Skill Mix and Clinical Outcomes

By Dr. Judith Shamian, RN, PhD

My orientation and education to Operating Room nursing was provided by one of Canada's finest nurse leaders in this field, Ms. Isabelle Adams. In 1980, when I was hired for my first management position at the Jewish General Hospital, Montreal, Ms. Adams was the Nursing Coordinator for the Operating Room (OR). She managed the place with caring and tough hands. She managed the operating room like nothing I've seen since. Consequently, I have had the mentoring experience of watching somebody simultaneously use knowledge, expertise, and the art of management.

I also want to mention and congratulate Dr. Joan Donald, from Mount Sinai Hospital (MSH) in Toronto for completing her Ph.D. Completing a Ph. D. is quite an accomplishment. I believe she is the first Ph.D. prepared nurse with a specialty in operating room nursing in Canada. I am sure there will be many more of you who will be continuing your education and attaining new degrees. In so doing, you will begin to build some of the necessary research and science that needs to be generated in the area of operating room nursing

In my presentation, I will deal with the topic of skill mix, reflecting on research, management, policy and political perspectives. I hope that my comments will be of value to you in lobbying for the right nursing care for all of your patients. Although my interest in skill mix is multi-faceted, it derives primarily from my role as Vice-President Nursing, in an acute care hospital. In this position, it is my responsibility to advise hospital senior administration and the Board of Directors on matters related to patient care. Furthermore, I am accountable to ensure that quality patient care is delivered at all times. I want to assure that you understand that my interest and opinions about nursing skill mix research is grounded in my day to day responsibilities and is not just an academic exercise. My knowledge and expertise in this area has a day to day practical application as I advise the hospital on decisions about management, economics, and care delivery.

The question I ask myself everyday is "what is best for patient care?" How can I ensure that the patients at Mount Sinai Hospital get the best care possible and achieve the best clinical outcomes? Within that context and based on existing evidence, we are able to draw conclusions that formulate our decisions.

Late in 1991, we made a decision at MSH that given the changing health care environment; we needed an all-RN staff. We reached this decision after careful examination of the types of patient populations we were caring for, their acuity and clinical needs, the scope of practice of RNs and RPNs as defined by the regulatory framework, and a review of the research literature.

In the budget year of 92/93 we eliminated all nursing care personnel that were not RNs. This reduction included nursing assistants and OR technicians. I remember the discussions before, during and after the decision. There was opposition to close the OR non-RN positions. Opposition came from within the OR, from both nurses and surgeons, and from sources external to the OR. The reality is that when making a policy decision that is driven by what is best for patient care, there is a moral obligation to see it through to completion. You should not veer from the right decision because of political pressure along the way. To date, six years after implementation, there is an overall recognition that we made the right decision. As we look at how health care in acute care hospitals has unfolded and what kind of care is required by patients, moving to an all RN staff is the right decision. Given the acuity and severity of illness of our patients, we need the knowledge of a registered nurse who can constantly assess, plan, and work with patients and their families. We need to know that we make every effort possible to provide the best care possible. So, my interest in skill mix comes from the perspective of being a nurse executive and a health care executive who is accountable for the care patients receive.

My interest in skill mix also arises from the unfortunate misinterpretation of the value of nursing work by those outside of nursing. One of the most consistent aspects of hospital reform across the country is the dilution of skill mix and the elimination of nursing structures and nurse executives. The national phenomena of introducing unskilled workers to provide direct patient care is going to impact negatively on the quality of patient care. There is an urgent need to have a cadre of well informed individuals that can set the record straight and challenge the faulty assumptions that are driving skill mix decisions.

Finally, I have an international interest in the skill mix issue. Mount Sinai Hospital's Nursing Department is a designated World-Health Organization (WHO) Collaborating Centre. In the context of the Centre, we are involved with many international groups of nurses. In a number of international meetings it was stated that we need studies to prove that "nurses make a difference". The general sentiment was that with such evidence, we could convince policy makers and others of the relevance of professional nursing to health care. Such statements used to infuriate me because there are a significant number of studies that give us the relevant knowledge on the clinical and financial value of nursing.

Following one of these meetings, I decided that the WHO Collaborating Centre at MSH should compile existing evidence in a book to be used by both the public and professionals. In 1996, we published such a book and it summarizes, analyses, and synthesizes the findings of existing research. This document "Nurse Effectiveness: Health and Cost-Effective Nursing Services", provides assistance to those who want to argue the rationale for proper skill mix using relevant evidence. The document has utility in making arguments to politicians, policy makers, nursing and hospital administrators.

What are the skill mix issues in the OR? Your challenge as it relates to skill mix in the OR occurs on at least two levels. The main threat (that I hear you talk about the most) is dilution of skill mix from RNs, to Practical Nurses, and/or to OR technicians, and unskilled workers. This potential shift is a serious issue. I find very few advocates for all RN staff in the OR. In addition, there is a second issue that is quickly emerging. I worry that many of you are so busy advocating for the proper skill mix, that this new issue will catch you by surprise as it quietly emerges in the background. By the time you realize the severity of this threat, it will be an immense and difficult issue to deal with.

What I see is a carving away of your roles horizontally. Look around you and see who is new on the scene, who wasn't there several years ago? Do you have non-surgeons assisting surgeons? Do you have respiratory therapists who are ready and willing to take on any technical role in order to expand their scope of practice? Who else is moving in and creating further fragmentation of patient care? Remember we are committed to holistic care; the more players on the scene, the less holistic the care. Furthermore, the financial envelope is usually sealed, so if new players come on the scene their payment has to come from somewhere else. I would hate to think that you are putting all your energy into fighting for skill mix issues among different nursing groups. Yet while you're focusing on this one area, your role gets diluted sideways. You have to make sure that you keep your eye on the ball in all directions. You might succeed in eliminating the threat of skill mix, but suddenly realize that what you protected was actually a very narrow and unsatisfying dimension, and the whole patient has been fractured - body parts given away to other disciplines. I think you are in a situation where you are being pressured from both sides and it's important to acknowledge and watch for potential changes in both directions. I suggest that you map out the different players in your Operating Rooms and determine how to make sure that your scope of work remains holistic, not fragmented.

Based upon existing research, and on what I have seen so far, the RN is the ideal person to provide the most comprehensive care both in the OR and in acute care settings. So if the basic assumption of holistic,

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non-fragmented care is the desired perspective for OR nursing, then make sure that any changes or new initiatives do not interfere with that basic assumption.

There are a number of strategies you have to consider in attempting to be part of the solution rather than a victim of the decisions. Some of these strategies include:

- Be clear on the issues;
- Participate in decision making;
- Build alliances;
- Be knowledgeable about the relevant research;
- Be knowledgeable about the cost issues associated with skill mix.

Participate in Decision-making

All of us across the country are dealing with downsizing, side sizing, restructuring, reorganizations, and any other form of change one can imagine. These changes come with a sense of urgency. This sense of urgency is coupled with a sense of panic, fear, and the need for rapid decision making. These changes in the system often are not thought out systematically. Often these changes are not grounded in reasoning and evidence. Most often, they are grounded in PERCEIVED (often incorrect perception) benefits—that the change is cost effective. Six to twelve months later when institutions realize that their decision was a poor decision that did not work—or metaphorically, the wrong leg was cut off—they quietly try to put things back in place. The reality is, that even when everything is reinstated to the state of pre-decision, the damage caused within the organization is tragic and may be irreversible. Unfortunately nurses are often the victims of these decisions. Change can happen at any part of the organization but its impact will be vibrated to, and felt at the patient care level. Often these poor decisions can be avoided if nurses and nurse executives participate in the decision-making process. It is extremely important to remember and remind executives that nurses support change, but it needs to be the right change implemented in the right way.

Build Alliances and Relationships

The whole notion of alliances and relationships is undervalue. OR nurses often pride themselves about their wonderful relationships with surgeons. If that is the case, what do you do with that wonderful relationship? Why do you not take advantage of that relationship and use it to educate surgeons of the importance of professional nursing both in the OR and at the bedside? If you are able to recruit surgeons support to the notion of professional RNs in the OR, much of your lobbying work is done. Although you often do not sit at the decision-making table, you would be surprised by how influential your surgeon colleagues are in and out of the boardroom.

Building relationships goes beyond the walls of the OR. As you promote your views of how the OR needs to be staffed, you want to make sure that the nurses in your institution will support you. OR nurses often do not have a meaningful relationship with the nurses outside of the OR. If that is the case in your hospital, it is time to change it. To achieve meaningful and lasting change, you need a coalition with your fellow nurses and nurse executives.

Your professional associations and interest groups, should all be engaged to support your efforts. Do remember that support is a two-way street. If you expect to be supported in achieving your agenda, support these organizations in return. Hence the whole notion of alliances, externally and internally, is extremely important.

Know the Relevant Research

Earlier, I indicated that there is nursing literature and research available that demonstrates the clinical benefits of high ratios of RN skill mix. There is research that dates back more than 20 years. It is not that we don't have the information, it has been in existence for the past 20 years. We simply ignore it and do not use it properly for either decision making or communication purposes. In this speech, I will review a few of these studies. For a more elaborate literature review, consult the document I mentioned earlier, "Nurse Effectiveness: Health and Cost-Effective Nursing Services".

In 1993, Prescott published a review paper in Nursing Economics summarizing thirteen research papers which examined the relationship between clinical outcomes and skill mix. These collective papers demonstrated that with a higher ratio of registered nurses, clinical outcomes are consistently better.

Another study conducted by Linda Aiken (1994) from the University of Pennsylvania, has been examining mortality rates as they relate to a number of nursing factors (skill mix being one of them), nursing organizational structures, and the valuing of nursing within an organization. Aiken's findings showed that 39 magnet hospitals (those with specific positive characteristics related to nursing care delivery) when compared to 149 hospitals (exactly the same in all characteristics, except nursing) had 4.6% lower mortality rates. This means that for every 100 deaths in the 149 comparison hospitals, the magnet hospitals had 95.4 deaths. Magnet Hospitals had 4.6% fewer deaths attributed to differences in nursing factors. There are additional quality research papers on this topic.

It is important to remember that the existing research supports the notion that higher RN skill mix leads to better patient outcomes. Bear in mind that Chief Executive Officers (CEOs) and hospital executives make decisions about who will care for our patients and how much care they will get. The key question is "how are you involved with these decisions?" What information and research are you able to offer? As a matter of fact, we all have an ethical obligation to provide information and shape the decisions as much as we are possibly able. Often times, despite all of our efforts, the decision is not consistent with our values and recommendations. These results should not deter you from repeating the process as many times as needed in the future.

What is The Real Cost of Skill Mix?

When institutions make decisions to dilute their skill mix, the cost calculations are often based on a straight conversion of the hourly RN rates with those of either practical nurses, technicians, and/or multi-skill workers. In some provinces, like Ontario, the difference in beginning salaries between these categories of workers are minimal. A beginning RN makes $17-18 per hour while a practical nurse starts at $16-19 per hour. A technician makes around $17 per hour, and multi-skilled workers start at $13-16 per hour. In some provinces, the salary differences are larger. Nevertheless, in either scenario, calculating the cost-benefit of a staff mix has to be grounded in multiple factors, not just rates of pay. The education cost, replacement cost, turn over cost, productivity cost, the cost of losing experienced staff, and the cost of supervising less qualified employees, are but a few of the areas that need to be considered in the cost-benefit analysis.

We need to examine carefully the de-skilling phenomena and the associated costs. Often the savings come from reducing experienced RNs and hiring replacement staff at the first step of the salary grid. How much has the lost experience cost the hospital? How much will it cost to train these new people? I hear stories from colleagues in the U.S. and Canada, that hospitals have to provide education programs in-house and teach and supervise the clinical experience of the new workers. In addition to the training requirements, the turn over of many of the multi-skilled workers is very high necessitating continuous educational sessions. The recruitment, teaching, and payment of salaries for both instructors and new employees, are all costs that need to be factored into the analysis. It has been shown by a number of organizations that targeted savings have not been achieved. This is because they failed to take into account all of the additional costs incurred. In the end, not only do hospitals not saving anything, they also have less qualified staff to do the work and, they have an unhappy work force.

You know from your personal experience, that in order to become proficient in the OR, it is not enough to go through a four to six-week course. It requires years of learning, education and experience. So how much does training and education cost? How much does the supervision of new people cost you?

The concept of productivity is another area that hospitals often do not understand and do not factor into their calculations. A recent Canadian study by Linda O'Brien-Pallas (1994) of the University of Toronto, examined the productivity levels of RNs, practical nurses, and multi-skilled workers in nursing homes. The study findings indicate that the RN is the most productive worker among the three groups, followed by the practical nurse. The least productive worker was the multi-skilled worker. This finding implies that you get the least work per hour from the multi-skilled worker, and you get the most work from the RN. These findings are probably related to the fact that the RN is the most diversified worker among the three. The RN can do all of the functions that the other two categories can do, and will do so with a holistic, patient-family centered approach. The practical nurse can do fewer activities than the RN. The multi-skilled worker can do the least. I believe that all three groups of employees (RNs, practical nurses, and multi-skilled workers) are willing to work. I am not taking issue with the sincerity and hard work of any health care worker. But you can only do what you are educated and allowed to do. But if there isn't any work that you are capable of doing and permitted to do, then you are non-productive. And I, as an executive, pay you for being non-productive. And then I pay overtime to the registered nurse because she needs to do the work that the others cannot do. So, when you start to stretch the skill mix at the unit level, you realize that this "wonderful" cost-saving decision that was made—to hire less qualified workers with an hourly rate that is $1 to $10 cheaper - becomes a non-cost effective exercise.

Quality effectiveness also needs to be factored into cost effectiveness. Studies demonstrate that there are

lower levels of adverse affects like pneumonia, decubitus ulcers and other complications, when there are higher ratios of RNs. Fewer complications result in a lower cost per case. Length of stay is another factor that has been shown to be associated with RN ratios. A higher ratio of RNs lead to reduced lengths of stay (American Nurses Association, 1997). Decreasing lengths of stay is highly desired by hospitals and can lead to cost effective management.

Often times the argument you hear from hospital executives is that they had no choice but to reduce the RN complement because the nursing budget is the largest budget in the hospital. The other side of the same coin is that nursing salary budget (excluding non-nursing personnel who are charged to nursing cost centres) is more like 25%-40% of the salary budget, a far cry from what executives argue. Furthermore, in our experience at MSH with all RN staff, every time that our patient care costs are compared to other hospitals with a diluted skill mix, we at MSH have not been the most expensive nursing cost centre. We usually sit at the mid range of costs, or below. More than half of comparison hospitals spend more than we do on nursing services and have a lower professional skill mix. The earlier discussion about the true cost of skill mix could explain these interesting findings. All in all, it is safe to repeat again that an all RN staff is both a cost and clinically effective approach to patient care staffing in acute care settings.

In order to make an all RN model work, nurses need to be willing to be part of the solution of cost cutting. Every hospital in Canada has been facing serious budget cuts that are imposed by external forces. Hospitals do not have the privilege of refusing to reduce their budget. We also are not interested in moving into a private health care system where we can charge patients to make up for lost income. The reality of hospitals, boards and executives is that government budget cuts have to be absorbed and reductions in expenses have to take place. Many hospitals turn to the skill mix solution as a cost reduction method. It is clear that, such an approach is not preferred by RNs because it compromises the quality of care. What are some alternative solutions that you can put forward as potential solutions to reduce expenses?

It is essential to understand that any significant budget cut in a hospital will be associated with layoffs. Maintaining an all RN formula does not guarantee that no RNs will be laid off. At MSH, we had to reduce some services to meet our budget targets, and in doing so, closed a number of nursing positions which resulted in the layoff of RNs. Remember that this is about doing the right thing and maintaining quality and cost effective care with the most qualified nursing staff. This is not about how can I protect every nursing position (although it would be wonderful if we could do it).

Here are some of the solutions that I hear of from my colleagues that have been implemented at MSH, and which have helped to trim budgets, while maintaining the professional nursing complement.

Center diagnostic and therapeutic aspects of patient care in the hands of the nurse caring for the patient: including IV therapy, blood taking, ECG, respiratory therapy and other activities.

Care delivery: Institute Primary Nursing, this will eliminate the need for additional nursing coordination of care. The Primary Nurse and associates will do all the care coordination.

Unit Management: With all RN staff, the staff should be expected to have the professional knowledge and skills so that they will require less supervision and guidance. This will allow for a reduction of the overall nursing management complement.

Nursing Support Staff: In an all-professional staff environment, there is a reduced need for professional staff of clinical instructors and others. These roles can be taken on as needed by staff.

Equipment and supply: Active involvement in determining what supplies are needed and determining whether certain items can be replaced by less expensive products.

Non-nursing tasks: Reduce non-nursing tasks from nurses work (e.g., transcribing orders, running specimens to labs, passing food trays, stocking carts).

Patient Management: Many in-patient days can be saved by having a pre-admission unit, day surgery program, clinical utilization program, home care program and other initiatives.

OR: In the OR, the way surgical minutes are being managed is an important area to examine. How many minutes a day are being wasted because of delays of surgeons, anaesthesiology, room cleaning, patients delays etc. All these delays are costly since staff is being paid to stand idle (non-productive). If those unused minutes were shaved off, the OR could be run with a lower budget.

Staffing: staffing is a sensitive and difficult area. It is essential to strike the balance between having the needed staff and having excess staff. Different methods of on call, sharing staff among like units and other strategies need to be explored in order to achieve maximum use of available resources.

These are some of the areas in nursing units that need to be examined and considered as possibilities for cost reduction.

Conclusion

Although the changes in health care are enormous, I believe there are also enormous opportunities, and the only time that you make serious gains is when there is enormous chaos. Being able to stay focused and take advantage of opportunities will be critical. When there is a lot of money and everyone can do anything they want, our tendency is to make everybody happy. So you want five more respiratory therapists, here are five more. You want 10 more of this; here are 10 more. Money is used to solve problems. There are opportunities today - take advantage of them. There is a Jewish saying: "Time doesn't go by, me go by time." So when you look at what you're doing and where you're going, it is you walking through time and shaping that time. It is not time that passes by you. I am confident that all of you will put this information to good use.

The notion of anyone feeling like an insignificant player in a large organization is not acceptable to me. Each of us has an enormous ability to make a difference. By generating good ideas, each of us is a pearl, and together we create a wonderful necklace. ■

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