Dr. Aiken discusses the impact of research on nurse staffing. In Part 2, to be published in the November/December 2013 issue of Nursing Economic$, Dr. Aiken will offer her vision for the future direction and impact of research on staffing.

Evidence-Based Benchmarks

Karlene Kerfoot (KK): What difference has the growing body of evidence on staffing made on practice?

Linda Aiken (LA): Most research has had little impact on practice in general, but I would say that 20 years of research on the impact of nurse staffing on patient outcomes has made a big difference on the outcomes for patients and nurses, and managerial and clinical practice. A really good example is the California nurse staffing ratio legislation that was passed as a result of research, and the process that followed which used research to set the minimum staffing ratios that California actually implemented. The legislation improved nurse staffing in hospitals across the state and improved care outcomes of millions of patients and job satisfaction of tens of thousands of nurses. Beyond the very positive effect of the legislation on improving staffing in California, it was also influential in ending a nurse shortage in California.

Additionally, the use of research by the California Department of Health to determine the ratios was very important in establishing, for the first time, an evidence-based benchmark for safe staffing that could serve as a guide for what constitutes reasonable...
staffing to hospitals, nurses, and consumers nationally.

Prior to the California staffing legislation, all of the blue ribbon committees that looked at safe nurse staffing shied away from establishing specific patient-to-nurse ratios. Thus, communicating with stakeholders and the media was difficult without “a recommended number.” The evidence-based benchmark implemented in California of no more than five patients per nurse on medical and surgical units has become “the number” against which to evaluate hospital staffing. Having that benchmark then makes the idea of publicly reportable staffing a more meaningful intervention to promote staffing improvement.

If we had more transparent information on what staffing levels are at hospitals, consumers and nurses could exercise more informed choices in selecting a hospital for care or employment. Also, easily accessible information on staffing would expose hospitals with particularly poor staffing to increased public and professional scrutiny which would be expected to motivate improvements.

Kathy Douglas (KD): Why do you think the California ratios are so controversial even among nurses? There are a lot of nurses who don’t subscribe to that approach.

LA: It’s the legislative mandate aspect that is controversial—not so much the actual focus on safe staffing, or the required staffing levels. Americans tend not to like legislative mandates. We see many examples of that, including the debate over the Affordable Care Act. We value the freedom to make our own decisions. Also, a few of the specific aspects of the California legislation were difficult to implement, especially the “at-all-times” provision.

None of the big unintended consequences nurses were worried about regarding the legislation actually happened, as we have demonstrated in our published research. Hospitals did not substitute LPNs for nurses. There is no evidence that hospitals closed as a result of the legislation. Indeed, there is very good scientific evidence that staffing improved even in safety-net hospitals that had long had poor staffing. I think the evidence is very good the legislation worked, but some still worry about the legislative mandate as a vehicle to move toward safe staffing.

I am not necessarily an advocate of legislative mandates. There are multiple ways to achieve the objectives that have been achieved in California, so I don’t want my enthusiasm for the research and the fact that we know the legislative mandate worked to be interpreted as my personal advocacy for legislative mandates. There are other ways to achieve good outcomes. I am interested in publicly reporting nurse staffing, which I think is more palatable to many stakeholders than legislation mandating specific ratios. There’s no reason why nurses should not be in favor of public reporting of nurse staffing in institutions and more transparency to the public of variation in nurse staffing across hospitals. I think more transparency about nurse staffing would help nurses’ commitments to providing safe and effective care.

KD: I agree. Sometimes people can interpret a pro-ratio stand, and what I am hearing you say is you are pleased with the outcome of the staffing ratios, not necessarily the role of mandates in staffing.

LA: Well, it worked, and there were no big negative consequences. Even folks who are not in favor of legislative mandates should open their minds to the evidence that the legislation did work as intended. I think it’s a mistake for nurses to reject evidence if not to their liking for some reason.

It’s very hard, if not impossible, to conduct rigorous experiments to test the effects of changing staffing in hospitals. The California legislation resulted in a very big natural experiment in whether good things would happen if staffing changed in large numbers of institutions. Research on the California legislation suggests that if you improve staffing, good things happen for patients and nurses. We should take the information we now have and use it to move on to the next range of interventions.

Policy Traction

KD: What thoughts do you have on the gap between advances in our understanding and the application in practice?

LA: We know from research there is significant variation in nurse staffing across hospitals despite 20 years of research. We need to reduce that variation because when we have a lot of variation in any kind of input factor in health care, whether it be staffing, nurses' education, or practice environment, there are adverse consequences for some patients.

Improving transparency about variation in hospital staffing through public reporting holds real promise for helping to improve staffing. The only way we know there are big variations of staffing across institutions is through research. When journalists write about our research, they often ask, “Well, how would I know what the staffing is at my local hospital?” At present, there isn’t any easy way for a consumer to find that out.

I am very excited about the 2013 Safe Nurse Staffing Act, which was introduced in Congress with input from the American Nurses Association (ANA), with sponsors from both political parties: Reps. David Joyce (R-OH), co-chair of the House Nursing Caucus, and Lois Capps (D-CA), also co-chair of the House Nursing Caucus and a nurse, which may not be a big surprise. The legislation does not propose ratios in the
California sense. It proposes public reporting of nurse staffing for posting on the CMS (Centers for Medicare & Medicaid Services) Hospital Compare web site along with other CMS reporting requirements pertaining to hospital performance. Public reporting of hospital nurse staffing on Hospital Compare could motivate significant change in safe staffing practices. Any consumer, journalist, or stakeholder could see the variation across their local hospitals and ask why, which would likely motivate more evidence-based staffing.

Starting years ago with monitoring and feedback to physicians about local practice variations, it has been established that collecting and disseminating information on practice variations is a successful strategy to reduce variation. Variation is reduced because providers bring their practices closer to community norms. Of course, we know in health care there is a lot of benchmarking that already goes on in regards to nurse salaries. We know that hospitals are figuring out where they want to be in the context of nurse salaries in their communities. Public reporting of nurse staffing would offer an opportunity as well as pressure for poorly staffed hospitals to improve. If there was more information and transparency in nurse staffing, we could see that staffing in Philadelphia hospitals, for example, range from four patients per nurse to ten patients per nurse. If the Philadelphia Inquirer published those differences, chances are hospitals that were real outliers in poor staffing would improve. The single biggest thing we could do to close the gap between research and practice regarding staffing is to have improved transparency and information on staffing ratios hospital by hospital.

Clearly we need to do more research on the business case for nursing. While there is very good evidence better nurse staffing improves patient outcomes, many business-oriented people in health care want to know more about financial outcomes associated with good clinical outcomes.

One good example of such research is the paper by Needleman and colleagues (2006) showing that, contrary to conventional wisdom, the conversion of LPN hours to RN hours in hospitals would save both money and lives. Another important piece of research was the paper by Dall and colleagues (2009) that showed for each dollar invested in improved nurse staffing, there was a minimum financial return to the hospital of 75 cents. When all the intrinsic factors like improved nurse retention and higher patient satisfaction are considered, Dall estimated investments in nurse staffing pay for themselves.

The ANA reports almost half of the states have some form of nurse staffing legislation, passed or under consideration, which suggests the body of staffing research is having a lot of policy traction. Five states (New York, New Jersey, Vermont, Rhode Island, and Illinois) have mandatory public disclosure of nurse staffing. Federal legislation is pending that raises the possibility of extending public reporting to all hospitals. Legislation may not be necessary to implement this important proposal. If there is broad support of public reporting of staffing, it seems to me this could be a decision CMS could make. A nurse, Marilyn Tavenner, is now administrator of CMS. Perhaps advocacy to add nurse staffing and more nurse-sensitive performance measures to CMS-required reporting of hospital performance could result in implementation of public reporting of nurse staffing without the need for legislation.

Fifteen states are known to have restrictions on the use of mandatory overtime for nurses. Thirteen identified restrictions in law: AK, CT, IL, MD, MN, NH, NY, OR, PA, RI, TX, WA, and WV. Two states have provisions in regulations: CA and MO. This is another example of policy action resulting from research showing hospitals with long shifts over 12 hours and nurses working over 60 hours a week are associated with increased medical errors and other adverse patient outcomes. So we see a lot of policy traction on staffing research. I don’t think it’s really widely recognized how much policy influence nursing outcomes research has had. If we look at all the kinds of things we study in nursing, this area of nursing outcomes research has had more policy traction than anything else I can think of.

Staffing at Minority-Serving Hospitals

KD: If you could make a wish come true, how would you like to see policy change, based on our understanding of the evidence?

LA: First, I would like to see mandatory public reporting of hospital nurse staffing for all hospitals, preferably by the CMS so it could be included on the Hospital Compare web site, which is accessible and user friendly. Public reporting of hospital nurse staffing would have to identify the hospital by name to have any real effect. That is now being done on performance measures required by the CMS. I would also extend public reporting of nurse staffing to nursing homes and home care via CMS web sites as well. That would be first on my list of things that are doable in the short term that I think would have a big impact.

Second, I would really like to see some targeted action to improve nurse staffing as well as nurse work environments in minority-serving hospitals. We know from research that a contributing factor to racial disparities in hospital outcomes is the disproportionate number of poor and minority patients being cared for in hospitals with substandard nursing.
This is one of the areas of research our team at Penn has been focusing. Our research shows how important nursing is to producing good patient outcomes, and that minority-serving hospitals tend to have less-favorable nurse staffing and poor nurse work environments. Given the evidence base, it could be totally justified to set safe nurse staffing standards that would have to be met by public hospitals and safety net hospitals in order for them to retain their special funding status. Additionally, I would recommend providing targeted resources that help them improve their staffing up to the national mean. We published a paper showing safety net hospitals did substantially improve nurse staffing in California as a result of the mandated ratios, even without financial incentives (McHugh et al., 2012).

I also think it’s very telling that, to my knowledge, there’s not a single minority-serving hospital that has Magnet® status. There is clearly a need to improve nursing in those institutions. This is something I hope we could target in public policy, but I also think the nursing profession needs to set more of a priority on these institutions. We need, for example, some of the Magnet hospitals to reach out and partner professionally with some of these facilities that are having a hard time with their quality of nursing care and help them move along that journey to greater excellence of care. Our research suggests improving work environments is not always about monetary resources, and that information about innovative management and how to involve nurses more in hospital affairs may be just as critical. Therefore, my second big priority would be bringing nursing care in minority-serving hospitals up to the national standard.

Health Care Reform and Staffing

**KD:** What impacts will health care reform have on staffing?

**LA:** The major impact reform will have on institutional staffing is through the CMS value-based purchasing initiative where there are financial incentives for institutions with better performance and penalties for poor performance. That offers a good opportunity for nursing to make real headway in improving nurse staffing and other things that we know are important to patient outcomes because we now have the financial incentives and penalties which alert business-focused managers that nursing can make a difference to their bottom line. Also, with the focus on value-based purchasing, more publicly reportable data are produced that offer nurses new opportunities to establish, through good research, the value of nursing care.

There’s already a growing literature showing, for example, the impact of nurse staffing on patient satisfaction, which is one of the performance indicators that hospitals are incentivized to improve. Hospitals are being penalized for excessive re-admission rates. This will be a boon to nursing if we are active in taking the opportunity to point out the relationship of nurse staffing to the bottom line because of these new incentives and penalties.

Health care reform can be expected to have an important impact on primary care and nurse roles in primary care. It’s already apparent that we have a shortage of primary care providers and the only way to really respond to 30 million new people with health insurance is to maximize full scale of practice of all qualified providers including advanced practice nurses. We can already see the pressures motivated by health reform to remove barriers to full scope of practice for advanced practice nurses. We’ll see a greater demand in the marketplace for advanced practice nurses and more appreciation for their contributions to primary care.

**KK:** As we talk about care in the community, what are your thoughts or suggestions about non-hospital staffing?

**LA:** First, the health care sector is underestimating the potential impact of nursing in hospitals to produce better outcomes on factors of national concern such as high hospital re-admission rates. All of the emphasis now is on reducing re-admission rates by instituting new programs of transitional care from hospital to community and/or initiatives that focus on care coordination in the community.

Research is mixed on whether community-based care coordination initiatives, with the exception of Naylor’s transitional care model, work to reduce re-admissions to hospitals. However, we have a growing body of evidence showing better nurse staffing and work environments in hospitals are associated with lower re-admission rates. One of the things I feel very strongly about is it’s a mistake to assume that with all the resources hospitals have, including nurses, that we can’t get better value out of hospital resources in terms of trying to reduce re-admissions. The research shows better nurse staffing in hospitals is very important to reducing unnecessary re-admissions.

That having been said, the acuity and complexity of care has increased in all non-hospital settings, including long-term care, nursing homes, home care agencies, and primary care. Research is really lagging to understand the impact of nurse staffing and other nursing factors in these settings. This is a high priority for future research. The research should focus not only on the impact of staffing but on the quality of nurse work environments and the education of nurses including whether having more nurses at the BSN and APRN levels is associated with better outcomes.

One of the things we’ve been working on in our University of...
Pennsylvania research program is testing to see whether work environment measures developed primarily for hospitals are valid for studying settings like home health care agencies and nursing homes. If they do work, do we get the same kind of results as we do in hospitals? The answer is yes. The Practice Environment Scale of the Nursing Work Index, which we use to study hospital work environments, is a reliable and valid measure of the nursing work environment in nursing homes and home health agencies. Our preliminary results suggest the quality of the nurse work environment and nurse staffing are very important to patient outcomes in these non-hospital settings.

**Addressing Environment Issues**

**KD:** We have this growing understanding of the importance of environments, and of course your work has contributed greatly to that understanding. Yet when you talk to people in operations, they have a really hard time getting any funding for improving the environment. Do you have any thoughts on how we can make a better business case so nurse leaders can really get their environment issues addressed?

**LA:** This is a very important issue. One difficulty we have studying the work environment is there is no good source of comparable data across a large number of institutions. One of the things we’ve been doing at the University of Pennsylvania for 20 years is trying to develop a simple, straightforward survey of nurses that is feasible to implement without a lot of funding, and that is reliable and valid as an empirical measure. We have succeeded in developing the measure; now a way of including the measure in routinely collected data is needed.

Business people think the nurse work environment is kind of a mushy concept. One thing that is needed to make a better business case is better data on work environments in lots of institutions. To make a business case, it’s hard to use single hospital examples. We really have to do something about trying to collect routine information from all institutions on the work environment. I am very interested in how we can move from research data collection to the inclusion of measures of the work environment in routine data collection.

There are a couple options to accomplish this. One option is to require hospitals to submit annual data from the Practice Environment Scale of the Nursing Work Index to the CMS for the Hospital Compare web site. Then all hospitals will have the opportunity to link these rigorous measures of the work environment to their performance measures and resulting financial incentives and penalties associated with performance. This would facilitate the construction of the business case for improving the work environment.

The performance measures now on the CMS Hospital Compare web site have been associated with the work environment. Both hospital re-admission rates and patient satisfaction, for example, are associated with the nurse work environment and are performance measures that have consequences for hospital bottom lines. So to do this on a larger basis, one would get measures of the work environment added to CMS performance measures. Another would be to more effectively use some of the existing benchmarking systems that hospitals are already involved in.

One example would be the NDNQI (National Database of Nursing Quality Indicators), which now has several thousand hospital members. NDNQI currently offers participating institutions multiple options for measuring the work environment. They should really go to the standard that has been endorsed by the National Quality Forum, which is the Practice Environment Scale of the Nursing Work Environment, so that hospitals are using a common instrument. Next, if the NDNQI would make it possible for researchers, at least, to use the database to study the link between practice environment and performance measures, studies and hence grant applications could have greatly reduced costs. While the NDNQI currently has a process in place for researchers to apply for access to their data, information is provided without hospital identifiers. This makes it impossible to link work environment data to hospital performance measures published on Hospital Compare and other sources.

Looking at the Magnet recognition program as a very successful evidence-based intervention, a very successful catalyst for improving a work environment, is extremely important. Magnet is our best evidence-based intervention for improving the work environment. We have a lot of research now that shows the blueprint developed by the Magnet program results in a better environment and better outcomes for patients and nurses. We published a paper recently showing Magnet hospitals have a mortality advantage because they invest more in appropriate nurse staffing as well as good practice environments (McHugh et al., 2013). Additionally, their better outcomes are also associated with the positive effect of being a Magnet hospital, being part of a culture of excellence, and networking with other hospitals that are committed to innovation. We have a lot of research that shows this Magnet idea is really a catalyst for change. The development of the new ANCC Pathways to Excellence program, which allows smaller hospitals and other kinds of clinical settings to participate in this whole idea of building a program of nursing excellence by improving the work environment, is also going to have a big effect on practice.

*continued on page 253*
An Interview with Linda Aiken
continued from page 220

For all these reasons, it is very important to support the continued evolution of the Magnet concept. It’s not a perfect vehicle, but it works to improve outcomes for patients and nurses. In that context, I am disappointed with some of the nursing unions that have not supported Magnet. The evidence shows staffing, which often is a focus of union concerns, is better in Magnet hospitals, and staff nurse participation in Magnet hospitals is much better than in other hospitals. These are two important goals of unions. Unions have been shortsighted in not realizing that many of the goals of Magnet hospitals are congruent with their interests.

The Magnet program has had an important impact as a catalyst on improving care, not only in Magnet hospitals but also in the many other hospitals that want to be Magnet hospitals. I would say the business case for hospitals having Magnet designation has been made, at least in part, as evidenced by the growth of Magnet applications and the inclusion of Magnet as a criterion for inclusion in some of the leading hospital ranking processes.

For example, the *U.S. News & World Report’s* 100 best hospitals ranking includes Magnet as one of the criteria. More recently, the embracing by Leap Frog, a business-focused national health care quality organization, shows the business community has recognized the business case for Magnet. The advertising of Magnet status by recognized hospitals suggests Magnet status is a recruiting vehicle for patients and staff. The Magnet program is a very important vehicle for motivating and enabling positive changes in work environments that research suggests are needed for improving patient outcomes. $

REFERENCES


NOTE: Read Part 2 of this interview in the November/December 2013 issue of *Nursing Economic*.