Fact Sheet

Skill Mix

Introduction

In the context of the global nursing shortage and rising health care costs; governments, policy makers and managers continue to seek new strategies to deliver safe, effective and efficient patient care.[1] Determining the most effective skill mix within the health care team, whether it refers to a combination of skill or competencies possessed by an individual, the ratio of senior to junior grades within a single discipline or a combination of different types of staff within a multi-disciplinary team, aims to achieve the mix of skills required to deliver quality care in the most effective and efficient way.[2] This will vary according to specific needs, resources and capability of health care institutions and will be influenced by the availability of staff as well as the level of knowledge, skills and responsibility required at each level of the health service.[3]

What is Skill Mix?

Skill mix has been broadly defined as the combination or grouping of different categories of workers that is employed for the provision of care to patients. It can be applied to broad (e.g. national) macro level planning or micro level in the context of local service delivery. It can refer to:

- a combination of skills available at a specific time;
- a mix of posts in a given facility;
- a mix of employees in a post;
- a combination of activities that comprises each role;
- differences across occupational groups such as nurses and physicians or between various sectors of the health system; or
- a mix within an occupational group such as between different types of nursing providers with different level of training and different wage rates.[4]

Optimising the Skill Mix

A variety of approaches or combination of approaches has been used to determine the most appropriate skill mix. Quality care, patient's safety and cost effectiveness should be the driving force behind any skill mix model.[5] The American Nurses Association in its guidelines for managers describes the three principle factors as follows:[6]

- **Patients care related –** considers the number of patients, intensity of care as well as patients' physical and psychological state.
- **Staff related –** includes staff experience, education, skills, level of control over patient and degree of involvement in quality practices.
- **Organisational factors –** related to effectiveness and efficiency of support services, access to timely patient information and safety of work environment.

The ICN tool kit on *Safe Staffing Saves Lives* can also be a useful guide in determining the right and optimal skill mix.[7]

Skill Mix and Task Shifting

Implementing a new skill mix may involve task shifting where individual elements of care are undertaken by a different cohort of staff. Examples include the expanded role of mental health nurse practitioners in treating depression and anxiety disorders and assessing patients who are receiving anti-psychotic injections[8] and nurses in advanced roles making specialist referrals. As well, certain tasks may be shifted from nurses to less qualified staff such as health care assistants or administrative workers. The World Health Professions Alliance (WHPA) representing more than 25 million health professionals worldwide and where ICN is a major partner have set up key principles for task shifting, as outlined in the following table:[9]

Principles for Task Shifting – WHPA 2008

Skill Mix Decision	Skill mix decision should be country specific and take account of local service delivery needs, available resources, training capacity and including health professionals in decision making
Role Competency	Roles and job descriptions should be developed on the basis of competencies required for service delivery.
Systems and Supports	There needs to be sufficient health professionals to provide the required selection, training, direction, supervision and lifelong learning of staff at all levels
Role Complementarity	Assistive workers should not be employed at the expense of unemployed or underemployed health professionals.
Planning and Monitoring	There must be adequate planning and constant monitoring to avoid the danger of generating a fragmented and disjointed system that fails to meet the total health needs of patients and may lead to de-motivation and attrition.
Regulatory Needs	Regulations for assistive personnel and task shifting need to be set with the profession fully involved. It should be clearly stated who is responsible for supportive supervision to assistive personnel.
Compensation and Workplace safety	Assistive personnel need compensation and benefits that equal a living wage, a safe workplace and adequate means to ensure their own safety and that of patients for whom they are caring.
New Demands	Deploying assistive personnel will increase demand on health professionals' responsibilities as trainers and supervisors.
Economic Analysis	There needs to be credible analysis of the economic benefit of task shifting to ensure equal or better benefits in health outcomes, cost effectiveness, productivity and efficiency.

System Quality Monitoring	When task shifting occurs in response to specific health issues such as HIV, regular assessment and monitoring should be conducted on the entire health system. It is essential to ensure that programs are improving the health of patients across the health care system and not resulting in unplanned or unforeseen iatrogenic effects.
Sustainability	Where task shifting is meant as a long term strategy it needs to be sustainable. If it is meant for a short term, there needs to be a clear exit strategy.
Worker Integration	Assistive workers need to be integrated into health care delivery system and considered as part of the team

Skill Mix and Patient Outcomes

While research sometimes offers conflicting results, the vast majority of studies show that a richer mix of health personnel is linked to better patient outcomes, higher patient satisfaction, greater cost-effectiveness and fewer complications and adverse events.

- A study conducted by Roy Carr Hill *et al.* of the University of York in 2008 revealed that grade mix has a direct effect on quality care where it is observed that there are better patient outcomes and satisfaction with higher qualified staff as compared to when less qualified staff provide care.[10]
- According to observations made by Dr Tso Ying Lee *et al*. of Taiwan, an optimal balance of registered nurses to health care aides can reduce cost with no significant differences on incidences of patient's fall and medication errors.[11]
- A study conducted in Ontario by the University of Toronto Canada (2003) revealed that a skill mix system with higher registered nurses have better results on patient outcomes and satisfaction at the time of discharge with lower rate of medication error and wound infection. However no marked differences were noted at the time of their six weeks' review.[12]
- Increasing the role and deployment of clinical nurse specialists and nurse practitioners has improved quality care and reduced organisational costs.[13]
- Nurses have provided effective medical care equivalent to that provided by physicians in primary settings and maternity wards.[14]
- Nurse practitioners provided more relevant information than doctors and spent more time with patients, thereby increasing patients' satisfaction.[15]
- Using patient care assistants and nurse aiders has effectively reduced cost with no adverse effects on patient satisfaction.[16]
- Introducing appropriate new cadres in the skill mix system has been quite effective especially in remote areas where it is difficult to recruit and retain health professionals.[17]
- In the NHS (UK) it is strongly believed that 30 to 70% of work performed by doctors can be carried out by nurse practitioners with cost effective benefits.[18]

However, decreased quality care, high turnover among less qualified staff, increased workload and supervision for registered nurse have been noted in certain places where skill mix has been introduced.[19]

Implementation Issues

Issues should be considered in seeking to implement skill mix changes,[20] including: -

- The implication for the regulatory framework and if change is required, how it will be applied;
- Quality management and systems for evaluation and review;
- The skills, capacities and demographic characteristics of the existing workforce;
- The nature and availability of health care worker supply;
- Training and development requirements and capacity
- Change management and communication;
- Supervision arrangements and professional development;
- Work environment and safety;
- Cost associated with implementation and ongoing support; and
- Implication for employment arrangements and industrial relations issues.

Conclusion

Skill mix and task shifting have existed since the establishment of multi-disciplinary health systems. However, the global shortage of employed nurses has given rise to numerous challenges that require innovative actions to determine the most appropriate staffing patterns and models without compromising quality care and patient outcomes. An effective skill mix of health care personnel within a functioning referral health system can be a panacea in this era of scarce health human resources.

For further information, please contact: ichrn@secretariat.org

The International Council of Nurses is a federation of 133 national nurses' associations representing the millions of nurses worldwide. Operated by nurses for nurses, ICN is the international voice of nursing and works to ensure quality care for all and sound health policies globally.

The International Centre for Human Resources in Nursing was established in 2006 by the International Council of Nurses and its premier foundation the Florence Nightingale International Foundation. The Centre is dedicated to strengthening the nursing workforce globally through the development, ongoing monitoring and dissemination of comprehensive information and tools on nursing human resources policy, management, research and practice.

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