explained shortly, before leaving employment there, it became understandable how this apparent contradiction made sense. More humbling, however, was that my nursing report, which claimed there to be shortages, was overturned in just a few years with an update. The new data revealed a surprising growth in the supply of nurses. Economic behaviors change quickly sometimes.

### *Need-Based Shortages*

But what about the case of two concurrent studies with opposite conclusions? It turned out that the one was based on “Need” and the other on “Supply and Demand.” Manpower need, when it doesn’t even reference supply and demand, usually turns out to be based on what an expert panel determines to be best practice. Supply and demand reflect what people actually do, but need-based claims of shortages describe what institutions and nurses *ought* to be doing instead. Pure need-based claims of nurse shortages hospitals run the risk of being merely “pie-in-the-sky” wishes that have no real effect. However, one comes to respect these views of expert panels, because sometimes they can ring the alarm about something truly wrong with the status quo. Nevertheless, the current warnings about nursing shortages in the nation refer to de-

mand and supply shortages, and the remainder of this essay will address demand and supply.

### *Supply and Demand Shortages*



The RN demands by hospitals, nursing homes and other firms that hire them are shown in demand curve D; the demand is downward sloping, which shows that the firms wish to hire more RNs when the wage is lower. For their part, more RNs are willing to work when the wage offered is higher; see the Supply curve. Health care firms also hire LPNs and Aides, whose analysis is omitted here; their analysis is similar to the RNs, but all three are interrelated. Point E marks the market equilibrium, and at that point there are no shortages. In contrast a shortage exists when the wage lies below  $W_E$ , such as at the wage  $W_S$ . In that event, the nursing shortage, also called “excess demand,” of  $(D_S - S_S)$ , occurs.

It is difficult to conceive the shortage  $(D_S - S_S)$  as “urgent” or as a “crisis” because it can be easily eliminated were the nurse wage to rise up to  $W_E$ . Despite its apparent simplicity this solution rarely gets talked about in the nursing literature. Perhaps nursing leadership gets captured by the popular

media in which a manpower shortage becomes simply a number of budgeted positions minus the number of working nurses, with no solution possible except to graduate more RNs. To the contrary, the market solution, a rising wage, does two things. It induces more RNs to work, and it discourages hospitals from demanding quite so many RNs. They meet in the middle. A few nursing authorities rebut this view by arguing that nurses do not respond to higher wages. But this seems doubtful, and at worst this would just imply that the RN supply curve was vertical, a fact that if true creates no obstacle for eliminating the shortage.

It was refreshing to me to find a website entitled “Solving Nursing Shortages through Higher Wages,” posted by the Institute for Women’s Policy Research. This group discovered some interesting facts: 1) over the 1990s nurses’ pay did not increase; 2) when wages finally began to rise nurses responded promptly—hospitals added 186,500 nurses between 2001 and 2003; and 3) of 49 recent analyses of the nursing workforce only 11 proposed increasing wages.

Confirmed in the literature, adequate nurse staffing ratios are of critical value to patient outcomes. One source even claims that when hospitals have trouble getting adequate staff, they overwork existing staff rather than offer higher wages. But RNs, for their part, argue mainly that nurses are very important for patient health, but rarely if ever do they argue for a just wage. Perhaps the nurses are the altruists.

### *Monopsony*

From 22–25 June 2008, I attended a conference at Duke University and enjoyed a presentation on nursing and monopsony. The presenter told the theory and its implications in the microeconomics manner, though in the final analysis he was not sure if nursing markets were monopsonies. Here is the story.

A “monopsony” is a market with a single hirer of a given type of worker; for example, a hospital in a moderate sized city

may be the only or near only firm in a market to hire nurses. The graph for this is more complex than the Figure, but there is a quick way to get the idea across. Most of us know what a monopoly is, the only seller of a given good in a market, and we know the theory that monopolies use their market power to force the price higher so as to make more profits. A monopsony is a simple twist on this. It uses its hiring power to force the nurse wage down to improve its profits. The key idea is that it wants the RN wage to be below its competitive equilibrium level.

The expert reader will notice that the curve labeled “Demand” takes on a meaning different from a true demand curve when considering monopsony. But the conclusion is the same. If the wage were fixed at  $W_S$ , the monopsony would wish to hire  $D_S$  nurses, and it has no intention of raising the wage to  $W_E$ .

If you would, now look again at the Figure. The monopsonist hospital forces the RN wage down from  $W_E$  to some lower level. Regardless of where that wage ends up, it will occur at a level at which there is a nursing shortage (excess demand). In this case, the hospital management will complain that it cannot find enough nurses, while at the same time it has no intention whatsoever to pay its RNs more.

### *What Ought Nurses to Do?*

Many speculate over what nurses have in mind. Is it that they just don't get it? Higher wages seem to be an available option. This is clearly the case in the supply and demand model, and if markets were truly monopsonistic, RNs could and should fight back by unionizing. A monopsonist is a big power, and the RNs would need a corresponding big power to offset this. It would be a classic case where unionization is economically justified.

On the other hand, do nurses put the patient above their own interests? In the Figure, the policy advocated by the nurs-

ing association to increase the supply of new nurses would shift the supply curve to the right (how far depends on the specifics of the expansion policy). I have illustrated this shift with new supply curve, Supply 2, the broken line curve. I have shown this shift arbitrarily as one that brought us to an equilibrium at A. We see that more nurses would be working and serving patients at A than at E, but the nursing wage will be lower at A than at E.

Would nurses knowingly give up a nice raise to gain an extra increase of working RNs of  $(D_S - Q_E)$ ? As I mentioned, studies show that enhanced nurse staffs benefit patient health, and it is certain that RNs believe this. Looked at this way, perhaps RNs see themselves as facing a tradeoff between good patient care and higher wages. But my hunch is that's not so. My guess is that the RN leadership first of all believes that higher wages are not effective in drawing nurses into the labor force, and therefore the only way to draw more nurses into the labor forces is to increase nursing school class sizes and to improve nurse working conditions. This is my hunch, but the truth is that I cannot read minds. My own assumption is that higher wages would increase the nurse labor force, probably reducing or eliminating the nurse shortages.