Regulation, roles and competency development
Issue paper

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About the Author

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The author alone is responsible for the contents of the report and conclusions.
Executive Summary and Recommendations

This paper aims to provide an overview of the current evidence and opinion concerning the workforce implications of regulation, competency development and role definition. These three elements are inextricably linked to each other and are fundamental to the practice of nursing in today’s environment. Retrieving the evidence for this inquiry was difficult in some cases and, in the main, the literature reviewed was derived from Anglophone countries.

The stated purpose of health professional regulation is to protect the public and one of the ways of fulfilling this mission is to ensure that the health professionals being regulated are competent to practise. Employers and health service administrators also have a responsibility to ensure that the health professionals they employ are competent to provide care which is at a standard acceptable to the public who are recipients of that care. Defining health professional roles is an evolving process as they adapt to new technological developments which, in turn, create the need for new roles in health care. Linking competencies for nursing roles with education and regulation is essential if nurses are to provide care which is competent and safe.

Existing models of regulation such as regulation by statute, voluntary regulation, central government regulation, self-regulation, and umbrella regulation are explored. The impacts of mutual recognition agreements (MRAs) for nurses, such as a diminution of standards for registration, are a threat for nurses. Other forms of regulation such as mandated nurse:patient ratios are also discussed.

Initial and continued competence are particularly relevant today as there is pressure by the public for more transparency in health professional regulation and for greater consumer involvement. This has implications for the trio of educators, regulators and employers. If the notion of regulation in its broadest definition is viewed as the starting point and safe competent care as the end point, the other elements such as education of nurses, initial and continuing competence, employer responsibilities, role definition, overlap and skill mix all interact to reach the end point. What is unambiguous in this rich interplay is the obligation and responsibility of professional nursing organisations to participate in all of these elements.

The development of competencies in a number of settings, including the employment setting, is explored. International competency development and its implications for the movement of nurses globally are also discussed.

Skill mix, new roles and role overlap all have implications for regulation and competency development. New roles, such as that of the nurse practitioner and its impact on patient outcomes, are discussed. Physician:nurse substitution and nurse:unlicensed assistive personnel substitution, and their cost-effectiveness and impact on patient outcomes, have implications for the workforce of the future. Delegation of nursing care and its relationship to regulation is particularly important in this context. Other clinical roles are briefly mentioned.
Recommendations

In summary, the key implications for the nursing workforce are as follows:

1. In order for professional self-regulation to be sustained, consumers must be part of that regulation.
2. Nursing regulation needs to be transparent and flexible enough to reflect the changing work environment and the development of new roles.
3. The boundaries of regulation – professional self-regulation and its interface with other forms of regulation – need to be defined.
4. In an environment of increasing globalisation, registration processes need to be sufficiently flexible to accommodate nurses from other countries.
5. The nursing profession must remain vigilant to ensure that new models of regulation, such as umbrella legislation, and trade agreements do not erode nursing standards or diminish nursing identity.
6. Nurses need to remain competent throughout their working lives and, to achieve this, there is a need for the development of assessment methods.
7. Nurse education programmes at undergraduate, postgraduate and continuing education levels need to be developed jointly by employers, regulators, and the nursing profession.
8. The structural elements of nursing curricula need to be inherently flexible to enable adaptation to changes in service delivery.
9. Some aspects of nurse education should take place in collaboration with other health professionals, particularly in specialties where multiple health professionals practise side by side.
10. Shared competencies between nurses and those with whom their roles overlap need to be developed.
11. In order for nurses to be equipped to take up enhanced roles, all nurse education programmes need to be pitched at a level commensurate with other health professionals.
12. In this era of increasing nurse migration, international competencies need to be evaluated regularly with an established updating cycle.
13. Skill mix research needs to include the effects of changed roles on clinical outcomes.
14. The introduction of changed nursing roles needs to be negotiated with both the profession and nursing regulators.
15. There is a need for more research on the cost implications of different skill mixes, taking account of variables such as the different salary and other employment conditions of different categories of health professionals.
16. Methodologies that enable application in a wide variety of settings need to be developed that can accurately assess long-term patient outcomes and patient satisfaction.
Introduction

The health care milieu is in a constant state of flux as it responds to technological, demographic and epidemiological imperatives. Funders of health care strive to contain health costs and more governments are entering into trade agreements with other countries.

In recent times we have also seen a greater emphasis on patient safety and quality of care. Shortages in the nursing workforce are growing at the same time as national borders become more porous and workforce mobility grows. Consumers are demanding more transparency in the way care is delivered and in the manner in which health professionals are regulated. The shortage of nurses is a confounding factor in the pursuit of safe patient care. Humphris and Masterson (2000) cite the following factors as being in the forefront of the pursuit of greater safety in health care:

- A greater vicarious liability on the part of employers for the protection of patients;
- An increased emphasis on clinical governance which places a greater responsibility on employers to ensure that their employees are competent;
- An increase in the interest and involvement of consumer groups in health care;
- Changes in the way quality is maintained within professional education;
- An increase in the number of nurses working outside the National Health Service (NHS).

The last point relates specifically to the United Kingdom (UK), but this situation can be compared with many other countries where there are multiple employers of nurses. Whilst hospitals remain the major employers of nurses, the different settings where nurses are employed are becoming more diverse and include self-employment. Thus the traditional supervisory hierarchical nature of nursing employment is disappearing.

This changing environment has implications for, inter alia, the regulation of health professionals; the skill mix of nurses in various settings; the definition of the nursing role; and the educational preparation of nurses to provide them with the necessary competencies to deliver care in a time of rapid change.

This paper aims to provide an overview of the current evidence and opinion of the workforce implications of regulation, competency development and role definition. These three elements are inextricably linked to each other and are fundamental to the practice of nursing in today's environment.

The stated purpose of health professional regulation is to protect the public and one of the ways of fulfilling this mission is to ensure that the health professionals being regulated are competent to practise. Employers and health service administrators also have a responsibility to ensure that the health professionals they employ are competent to provide care, which is at a standard acceptable to the public who are recipients of that care. Defining health professional roles is an evolving process as they adapt to new technological developments which, in turn, create the need for new roles in health care. The consequent changes to skill mix in this context need to be carefully negotiated. Linking competencies for nursing roles with education and regulation is essential if nurses are to provide care which is competent and safe.

Retrieving evidence has been difficult in some areas as there is little in the way of available instruments for evaluating nursing roles and the linkages between competence development, education and training, regulation and safety and quality. Changing undergraduate educational curricula, developing continuing education programmes, amending health professional legislation and enacting new legislation necessarily follow changes in the health care environment. However, as the pace of change both within the health system and in society
at large has increased, the challenge for employers, educators, regulators and the nursing profession itself is to respond to these changes in a timely and considered manner.

Researching the elements of the workforce implications of regulation, competency development and role definition requires funds and the nursing workforce has not always been high on the research priority lists. The impetus for funders to undertake this research in a context of adequate supply of nurses simply was non-existent. This is changing. Because of the threat that productivity gains may be impeded, the future of the health workforce, particularly the nursing workforce, is somewhat precarious, and governments and other funders are now being forced to address these issues.

**Methodology**

A review of the literature shows an overall paucity of evidence based on research findings, case studies and other information in these fields. There are some meta-analyses of skill mix and many articles used are based on research outcomes. Other articles are opinion supported by published material. When quoting studies, the basis for the information is provided. Articles based on opinion are included as the information they contained appeared to be carefully considered. Conference papers were also included as was the author’s overall knowledge of various aspects of the topics based on experience in a number of health system arenas.

Although a small number of articles in languages other than English were reviewed, they provided no relevant information; therefore, only literature in English was used. In the main, information has been drawn from the UK, United States of America (USA), Canada, Australia and New Zealand with a smattering of authors working in Europe and other countries. However, in the field of regulation, the Anglophone countries are by no means homogeneous in their regulatory approaches.

The methodologies used to garner the information contained in this paper are as follows. A literature review was performed in two stages; first, a broad scoping literature search was conducted covering the period 1994 – 2004; and, second, a literature search focusing specifically on the period 1999 – 2004. These searches focused on material published in English, French and Spanish, and were conducted using the following databases: PubMed, Medline, CINAHL, APAIS (Australian Public Affairs Information Service), and APA (Australian Public Affairs). In addition, searches were conducted via the World Health Organization library database (WHOLIS). The search terms used were: ‘competence’, ‘curriculum’, ‘skill mix’, ‘role definition’, ‘regulation’ ‘nursing workforce’, ‘education’, and ‘training’. 
Section One: Current Trends in Nursing Regulation

A recent review of the trends in regulation undertaken by the International Council of Nurses (ICN) (Oulton 2005) revealed the following:

- Interest in self-regulation is still growing among the health professions but not so among the legislators;
- Governments are keen to limit the power of the health professions;
- Umbrella or omnibus legislation is growing in popularity;
- There is growing interest in MRAs on the part of nurses, employers and governments;
- Continuing competence is vital;
- There is increasing scrutiny of education and practice settings in the context of regulation;
- Regulation of specialist and advanced practice nursing is increasing;
- The participation of lay or consumer representatives in regulation is growing;
- There is an increasing emphasis on competency as opposed to credentials.

Drivers of regulatory change include the global nursing shortage, current practice environments, public demands, governments’ interest in changing health professional roles, migration and trade liberalisation and other features of globalisation.

The purpose of this paper is to explore these trends and their implications for the nursing workforce.

Historical overview of nursing regulation

Regulation, along with professional standards and socio-economic welfare of nurses, constitute the three pillars of the mission of ICN. Indeed in the 1980s, ICN undertook a major initiative to strengthen nursing regulation throughout the world, with an emphasis on removing barriers to nurses being engaged in the delivery of primary health care. This focus was supported by the World Health Organisation (WHO). With the 1986 publication of the ICN Report on the Regulation of Nursing, the purpose and elements of nursing legislation were clearly articulated. It became a global guide, particularly for countries without nursing legislation and in pursuit of legislative governance for nurses.

Regulation by statute of the medical profession began in the UK in 1858 (Davies 2004). Statutory regulation of nursing followed, with the first being introduced into law in New Zealand just over 100 years ago. Many nursing acts in developed countries were then passed in the early part of the 20th century. The primary driver for the initial health professional legislation was to identify bona fide health professionals and to create standards for entry into the profession. The purpose changed to protecting the public and now is moving towards being in the public interest, which is broader in application and includes quality assurance and maintenance of clinical standards.

While there has been statutory nursing regulation in many countries for many years, there are still countries with no nursing regulation or rules or other regulatory mechanisms emanating from the government. Countries in the Middle East, such as Oman, Jordan and Yemen, are currently working on regulatory frameworks for nursing. In some countries, there is provision for nursing regulation either in statute or in other systems of rules; however, for various reasons, it is not enacted or enforced. Chile is an example as, although it has a system of nursing registration, it is not compulsory. In the European Union, there is a nursing sectoral directive, which establishes a legal framework for the practice of nursing.
Additionally, countries in the developing world may have additional goals for their nursing regulation such as, in the case of Nepal, a desire to improve both the quality of nursing care and the status of nurses. The impetus for regulation came from the senior ranks of nursing. Their primary aim in lobbying for nursing regulation was to legitimize the nursing role in line with the situation in other developed countries and with the medical profession in Nepal.

By contrast, the developed countries, especially those with advanced technologies, have focused their regulatory development since the mid-1980s on issues such as telemedicine and mutual recognition. The focus has moved more recently to the clinical practice of health professionals especially in the context of adverse events. The Bristol Enquiry in the UK uncovered systematic sub-standard medical practice in the field of paediatric cardiac surgery, which brought the issue of health professional regulation into the public eye (Davies 2004). The Shipman Inquiry further exposed the shortcomings of health professional regulation (Smith 2004). With an added focus on patient safety in developed countries, the role and function of health professional regulation is again in the spotlight. In the UK, there has been a call for more transparency of health professional regulation with increased community participation, probably as a partnership or compact with the profession being regulated.

One of the primary functions of a health professional registration board is to provide the public with safe practitioners. In order to do this, the board has considerable interest in the undergraduate education programmes, which prepare practitioners for registration. It also has an interest, to a greater or lesser degree, in specialist programmes, as well as continuing education offerings. Employers, as well, have a considerable interest in basic education programmes, as it is they who employ the graduates of these programmes to provide health services. One of the links between regulation and education is the development of competencies upon which a curriculum is based in order to produce a graduate able to practise at a standard, which meets the expectations of the registration board, the employer and the profession.

The role of nurses is evolving as the profession responds to demands of the health system and employers. This has implications for registration boards, educators of nurses and employers. As mentioned, registration boards and educators need to respond to these changes in order to maintain standards and to produce graduates who possess the competencies to practise in new expanded roles. As the role of the nurse moves into new activities, inevitably there are pressures for aspects of that role to be taken up by other less qualified health workers. Delineating the boundaries in this area is difficult and may give rise to professional demarcation disputes. In addition, there is the need to define the required skill mix of health professionals within health services. This is often driven by economic factors.

Registration boards have an interest in role expansion as they need to be assured that nurses are adequately educated and have the competencies to function in the expanded role. The best contemporary example of an expanded role is that of the nurse practitioner and, in most countries where this role has developed, there are established processes to ensure this. However, advanced nursing practice is more amorphous and not simple to categorise.

Underpinning all the elements required to produce a competent practitioner – in this case a competent nurse – is the imperative of safety and quality of the health services. Of course, there are other elements which contribute to safety and quality of care such as clinical governance and adequate resourcing of health services; but structures, such as educational curricula based on competencies and standards for registration, are fundamental elements.
Whilst registration boards have defined standards and requirements for initial registration, their involvement in continuing competence of their registrants is more problematic. Ensuring that nurses are competent to practise when they register is controlled and defined. However, devising procedures or programmes for ongoing competence is difficult, especially in the context of the numbers of nurses in practice and the wide variety of specialties in which they function. Employers have a significant interest in employing competent nurses, not the least being their accountability for the torts of their employees. Continuing education programmes are one element in ensuring continuing competence. Competencies produced by specialty nursing groups and credentialing organisations are useful for the areas of practice they address, but not all nurses function in specialty areas. Moreover, competency development must remain an iterative process if the competency standards are to remain current. Attempts by registration boards to ensure ongoing competence of their registrants will be discussed later in the paper.

Types of nursing regulation

Regulation by statute or by government decree?

There are various models of nursing regulation. The most common is regulation by statute, which provides for a governing body or council and outlines provisions for registration and discipline. In some countries, the government regulates nursing centrally without actual legislation; in others, nurses are included in regulatory arrangements for all health professionals. Central regulation by government can be limiting as it often has no reference to the profession being regulated and, therefore, may not facilitate the development of relevant standards for regulation. It can also be mechanistic in its application.

Responsibility for regulation can lie with the professional body, as is the case in some Latin American countries. In the USA, Canada and Australia, all of which are comprised of states, provinces or territories with varying degrees of autonomy, there is no central or national regulation; though these countries all have some degree of mutual recognition for nursing registration purposes. In Poland and the Slovakia, where nursing legislation is relatively recent, the self-regulation component is very evident.

Self-regulation

For those health professions regulated by statute, the traditional model has been self-regulation. Self-regulation has been defined as having two components – mandatory and voluntary (Percival 2001). The mandatory component is described as the statutory/legislative framework of professional regulation; and the voluntary component is the onus on the individual nurse to practise within the bounds of codes of ethics and conduct and according to agreed standards. The latter component implies that nurses are participating in self-regulatory activities, such as continuing education, and ensuring that they are competent to practise (Percival 2001). As already mentioned, the commonly stated purpose of protection of the public is inherent in the model of self-regulation.

However, Davies (2004) asserts that the assumption that self-regulation would protect the public is now no longer appropriate following the exposition of both the Bristol and Shipman cases in the UK. (The Bristol case refers to the high death rate in paediatric cardiac surgery due to surgical incompetence at one hospital in Bristol, while the Shipman case refers to the revelations surrounding Dr Shipman's practice whereby he was found guilty of murdering up to 250 of his patients.) Following these events, politicians, supported by the media and the public, clamoured for a more transparent approach to performance monitoring and access to information about an individual health professional's practice. Whilst these events concerned the medical profession, nurses and other health professionals were inevitably caught up in the subsequent debate.
It could be argued that the Bristol case was primarily a failure of clinical governance rather than of statutory self-regulation. Nevertheless, the publicity that followed both Bristol and Shipman resulted in a political solution of changes to statutory self-regulation of all health professionals.

In the USA, the Citizen Advocacy Center (CAC), in response to work undertaken by the Institute of Medicine on the need to ensure continuing competence of all health professionals, (expanded upon later in the section on continuing competence) has produced a road map for this purpose. Central to the success of this road map is the notion of collaboration with all stakeholders. Many registration boards or councils now have consumer membership to a greater or lesser degree. Whilst it could be argued that consumer participation detracts from self-regulation, consumers will no longer tolerate a ‘closed shop’ approach to health professional regulation. The challenge is to maintain a balance between consumers of health care and the profession being regulated. To do otherwise is to attract political attention, which could result in the demise of self-regulation.

This notion is supported by Salter (1999) in an article on self-regulation of the medical profession. He is concerned that, if medicine fails to deliver changes in its governance which then translate into further medical failures, the locus of the public’s attention will fall on the Government, which has taken over the role of providing clinical governance through the establishment of a number of regulatory bodies external to self-regulation. Whilst the focus of Salter’s article is the medical profession, it can be equally applied to nursing and has implications particularly for continuing competence and for nursing being practised from an evidence base.

Voluntary regulation
Voluntary regulation is also a feature of nursing. Examples of this are various credentialing bodies established by professional nursing organisations and the systems established to record participation in continuing professional development. Credentialing systems have been developed primarily for specialty and advanced practice and are firmly established in a number of countries, the chief one being the USA. Other forms of voluntary self-regulation, such as measures aimed at continuing competence (e.g. participation in continuing education) are also quite widespread. Professional nursing bodies, particularly those established for specialist nurses, have also developed standards for practice, which provide the basis for specialty competencies.

Umbrella health professional legislation
To a degree, the type of the regulatory head of power is not as important as the processes and nature of regulation. A recent development in the regulation of the health professions is the introduction of umbrella legislation, which applies to all regulated health professions. A number of countries have introduced such legislation, including Hungary and the UK. In the latter, the Nursing and Midwifery Council (NMC) is established under the aegis of a Statutory Instrument rather than specific legislation, as was formerly the case. A new regulatory body – the Council for the Regulation of the Health Professions - provides oversight of the actions of the NMC. The effect of the Statutory Instrument is that it can be altered without reference to the Parliament. Thus the provisions within the Instrument can be readily changed to reflect the changing health care environment. However, the negative aspect of this flexibility is that the governance of nursing can be affected without due process or reference to a wider audience.

Despite having no legislation as such, Ethiopia’s health professionals are governed through their Ministry of Health by a health professional council. In the Asia Pacific region, the Northern Territory in Australia has umbrella health professional legislation and the Australian Capital Territory is in the process of doing so. The New Zealand Government has been considering umbrella legislation for all health professionals for some years and recently passed the Health Professionals’ Competency Assurance Act (HPCA). This legislation replaces 11 health occupational regulatory statutes. One of the stated reasons for introducing this legislation is that most of the statutes were old and inflexible and unable to accommodate changes to practice, which had occurred as a result of technological change.
In addition, the other major change in New Zealand is that there is an emphasis on health professionals’ competency. The Government is also keen to establish consistency between the professions and draw up a list of tasks, which could only be carried out by those licensed to perform them. The HPCA makes provision that:

- Registering authorities be responsible for ensuring practising practitioners maintain their competence;
- Registering authorities be empowered to determine the requirements for registration;
- The registration and disciplinary functions have lay participation;
- Separate independent registering authorities for the different professions be continued;
- Profession-specific provisions be provided for (Ministry of Health New Zealand 2002).

The benefits of a single act are described as being consistency, flexibility, transparency, and simplification of regulating new professions. It is left up to the individual registering authority to determine the qualifications and competencies for each separate profession. In addition, the scope of practice for each profession will be determined by the individual registering authority. However, scopes of practice will not necessarily be mutually exclusive between the professions. Where there are professionals from more than one profession qualified to provide the same service, such as can occur between nurses or midwives and medical practitioners, then consistent standards and competencies are to be agreed upon. In the situation where there is a dispute between professions about roles or specific tasks, the Minister for Health will be called upon to arbitrate (Ministry of Health New Zealand 2002:1-6). The enhanced provisions for the ongoing competency of health professionals in New Zealand are discussed in the section on competencies.

There are several workforce implications of umbrella legislation for nurses. On the face of it and from a government’s viewpoint, umbrella legislation is expedient and perceived as being good policy and perhaps common sense. However, there are differences between all the health professions and most have their own idiosyncrasies. For example, a large number of health professionals practise independently to a greater or lesser degree, while the majority of nurses are still employees. Some professional groups, such as dentists, have very specific tasks which they can undertake and there are also grey areas in their practice where it overlaps with medicine. Similarly, this grey area exists between nursing and medicine. Therefore, it is important for nurses that umbrella legislation gives enough flexibility to allow regulation which enhances rather than inhibits nursing practice. Extension of nursing roles and other changes take place in response to changes in health technology, and the nursing workforce should not be hindered in responding to these changes. That is not to suggest that new nursing roles should develop in an unstructured or unplanned manner; but it is important that the process is facilitated rather than hindered and that nurses lead these changes for the benefit of patients.

Under umbrella legislation, provisions for ongoing competence to practise need to be profession based, particularly in the case of nursing, to enable practical systems of competency to be developed. Again, because nurses are mainly employees, competency systems need to be tailored if they are to be effective.

Probably the most significant aspect of umbrella legislation is the need to ensure that individual professional self-regulation is maintained. Whatever the model used, it is essential that nurses are (in conjunction with consumers) regulating themselves in order to maintain their professional autonomy. The main threat here for nursing is that, if self-regulation is not carried out effectively, the functions of a nurse regulatory authority could be transferred to either other professions or to bureaucrats.
Regulatory reform

Regulatory evaluation
In 1995, the Pew Commission in the USA published a report, Reforming Health Care Workforce Regulation (Pew Health Professions Commission 1995), which elicited many responses, positive and negative. These responses were then published in 1997 and following are some of the more relevant responses to recommendations relating to the regulation of health professionals.

Recommendation 9 in the original 1995 Pew publication states:
*States should develop evaluation tools that assess the objectives, successes and shortcomings of their regulatory systems and bodies in order to best protect and promote the public’s health.*

This recommendation elicited one of the highest response levels of all the recommendations. There was strong support for some type of either internal or external assessment although the shortcomings of both of these types of assessment were identified (Gragnola and Stone 1997).

A further recommendation relating to regulation was:
*States should understand the links, overlaps and conflicts between their health care workforce regulatory system and other systems which affect the education, regulation and practice of health care practitioners and work to develop partnerships to streamline regulatory structure and processes.*

This recommendation attracted one of the lowest response levels. Responses included the opinion that professional associations were the best-placed entities for determining professional standards, educational requirements and scopes of practice (Gragnola and Stone 1997).

No literature was retrieved which evaluated health professional regulation. One article (Bryant 2002) examined the nursing legislation in each Australian jurisdiction using the ICN principles of regulation as the framework. This paper analysed the legislation and evaluated the extent to which the legislation complied with the principles. However, the outcomes or effects of the legislation were not evaluated. Perhaps the fact that legislation such as this appears to escape formal evaluation is because it is the product of legislatures, which in democracies respond to popular demand. The impetus for development of new legislation or amendment to existing legislation emanates from the electorate, which can be seen to be some form of evaluation of the existing situation.

The employer as regulator
The original Pew Report had a focus on the employer as regulator. Employers affect the way nurses practise at an institutional level through local policies and procedures, all of which constitute a form of regulation. Whilst it is acknowledged that the employer has a responsibility and vicarious liability to ensure that its employees are duly qualified and competent to perform in the role for which they are hired, professional self-regulation ensures that maintenance of professional standards is controlled by the profession. Nevertheless, the employer does retain the right to impose policies and procedures on its employees, which at times may conflict with professional standards. A good example here is nurse:patient ratios, which can be the cause of considerable conflict between nurses (as employees) and the employer. One solution to this conflict is described below, but it is a solution which imposes another type of regulation of nursing practice.
**Mandated nurse:patient ratios**

One of the most publicised forms of regulation of the nursing profession is that of mandated nurse:patient ratios. These have been introduced through legislation in California (1999) and through the nursing award (the industrial agreement covering wages and conditions of employment) in Victoria, Australia (2001). In both jurisdictions, the nurse:patient ratios are mandated in a variety of clinical settings. Furthermore, there is also provision for differing ratios in differing levels of hospital complexity in both California and Victoria (Buchan 2004). In California, there is a phasing of the introduction of the ratios whereas, in Victoria, the implementation occurred on a specific day.

In each jurisdiction, the ratios were fought for by nursing unions in response to the need to regulate nursing workloads in the context of an undersupply of nurses, coupled with the pressure to contain the overall costs of health care. In Victoria, the nursing union – the Australian Nursing Federation (ANF) – put forward the following as the arguments in favour of the use of ratios:

- Beds cannot be categorised as being open when there are insufficient nurses to staff them;
- The nursing roster has a full complement of nurses six weeks in advance;
- The ratios are fully funded which means that there is sufficient funding in the nursing budget to employ nurses and this funding is corralled from incursions from other sections of the hospital;
- The ratios prevent reliance on nursing agencies to fill roster gaps, which can be expensive;
- Whilst the ratios are compulsory, they do allow for professional judgement and flexibility;
- The existence of mandated ratios ensure better quality of patient care and retention of nurses (Buchan 2004).

A similar rationale for the ratios also applies in California. The ratios have been controversial in each instance. In California, Governor Schwarzenegger has halted the next phase of implementation, which was due on 1 January 2005. In Australia, the ANF successfully resisted the government's attempt to abolish the ratios by undertaking industrial action in 2003.

There are a number of arguments both for and against the mandating of nurse:patient ratios. These include the perceived loss of staffing flexibility, the problem of compliance and the issue of definition of minimum – whether this is in reality the average or the maximum (Buchan 2004). Moreover, the mandating relates to nurses (and in California there has been argument over the inclusion of their second level nurse in the calculation of the ratios), and does not take account of the number of other support personnel such as unlicensed assistive personnel (UAPs) and clerical assistants. Whilst the UAPs directly assist with nursing care and, thus, could be considered as part of the nursing workforce, the existence of a ward clerical assistant also provides a service which impacts on the nurse’s ability to fulfil their workload.

Buchan (2004) also notes that, although some of the arguments in favour of mandating ratios include reduction in turnover and absenteeism and improved patient care outcomes, in reality these gains are a consequence of better nurse staffing, which can be achieved without mandated ratios. The challenge that the ratios pose is the need for the findings from existing research on the relationship between staffing levels and outcomes of care to be taken up by the funders of health care. The implications for the nursing workforce will be wide-reaching if the mandating of ratios spreads.

**Mutual Recognition Agreements**

One of the recent developments in the arena of professional regulation is the signing of trade agreements which include services between countries. These are loosely titled mutual recognition agreements (MRAs). Nursing and other health professions are frequently included in these agreements. The World Trade Organization (WTO), which is comprised of 147 countries, establishes rules for trading between nations with MRAs permitted under these rules (Affara 2004).
There are a number of regional trade agreements in existence in various parts of the world. Some cover a large number of countries, such as the European Union and the Asian-Pacific Economic Co-operation; and others apply to a small number of countries, such as the North American Free Trade Agreement (Canada, Mexico and the USA) and the Trans-Tasman Mutual Recognition Agreement (Australia and New Zealand) (Affara 2004).

In reality, although MRAs are but one feature of a general trade agreement, they have wide-reaching effects on the professions to which they apply. With the aim to facilitate the movement of workers from one country to another, the underlying human resource goal is to increase specific workforces and make it easy for countries to recruit workers in particular industries. In the case of nursing, MRAs have resulted in considerable effort being applied to the notion of equivalence of qualifications and requirements for registration between countries. For example, some countries, such as Australia and the USA, regulate a second level of nurse whilst others regulate only one level. Some countries register midwives separately whereas many have no specific category named in legislation. In order for a MRA to be implemented, it may be necessary for one country to change some of its standards for registration to be at the same level as other countries within the agreement.

The implications of MRAs for nursing are similar to those of general globalisation. It is assumed that the signing of a MRA will facilitate the movement of nurses between the countries involved and this, indeed, may be the goal. Simplification and consistency of regulatory systems are assumed in such an environment, with governments taking little heed of the views of the profession or indeed not consulting the profession in question during the negotiations. The danger is that, in the process of negotiation of the agreement, by default the lowest standards will prevail. This may have a deleterious effect on nursing registration requirements and nursing education standards in one or more of the participating countries. In a worst-case scenario, it is possible that a new regulatory body to oversee the process of movement of nurses between the countries which have signed a MRA will be established to override the existing self-regulation. Thus regulatory autonomy will be either lost or severely limited to the detriment of both the nursing profession and the public.

The broader regulatory framework

Regulation in health care per se has a much wider scope than the self-regulation of health professionals. In many countries, there is legislation covering all aspects of health care delivery which may extend to legislation governing the operation of hospitals and other community health services. Such legislation is also frequently applied to the private health sector. The purpose of this regulation is primarily to protect the public by ensuring a high standard of both care and facilities for the delivery of that care. This regulation may also cover general public health measures relating to the spread of disease. There is also industrial regulation which covers the working conditions and salaries of health workers. The latter can exert major effects on nurses’ working patterns. On the other hand, industrial regulation can also protect employees’ working conditions and salary levels and thus be seen as a significant advantage.

Public sector policy changes and institutional restructuring, often driven by the need to contain expenditure, influence the regulatory environment. This is occurring in many parts of the world. In the health sector, it can result in deregulation allowing the rise of a stronger private sector and, in the public sector, decentralisation of control of health services. Rationalisation of health services is also often a strategy to contain costs. In this context, governments sometimes identify professional regulation as unnecessarily restrictive. In some instances, health professional regulation has been improperly conceived resulting in restrictive provisions in legislation. In others, health professional regulation is more enabling, allowing nurses and others to expand their scope of practice.
Restrictive provisions may relate to activities, tasks or roles which are currently limited to qualified nurses. Flexibility of the nursing workforce, particularly within the area of specialist practice, can also be a target. For example, in countries where the role of the nurse practitioner is in existence, the profession has been careful to describe the role and prescribe the qualifications to fulfil the role. In extreme situations, governments sometimes exert pressure on the professions to substitute lower categories of worker. In situations where industrial action by nurses emerges, governments may try to undermine the nursing role by overriding nursing legislation. In situations such as these, the fact that the consumer or community has the most to lose is often overlooked.

Whilst professional self-regulation is the framework for nursing practice, there is a plethora of other regulatory systems which also have an impact on how nursing is practised. These include regulatory systems which contain mandatory requirements and those which are voluntary. In particular, in response to the safety and quality agenda, there has recently been a rise in the number of bodies which have a focus on clinical practice such as the National Institute for Clinical Excellence in the UK, various health care accreditation bodies in many parts of the world and, of course, for those who function in publicly funded health care institutions, there are many mandatory rules underpinned by legislation.

Ashworth et al. (2002) report on regulation in the public sector in the UK and the expansion of government control through regulation. They identify a number of problems associated with regulation which include: resistance; ritualistic compliance; regulatory capture (where the regulator becomes too close to those being regulated); performance ambiguity or opacity (where the desired outcomes are vague or contradictory); and data problems (where data capture and equivalence are variable).

An article by Walshe (2002), also focusing on the public sector in the UK, describes the many new regulatory bodies which have been established in response to problems with the quality of care delivered. Walshe describes this regulation being at arm’s length from government in response to a policy of decentralisation of health services. There is therefore a need for independent bodies to maintain standards rather than through central administration and control. Walshe sees this increased level of regulation as possessing the potential to assist in performance improvement in the NHS and advises that effective regulation should contain the following characteristics in order to be effective:

1. It should be responsive to the needs of those regulated and recognise diversity of organisations.
2. It needs to have a range of regulatory interventions to avoid the ‘one size fits all’ approach in order to be responsive.
3. It needs to work from a tripartite base rather than a bilateral approach, which means that it should work with both the organisation it regulates as well as with other groups such as consumers and staff or professions.
4. It needs to balance independence and accountability and in so doing maintain a distance from political masters (Walshe 2002).

In an article on the nursing shortage in the USA, Nevidjohn and Erickson (2001) cite a number of regulatory and policy issues which are exacerbating the shortage. These include the quantity and complexity of documentation required by both regulatory bodies and the reimbursement industry. Nurses are prepared primarily for clinical practice and are frustrated by excessive demands of documentation which take them away from their patients. Nevidjohn and Erickson also recommend that state nursing boards need to examine their policies and other regulatory requirements in times of shortage, balancing the requirement to ensure that registrants are educationally prepared to a certain level with the need to be flexible, particularly towards foreign nurses. Shortages give rise to the potential for unsafe practice because of poor nurse:patient ratios and one method of alleviating a shortage is to allow nurses from outside the country into practice.
In a conference presentation, Moore and Picherack (2003) report from Canada that we are in the midst of a new era of regulation where broader public policy interests compete with the public protection mandate. They advocate that we need to balance these two interests in order to accommodate the broader agenda of globalisation of the nursing workforce. There are major equity issues flowing from greater workforce mobility within countries and between countries.
Section Two: Competency Development and Education

As already identified, education and competency to practise are increasingly being drawn to the attention of regulators as it is they who are responsible for the basic competence of the nurses they register. Furthermore, they also have a growing interest in continuing competence as a result of the safety and quality movement and increased consumer awareness of the need for practitioner competency. There is also increased scrutiny of education programmes preparing nurses for practice since, in a rapidly changing health care environment, nurses need to be educated both to fulfil the present nursing role and be able to adapt to changing nursing roles. One of the central issues in ensuring a competent nursing workforce is the need to educate nurses using a curriculum based on the skills or competencies necessary to practise in the role. This has implications for the trio of education providers, employers of nurses and regulators. Employers of nurses are often better placed than others to determine the initial competencies necessary for basic and advanced practice. Moreover, the issue of competency does not end with initial registration, as there is a need to ensure the ongoing competence of nurses. This is somewhat problematic as it is difficult to measure and to monitor.

Engaging employers in the development of curricula for undergraduate nursing education, as well as the design of continuing education programmes, is desirable if the goal of a competent nurse workforce is to be realised. This section examines the available evidence relating to the involvement of employers in curriculum development; trends in nursing education; links between education and competency development; and the links between competency, continuing education and regulation.

Employer involvement in curriculum development and nursing education

There is little documented evidence available of employer involvement in the development of nursing education programmes. On the other hand, there are recommendations in a number of articles that closer links between education and service are essential if nursing education programmes are to produce graduates who are both competent and equipped to practise in the future.

Multidisciplinary undergraduate education

One of the themes which emerges from the literature is that of flexibility in education to meet the demands of health care delivery of the future. Humphris and Hean (2004), in an article on educating the future workforce, advocate the need for changes in education programmes to meet future service demand. Specifically, they recommend that pre-registration students from all health professions should be brought together for shared education and training to foster the concept of working in teams.

The theme of shared education is advocated by Masterson and Humphris (2001) in their book on developing new clinical roles in health care. They suggest that health professionals should be encouraged to develop shared goals and, thus, shared knowledge as an essential ingredient of delivering high quality care. Collaborative practice is cited as a desirable outcome of shared education.

The national review of nursing education in Australia, in Our Duty of Care (2002), reported that there was a need for an integrated approach to nursing education to enable it to react to changes in health service delivery. It also suggested that education and training needs of nurses in the future will have to be considered in the context of their specific employment field. For example, the educational needs of primary care practitioners, including nurses, will need to be considered as a whole rather than the separate focus which currently exists.
The Institute of Medicine (IOM) in the USA, in its report on education of health professionals, is of the view that the future of health professional education must be approached from a multi-disciplinary stance (Board on Health Care Services, IOM 2003). In particular, it singles out clinical education and related training environments as cultural reforms are seen as necessary to support reform in this field. By identifying five core competencies – provide patient-centred care; work in interdisciplinary teams; employ evidence-based practice; apply quality improvement; and utilise informatics – the IOM believes that leverage in achieving a multi-disciplinary approach may assist this reform. This competency-based approach to health professional education has grown in response to concerns about patient safety. The IOM reported variations in patient care across geographic locations in the USA and the growth in the consumer movement calling for greater accountability and transparency in health care. It advocates that a competency-based approach to education could have the outcome of better quality, as educators would have information on educational outcomes which could then lead to better patient care outcomes.

The IOM makes a number of recommendations concerning the delivery and quality of health professional education. Though some relate to the specifics of the North American systems, recommendations 4 and 5 are worth quoting here:

**Recommendation 4**
All health professions boards should move toward requiring licensed health professionals to demonstrate periodically their ability to deliver patient care – as defined by the five competencies identified by the committee – through direct measures of technical competence, patient assessment, evaluation of patient outcomes, and other evidence-based assessment methods. These boards should simultaneously evaluate the different assessment methods.

**Recommendation 5**
Certification bodies should require their certificate holders to maintain their competence throughout the course of their careers by periodically demonstrating their ability to deliver patient care that reflects the five competencies, among other requirements (Board on Health Care Services, IOM 2003:9).

Other recommendations canvass interdisciplinary education and the need for all bodies delivering education to be involved in the implementation of the recommendations with report-back mechanisms. Evaluating the practice of health professionals using the measures cited – technical competence, patient assessment and evaluation of patient outcomes – is challenging from the perspectives of valid measurement tools, cost and time availability.

**Integration of practice and education**
In an editorial in the *Journal of the American Medical Association*, O’Neil and Seago (2002) examine the crisis in nursing in the USA. They note that it is essential that changes in the governance of nursing take place to enable it to meet the care requirements of Americans in the future. Specifically, they call for collaboration and even integration of practice and education. One way to ensure that nursing education programmes are reflective of the needs of employers and the practice environment is through curriculum development and consequent development of competencies. Sirkka and Moiso (2001) assert that the undergraduate nursing curriculum needs to be reflective of the population’s health needs and equip the nurse with lifelong learning skills to enable continuous growth and development. They argue that a curriculum designed to ensure the individual can apply a problem-solving approach, enables the nurse to continually adapt to the changing needs of the population and to emerging new technologies in health.
Closer employer/student relationships are advocated by Nay and Pearson (2001) in order to enhance curriculum development. They assert that there should be closer links between education and practice settings with employers developing relationships with students during their education programme. This sentiment is echoed by Kenny (2004a) who advocates for all stakeholders to be involved in curriculum development to ensure that the curriculum reflects the needs of employers, clinicians and the wider health and social community.

Balancing the needs of employers and educators is not always simple. In an Australian report on nursing education, there was an acknowledgement of the fact that the undergraduate programme was crowded, as it had to provide a balance between meeting competencies and the increasing demands from the profession for readiness to practise. The researchers identified that the problem of the theory/practice gap was a high priority and put forward three areas for action as follows:

- A need for improved coordination and communication between clinical and university educators/academics;
- A need for academics to support preceptors and clinicians who work with students and for them to gain some recognition for this contribution to student learning; and
- The need for students to have opportunities to reflect on the development of their practice in order to explore strengths and weaknesses. (Clare et al. 2002:75)

Kenny (2004b) explores the relationship between training and education models of nursing preparation in the post World War II period. He sees tensions between competency and scholarship, as the pressure to produce more nurses places demands on the service sector where the majority of clinical education takes place. He reports that there is a move to franchise out the first year of the education programme to service providers in conjunction with a further education institution. This has the potential to devalue nursing scholarship with a return to the time when nurses and nurse academics suffered from the locus of nursing education being external to the mainstream education system. This had the effect of isolating and stifling of innovation. Nurse academics practised without the stimulus evident in mainstream education institutions. He also reports on the disquiet felt by nurses as the emphasis shifted to skills and competency education which was claimed by the service sector as being in their mandate.

Kenny also recommends that there be a closer relationship between academic nursing education and clinical education and, in order to do this, there needs to be a firm partnership between education providers and industry. Domination of one group by the other will not enhance such collaboration; the components of an equal partnership must be negotiated.

The Royal College of Nursing (RCN) in the UK, in its discussion paper on the future of nursing education, reports that nursing practice is changing (RCN 2004b). In acute settings, nurses manage a greater range of technology whilst nurses in the community are either providing direct primary health care or providing more complex care to patients in their homes. Nurses are also increasingly involved in patient education, particularly teaching those with chronic disease to manage their conditions. The RCN paper identifies challenges for nursing education, which include the level of nurse preparation and the length of programme. It points out that the demand for nurses to practise at a higher level and compete with other health professionals is not matched by the length and depth of the current programme. The RCN views the issue of parity with other health professionals as important for teamwork; and, in order for nurses to be treated as equals, they need undergraduate preparation at the same or similar level as the other members of the team. It also supports shared multidisciplinary education and the generalist nature of basic nursing education, as nurses are the first point of contact in a number of health services provided by the National Health Service (NHS).
In an editorial in *Nursing Leadership* on revitalizing education/agency partnerships in Canada, Lambe (2003) recommends the following as examples of cooperative initiatives designed to bring closer ties to education and service providers:

- Nurse experts who easily move across the institutional boundaries of an educational institution and service agency through joint positions or secondments;
- Jointly established research units;
- Support and fundraising for research chairs in nursing;
- Shared research facilitation, personnel and space;
- Appointments to faculty from agencies and of faculty to agencies;
- Jointly sponsored continuing education opportunities and conferences; and
- Shared educational equipment and facilities (Lambe 2003:35).

**Competency development**

The development of competencies for nursing practice must begin with undergraduate nursing education. As previously stated, those who have a direct interest are regulators, employers and educators. Engaging all three stakeholders is desirable if the graduates of nursing education programmes are to fulfil the professional nursing role at the expected standard. Once this is accomplished, the next step is to produce competencies for continuing practice and systems, which can measure and record the practice of individual nurses and reflect contemporary nursing practice.

**Defining competency**

Before examining competency development, it is useful to cite some examples of competency definition. The Canadian Nurses Association (CNA) provides the following definition of competencies:

*The specific knowledge, skills, judgement and personal attributes required for a registered nurse to practise safely and ethically in a designated role and setting. (CNA 2000:6)*

An article by Mustard (2002) also examines the definition of nursing competency. While he believes that the literature contains no clear definition of competency, his view of competencies includes statements around meeting minimum clinical standards, and categorising the components of competency such as interpersonal and psychomotor skills.

Campbell and Mackay (2001) have a different take on defining competence and they identify three concepts as being reflective of the literature. These are: the ability to practise in a specific role; the influence of the practice setting on competence; and the integration of knowledge, skills, judgements and abilities.

**Initial competence**

The nursing profession has been concerned about the issues of initial and continuing competence for some time. Whilst registration systems measure suitability of new applicants to be admitted to the register (which includes initial competence), it could be argued that ongoing competence is a more problematic process. Nursing academics are familiar with clinical competencies as many use them during the course of a nursing education programme to measure the clinical competence of students. Specialist nursing organisations use competencies to define their practice and as a basis for credentialing practitioners.
Winskill (2000) reports that, in Australia, the first nationally agreed nursing competency standards were published in 1986. They have been updated on a regular basis since then to keep pace with contemporary nursing practice. One of their chief functions is to serve as the framework for entry to the nursing register. They reflect the various roles and functions of nurses and identify a combination of the attributes a competent nurse must display. Furthermore, they are broad and aspirational so that they can remain relevant over time. They also are a direct link between education and regulation.

One of the ways to link competency development with education is through the establishment of a skills council. These bodies exist in Canada, the UK, New Zealand, Australia and South Africa. In Australia, the Community Services and Health Industry Skills Council (CSHISC) establishes partnerships between industry and government to develop a highly skilled health workforce for Australia. The educational levels range from certificates of various levels through to bachelor, master and doctoral degrees (CSHISC undated).

**International competency development**

With the trend of increasing globalisation and mobility of the nursing workforce in mind, the ICN developed international competencies in 2002 as part of its commitment to nursing regulation across the globe. These competencies are broad and generic as they cover all aspects of nursing practice in all countries. Hancock's view is that the international competencies provide guidance for nursing's role and scope of practice in relation to health care (Hancock 2004).

Following on from the development of ICN's international competencies, the regulatory authorities of the Western Pacific and South East Asian Regions undertook the development of common competencies for registered nurses across its regions beginning in 1998. This project culminated in the production of a set of competencies in 2004 (Percival 2004). They consist of three domains: the legal and ethical framework of nursing practice; management of care, including professional practice, consumer rights and professional advancement and development; and leadership and nursing management. Each domain has a number of competency units and elements underpinning it. Contributions from 27 countries were received during the development of these competencies. One of the shortcomings recognised in a development of this scale is the issue of cultural competence or cultural safety. This is seen as one of the limiting factors in nurse migration as, in order to meet competencies in many countries, nurses must meet cultural competency/safety requirements. Since their adoption is relatively recent, the efficacy and utility of these competencies remain to be seen.

Similarly in Africa, ECSACON (the East, Central and Southern African College of Nursing), an organisation comprised of 14 African countries, has adopted a common regulatory framework which consists of a code of ethics, standards for practice and competencies to meet those standards.

**Continued competence**

Whilst development of initial competencies is now established as an integral feature of both undergraduate nursing programmes and nurse regulatory bodies, development of systems of continued competence is relatively recent. Employers of nurses, nurses themselves, providers of continuing education and nurse regulatory bodies all have a stake in continuing competence. However, the evidence from the UK indicates that the responsibility for continued competence lies very much with health professional regulatory bodies. The maintenance of competence has challenged all the health professions as they strive to fulfil their responsibilities to patients and the public at large. Mustard (2002) asserts that competency is a fundamental component of nursing and vital to its future as it struggles with incursions from other groups. Continued competence has come to the attention of consumer groups as well.
Many professional nursing bodies have developed frameworks for continued competence. As an example, the Canadian Nurses Association (CNA) developed a national continuing competence framework for nurses. The framework responds to a call for a coordinated approach to meet consumer demands for competent health professionals in an era of global mobility. The goals of the programme are as follows:

1. To provide safe practice as per the code of ethics and the standards of practice for registered nurses established by provinces and territories;
2. To facilitate practice development for registered nurses where areas for improvement exist or potentially exist;
3. To support registered nurses in their professional commitment to lifelong learning and excellence;
4. To support quality care by registered nurses for Canadians;
5. To increase the public's confidence in the nursing profession. (CNA 2000:5)

Campbell and Mackay (2001) outline the key components of a continuing competence programme as being: determining the purpose of such a programme; defining competence; identification of performance standards or competencies; development of assessment methods and tools; development of a professional development system; evaluation and education; and communication.

According to the authors, it is essential to define the purpose of such a programme in order for it to meet desired outcomes. They cite the primary purpose of these programmes as being public protection and enhanced professional growth, a sentiment contained in the goals of the Canadian programme. A continuing competence programme, which is focused on public protection, reflects that regulatory authorities have a legislative mandate to protect the public. On the other hand, a professional growth programme focuses on the need for individual practitioners to identify their continuing education needs.

As already mentioned, all health professions struggle with the concept of continued competence. It is useful to examine continued competence in the context of the health professions as a whole and its links with regulation.

As noted earlier, the Pew Commission in the USA reported on the responses to its report, Reforming Health Care Workforce Regulation in 1997. Its recommendation on continuing competence was as follows: States should require each board to develop, implement and evaluate continuing competency requirements to assure the continuing competence of regulated health care professionals. (Pew Health Professions Commission 1995:25)

This recommendation attracted both the highest score for level of concern and also received significant support. Responses included that it was too costly and not necessary. Testing for competence was also seen as a barrier and the efficacy of the current requirements for continuing education was questioned. Further policy options were identified by this report and included the expansion of technological tools to assist in assessment of competence (Gragnola and Stone 1997).

This recommendation places the onus for the development of a system of continuing competence squarely on the health professional registration boards without reference to employers, education providers and the relevant profession. However, as was seen with the aftermath of the Bristol and Shipman enquiries in the UK, the main responsibility for the problem is assigned to the regulator.
The Citizen Advocacy Center is a support centre for lay members of health professional regulatory boards across the USA (CAC 2004). In response to what they see as an unacceptable level of preventable errors in health care and problems in overall quality of care, they have developed a road map to continuing competency assurance. It follows on from work undertaken by the IOM, some of which is discussed in the section on education. The principles upon which they base the development of their road map are as follows:

- Collaboration between stakeholders;
- Continuous quality assurance rather than relying on the "bad apple" approach;
- An evidence-based approach to link continued competency assessment with improved clinical outcomes;
- Building on programmes already in existence;
- Mandated competency assessment and assurance;
- Clinician responsibility which embeds competency assessment and assurance into professional practice.

The CAC has as its aim a situation where all health professionals are required to demonstrate their ongoing competence periodically via an acceptable methodology based on evidence.

Development of employment-based competencies

Development of specific continuing competency measures is the subject of research from several countries. Three articles by Tzeng (2003) explore the relationship between clinical practice and employers' needs for competence and provide a framework of clinical competencies which are specific and firmly based in practice. Whilst they lack the definition of competencies developed, for example, by specialist nursing organisations for defining specialist practice, they nevertheless provide a guide to practise in the Taiwan hospital system. The studies are useful in the context of this paper as they describe the link between nurses and their practice and the specific needs of employers for competent nurses. The link back to nursing education programmes and curriculum development is also recommended.

In the first of these studies, Tzeng explores the demand and supply for nursing competencies in the Taiwan hospital system. The purpose of the study was "to investigate the differences among hospital employers' perceptions of the demands for nursing skills for their staff nurses, currently employed nurses' ratings of job demands, and their own self-assessments of the adequacy of their skills to supply these demands in Taiwan's hospital industry" (Tzeng 2003:132). She provides an approach for schools of nursing to develop educational programmes which accord with market demands for competency. Her study compares staff nurses' perceptions of the demand for nursing competency with that of hospitals. The study settings include a variety of health care facilities ranging from medical centres to local hospitals.

As a result of this study, strong recommendations were made for a long-term and nationwide plan for the nursing workforce with adoption of the findings. As well, it was recommended that nursing schools organise their curricula to address the demand for nursing competencies and the perceived shortcomings in the supply of nursing competencies.

Tzeng also advocates for a cross-national study to replicate this one, but cautions that the findings might not be easily applicable to other countries, and suggests that a qualitative approach might be advisable to better understand the employer perceptions of desirable competencies. She recommends that this competency study be used by employers to determine a programme of individualised and cost-effective training programmes dovetailed with performance appraisal systems.
A further study by Tzeng and Ketefian (2003) has hospital employers as its focus and investigates the extent to which they needed staff nurses to possess a set of nursing competencies. This arose in response to the demand by hospital employers for competent and qualified nurses. A questionnaire was undertaken and 89 nursing employers were surveyed with a 42.6% response rate. The results rank 21 competencies with the top 10 being:

- General professional technical skills;
- Ability to work independently;
- Interpersonal communication;
- Professional orientation;
- Assessment skills;
- General clinical skills;
- Self-coping skills;
- Team building and teamwork;
- Health system knowledge;
- Critical thinking.

They conclude that the questionnaire developed for this study could be used to solve the nexus between educators and employers in the design of nurse education programmes. Furthermore, they recommend that it be used as a checklist for evaluating the adequacy of these programmes so that the graduates would possess the skills and competencies to meet the demands of the Taiwanese health system.

In a follow-up article, Tzeng (2004) reports on an exploratory study investigating nurses' self-assessment of their nursing competencies, job demands and performance in Taiwan. The 21 competencies identified in the 2003 study were used in a questionnaire to 850 nurses. The yield was 35.8%.

The results suggest a relationship between competency and performance based on the finding that nurses' self-assessment of their patient care skills contributed to their satisfaction with their nursing competencies. Tzeng concludes that the practical implication of this study is that it could be used as a basis for an individualised and cost-effective training programme in clinical practice. It could also be used to monitor student nurses' learning outcomes.

Zhang et al. (2001) report on a study from China of personal characteristics in nurses, which contributed to effective nursing performance. The aim of the study was to identify core competencies, which enabled nurses to adapt to new environments. The sample was 50 experienced nurses. Critical incident analysis yielded 10 competencies as being the most frequently identified. These were: interpersonal understanding; commitment; information gathering; thoroughness; persuasiveness; compassion; comforting; critical thinking; self-control; and responsiveness. The authors argue that, as these characteristics were derived from actual nurses' working performance rather than from a theoretical framework, they are significant factors in the provision of quality patient care. They also believe that this study provides information for academics in the development of nursing competencies and fulfils the aim of identifying realistic working behaviours for both education and management.

Meretoja et al. (2004) report on the development and testing of a nurse competence scale for use in different hospital environments in Finland. They used competence categories derived from Benner's work and following a pilot test, psychometric testing was undertaken with 498 nurses. The results indicated that there was strong evidence of reliability and validity of the 73-item Nurse Competence Scale used. They conclude that it is essential for evidence-based management to guarantee good clinical nursing practice by systematically evaluating caregiver processes. They recommend that competence assessment models be integrated into quality assurance systems and human resource management.
Competence assessment

Competence assessment is also an integral element in ensuring practitioners are competent. Meretjoa and Leino-Kilpi (2001) conducted a literature review of the development of quantitative methods for competence assessment. They report that many instruments are in their infancy in terms of development with their major limitation being validity and reliability testing. They throw nurse administrators a challenge by suggesting that it is they who should define and quantify competent nursing practice to enable nurse educators to rise to the challenge.

Campbell et al. (2001) also assert that development of assessment methods and tools is essential if a continuing competence programme is to have any credibility, as is the establishment of a professional development system. By this, they mean a system to assist practitioners to acquire and enhance their skills in order for them to remain competent. Evaluation is of course also a key component for a successful programme as are education and communication.

Mustard (2002) takes this further and contends that assessment on the job is the most reliable method of determining whether nurses are competent. The author believes preceptors and mentors who are experienced make most effective assessors. Mustard assigns responsibility to nurse managers to ensure that nurses are competent to deliver care.

One of the components that aids the maintenance of competence is keeping a portfolio, which chronicles activities providing evidence of clinical currency. McMullan et al. (2003) reviewed the literature relating to the use of portfolios as an aide to ongoing competency. They conclude that any form of competence assessment must be integrated and portfolios are a vehicle to achieve this; that a reflective component is essential; and that the teacher/learner relationship is central to the success of the process of competency assessment.

Competency, continuing education and regulation

Regulation and continued competency

The link between continuing competence and requirements for it is not well articulated. The profession, as a whole, has clearly seen the need for continuing competence but has grappled with how this can be universally accepted by all nurses. The need to do so has now become urgent with the enhanced focus on adverse events in health care. We have seen the response to this issue by the CAC in the USA and there are similar (although not as well articulated) concerns in other countries.

Nursing registration authorities have clearly articulated requirements for initial registration as a nurse. These may include examinations, successful completion of a basic nursing education programme and meeting of beginning competencies. Whatever the requirement, the standards for registration are clear. On the other hand, requirements for renewal of registration are not so clear.

Exstrom (2001) examines the role of the registration board in relation to the competency of its registrants. She outlines four stages when a registration board has a responsibility to ensure competence: at initial registration; at license renewal; at re-entry to practise following a period of absence; and following disciplinary action. She reiterates the primary role of registration boards as assuring the public that nurses are competent to practise. Exstrom assigns responsibility for ongoing competence to individual nurses, employers of nurses, nursing educators, the nursing profession and boards of nursing. She singles out employers of nurses as having a responsibility to identify the competencies needed for each nursing position and provide education and staff development programmes to enable staff to meet these competencies. However, she does not retract from the premise that nursing boards are accountable to the public for their protection.
Mandatory continuing education

There has been an ongoing debate about mandatory continuing education as a mechanism of ensuring continuing competence. A study conducted by Smith (2004) in the USA explored the link between mandatory continuing education (CE) for relicensure and the development of professional competence. The methodology was administration of a survey to 2,000 registered nurses and 2,000 licensed practical or vocational nurses drawn from the registers of 35 nursing boards in the USA. The response rate was 27%, but was self-reported which does limit the integrity of the sample. Respondents were divided into those who were drawn from nursing boards with a mandate to accumulate CE for relicensure and those without such a mandate. Respondents were asked to estimate their beginning and current ability levels for each of 10 professional abilities on a scale of 1-10. The results revealed that there was no statistically significant or practically relevant difference found in the amount of growth experienced by those nurses who were licensed in jurisdictions with CE mandates and those who were not. Furthermore, it appeared that mandatory CE influenced the numbers of hours of CE attended, the nature of which contributed little or nothing to the overall competence of the nurse in carrying out nursing duties.

Nurses mandated to undertake CE attended more sessions than those who were not mandated. Similar findings were apparent in other variables relating to CE attendance and the author postulates that this may be as a result of market forces at work. In other words, CE providers targeted nurses in states with a CE mandate, thus taking advantage of the fact that nurses in those states were legally required to undertake a predetermined amount of CE. Another finding was that CE was just one of the factors nominated by nurses as being important in professional development, and that work experience and basic nursing education programmes contributed also. Smith concludes that all nurses appeared motivated to undertake CE. Nurses with a CE mandate were more likely to undertake CE in fields which were unrelated to their sphere of practice for the sole reason of fulfilling the mandate.

In the context of endeavouring to establish that mandated CE is necessary for ongoing competency to practise, the outcomes of this study are not conclusive. However, the finding that nurses were motivated to undertake CE is encouraging. More research on continuing competency needs to take place to establish processes, which will enable nursing boards to fulfil their mandate of protection of the public.

Recency of practice

One example of a registration board attempting to fulfil its responsibility for the continuing competence of its registrants is the New Zealand Nursing Council, which has issued competency-based practising certificates since 2000. These certificates require that a nurse meet generic performance criteria in 11 competencies within their specific field of practice. Since the introduction of new health professional legislation (discussed earlier in this paper), which contains requirements for continued competence, nurses must meet three aspects of competence: practice hours; professional development hours; and specific competencies for the individual’s scope of practice. Nurses must document their practice as a registered nurse and are subject to random audit.

Recency of practice requirements are a feature of Australian nursing legislation. This has the effect that nurses who have not practised in the previous five years are obliged to undertake some education and be tested against the competency standards. One of the jurisdictions – Tasmania – has undertaken significant work in this area to further develop and refine the process of requirements for ongoing competency and it is considered relevant to examine this work.

The Nursing Board of Tasmania (NBT) has a legislated mandate to protect the public by ensuring the competence of the nurses it licences. In 1996, it introduced a process whereby all registrants are required annually to sign a declaration to the effect that they are competent to practise in order to be issued with a practising certificate. The competency standards which are required to be met are those developed by the Australian Nursing and Midwifery Council. In 1998, the NBT implemented its Competence to Practise Policy Audit. The efficacy of this audit was evaluated over a five-year period 1998-2002.
Three audits were carried out during this period and on each occasion between 4.2% and 4.8% of the total registrants were audited. The evidence required to support the declaration was as follows:

- A satisfactory workplace performance appraisal confirming the applicant’s ability to meet the relevant competency standards;
- A statement (statutory declaration) made by the applicant’s nurse employer or supervisor attesting to the applicant’s demonstration of the relevant competency standards;
- A professional portfolio including evidence of peer review process;
- Other documentary evidence which the applicant believes demonstrated their maintenance of competence to practise (NBT 2004).

Findings of the evaluation supported the ongoing audit process. However, there is no evidence of the effects of the continuing competency requirement on outcomes of care. Recommendations arising from the evaluation include a study evaluating the impact that the declaration of competence has on nurses’ practice. Two questions arise from the work of the NBT and are as follows:

1. Does the fact that nurses must make a declaration that they are competent, and that they must also produce documentation should they be audited, motivate them to attain competency?

2. Does the audit process give the NBT a sense of security in fulfilling its mandate of protection of the public?
Section Three: Skill Mix, Role Definition and New Roles

Context of the skill mix, role definition and new roles debate

In the current dynamic environment of health care, the role of nurses is key to achieving cost-effective and high quality patient outcomes (Wold et al. 2003). Enhancing and refining the nursing role have been taking place for some years with the result that there are well-defined roles, such as nurse practitioners, in many countries. Determining the skill mix of health professionals, particularly involving nurses who are educated for new roles, is essential for both patient outcomes and cost-effectiveness of the new roles. If one takes the literature review as a guide, the great majority of skill mix studies emanate from the UK and the USA. Given the size of the populations in those countries, coupled with an ageing population which will increase the demand for health care in the future, it comes as no surprise that policy makers, funders and employers are keen to explore alternative ways of delivering health care. The development of new nursing roles, in particular that of the nurse practitioner, has also spawned many studies as both nurses and funders strive to demonstrate that nurses can deliver some aspects of primary health care at a standard similar to that of physicians and in a manner acceptable to the public.

The context in which the skill mix changes are taking place is one of restructuring of health systems, cost containment and shortages of health professionals of most types. Egger et al., in a WHO report, examined the health human resources in developing countries. They found that imbalances in human resources fall into three categories: imbalances in overall numbers, in skills or skill mix and in distribution. Underlying difficulties, which contribute to these problems, are "inadequate pay benefits or other incentives as well as poor management of health personnel employed in the public sector" (Egger et al. 2000:8).

The skill mix debate is also taking place in the context of safety and quality in health care. Providing a skill mix in nursing which will deliver a safe patient environment and the delivery of high quality care in a cost-effective manner can be a fine balancing act.

Skill mix in both primary and secondary care is topical given the global shortage of nurses and the imperative to contain the cost of health care. Nursing roles are a prime target for role re-definition – on the one hand they are perceived to be expensive and hospital managers endeavour to replace their work with less expensive personnel; and, on the other, they are perceived to be capable of undertaking some roles currently the purview of the medical profession at a lesser cost to the system. Buchan (2000a) asserts that appropriate skill mix is one of the biggest staffing challenges of health care today.

Carr-Hill et al. (2003) carried out a scoping review of skill mix in secondary care in 82 NHS trusts in the UK. The main changes identified in deployment of nurses included creation of specialist roles and positions (especially nurse consultants and nurse practitioners) and the development of the unlicensed assistant. This study provides evidence for the view that the nursing role is subject to redefinition at both the basic and advanced levels.

From the papers reviewed, it appears that studies on role definition are taking place in a wide variety of clinical settings, which is testament to the flexibility of nurses and their comprehensive basic preparation. Whilst no papers were reviewed which contained links between undergraduate preparation of nurses and their subsequent adaptability within the health environment, this is evident in the variety of settings and roles researched.
When exploring the topic of enhanced nursing roles, the extent to which regulation either impedes or enhances the development of these roles is often an issue. For example, in some countries there are restrictions in health professional legislation relating to undertaking specific tasks. Canada is one case in point through its delineation of controlled tasks. Other legislation, such as that relating to prescribing, may impede the role of the advanced practice nurse. Both nurses and medical practitioners zealously guard their professional turf and frequently resist incursion by other professions or groups. In some countries, medical practitioners resisted introduction of the nurse practitioner role until it could be demonstrated that it serves as an adjunct to medical practice rather than a takeover. The effect of this prevailing view was that there was also a resistance to changes to legislation enabling nurses to prescribe. Similarly, nurses resist incursions by other personnel to undertake work identified as nursing.

**Role definition**

A number of papers on defining the generic role of the nurse practitioner were reviewed as well as other roles including the neonatal nurse, the nurse prescriber, the operating room nurse, the telephone triage nurse, the community gerontological nurse, the emergency department nurse and the mental health nurse.

Smith and Hall (2003) in a study of the retention of neonatal nurse practitioners reported that clear role definition within the nursing unit was important for retention. In a study exploring the perceptions of overseas nurses about their induction programme, Smith (2004) similarly found that a support framework was desirable. Lee and Jones (2004), in another study on neonatal nurse practitioners, found that a strategic planning process was successful in defining their role and justifying further positions.

A study by Tyler and Hicks (2001) on the role of the nurse prescriber in family planning in the UK examined the core clinical tasks implicit in the role through a survey of family planning nurses. The results offered both role definition and an indicative curriculum to prepare these nurses. In a similar study in Australia using similar methodology, Watts et al. (2004) defined the elements of the role of the nurse working in general practice (primary health care) as well as determining the educational needs of nurses in general practice necessary to fulfil the role.

A number of studies (Musclow et al. 2002; McGarvey et al. 2000; Da Costa 2000; Brindis et al. 1998) focus on the need to define the role in the context of a changing work environment. These changes may occur as a consequence of the need to contain costs by either introducing a new role or expanding an existing one or the introduction of new technology. In each of these studies, the need for role definition was seen as paramount if nurses are to be retained in these roles, be educationally prepared for the roles, and not be the subjects of exploitation.

A good example of the need for a range of integrated activities arising from a study to determine role definition is described by Nauright et al. (1999). They examined the role of the telephone triage and consultation nurse and made recommendations on the need for relevant education programmes, changes to practice standards and issues of liability and licensure. The need for education programmes relevant to new roles was also found by Oberski et al. (1999) in a study of community gerontological nurses. The role of the nurse and midwife in maternal and child health and family planning in Pakistan was examined by Kamal (1975) who also found that educational preparation was important in role definition.
Skill mix

It comes as no surprise that the literature on skill mix focuses mainly on substitution at each end of the nursing spectrum. Thus, there are studies which examine the substitution of nurses with unlicensed assistive personnel (UAPs) and the substitution of physicians with nurses – mainly nurse practitioners. Cost-effectiveness studies abound, but are frequently difficult to interpret and removed from their context, especially for an international audience. There are a number of studies emerging as a consequence of the application of mandated nurse:patient ratios in California.

Buchan (2000a) confirms that the two instances where there is some evidence of the efficacy of skill mix are when nurse assistants (or UAPs) substitute for qualified nurses and when nurses substitute for medical personnel. He also reports that extension of the scope of nurses and midwives has been occurring for some time and is quite advanced in both developed and developing countries. Furthermore, the roles of nurse practitioners, nurse consultants, nurse anaesthetists and clinical nurse specialists exist to a greater or larger degree in a number of countries.

In a discussion paper from the Royal College of Nursing (RCN 2004c), role substitution is described as taking place in three ways – between professional groups, across professional groups and across professional and non-professional groups.

Buchan and Dal Poz (2002) undertook a review of the evidence of skill mix in the health workforce. They reported that typical skill mix varies from country to country and refers to the mix of occupations, positions or grades of workers within an organisation. It may also refer to a combination of activities within each job in the organisation. They record that the limitations of large-scale studies are that they are necessarily retrospective and, secondly, that they rely on secondary data which means that they are dependent on the accuracy and completeness of the data. They classify skill mix studies into the following categories:

- Effectiveness of a completely qualified workforce in comparison with a mixed qualified and unqualified workforce;
- Impact of increasing the number of qualified nurses on outcomes of care;
- Effect on cost and quality of relatives, traditional health workers and volunteers.

There are obvious limitations to skill mix studies. First is the largely qualitative nature of the subject; and second is the context in which they take place and the political imperatives for such a study. Third is the difficulty of application in other settings and other countries. Buchan et al. (2000), in a report undertaken for WHO on skill mix in health, outlines three main limitations of research on skill mix. These are: (i) most studies emanate from the USA and focus on either skill mix within nursing or skill substitution of physicians with nurses; (ii) most studies give no reason for the approach to skill mix chosen and insufficient information about the organisational setting; and (iii) most studies do not provide any evaluation of the quality and cost to enable any objective analysis of the skill mix studied.

Buchan et al. (2000) also state that general conclusions cannot be drawn from the available research on skill mix, as it is true only to the time and place in which it was undertaken.
Effects of changes to skill mix

Norrish and Rundall (2001) explore the effects of hospital restructuring in the USA on the work of registered nurses (RN). They report that it often reduces the numbers of RNs as they are replaced by UAPs performing some of the work RNs formerly undertook. They found it difficult to assess the impact of work redesign and staffing changes on RN workload, as the existing methodologies for estimating patient care staffing needs are not designed for the inclusion of new categories of caregivers. Other variables include patient classification systems, scheduling of nurses and fluctuation in patient numbers.

When contemplating a change to skill mix, Sibbald and Shei (2004) recommend that the following questions be posed before embarking on any such project:

- Is the service proposed capable of improving outcomes for patients?
- Are workers competent to deliver the care?
- Are there regulatory impediments to the new role?
- Are the financial incentives to change correct?
- Is there an impact of this change on other services?
- What is the likely impact of a changed role on the co-workers?

From the literature studied, these questions are rarely posed, let alone answered!

Adams et al. (2000) attempt to respond to some of these questions and report on a study of changes in skill mix and work intensification in nursing in the UK. Managers were interviewed in eight NHS trusts (geographical groupings of health services) on various aspects of skill mix change, including why changes were instigated, how they were implemented and methods of evaluation and final outcomes of the change. Changes to skill mix were categorised as multi-skilling, role extending, increased managerial functions, development of specialist roles and changes related to nursing grade dilution.

Sibbald and Shei (2004), in a review of research on changing the skill mix of the health care workforce, concluded that there was a paucity of good evidence of the scope, effectiveness and efficiency of skill mix change.

They also found that it was difficult to locate any research on new health workers, on the cost-effectiveness of interventions, or wider impacts of skill mix change on health care systems.

The impetus for skill mix change is cited by Sibbald and Shei (2004) as being the context of rising demand and cost-containment with skill shortages of professionals and occupations. They found that skill mix change can be accomplished through enhancement, substitution, delegation and innovation; with changes being brought about by transfer of a service from one health care sector or another, relocation of a service or liaison. Further, they found that enhancement included: extended roles for nurses in asthma and thrombolysis; substitution mainly centred around nurse substitution for physicians in primary care; delegation concentrated in the physician area; and innovation confined to ‘new’ titles in primary care.

In the study of changes in skill mix and work intensification in the NHS, Adams et al. (2000) found that nurses reported multiple negative outcomes associated with skill mix changes – particularly with expanded and extended roles. Specifically, more tasks were added to an already full workload and they had to accommodate education for the new roles. Nurses reported doing more overtime in order to fulfil their new roles. At the same time there was deskilling as work was delegated to unskilled workers. As nurses took on other roles and their previous functions were delegated, their work moved into other areas and nursing became increasingly composed of enlarged managerial, medical and therapeutic elements. Nurses’ reaction to this change in role was mainly negative as the researchers found a widespread increasing intensity of work with heavy workloads, role changes and pressure to broaden their range of nursing skills. Nurses perceived that the emphasis for change in role focused on them rather than on other health care professionals from whom there was little workload support, thus undermining their working relationships. There was also no evidence of nurses increasing their autonomy within the NHS.
Adams et al. conclude that while broadening and ‘enhancing’ the role of nurses to enable them to take on more traditionally medical work and increasing their status, the real motivation on the part of management is managerial and economic. They may provide alternatives for patients, but there was found to be little evidence of benefits for the nurses themselves. They also found that there was no evidence of an explicit professionalisation strategy within nursing.

This study is an example of there being too little regulation of an expanded nursing role. There must be a balance between over-regulation, which stifles innovation, and under-regulation, which can result in chaos and resistance from nurses to participate in future expanded role developments. The literature did not reveal any studies on the role of regulation in relation to new roles or skill mix. Regulation is an opportunity to either control the boundaries of the nursing role or facilitate its expansion. Whilst the latter is more acceptable to governments and probably the profession itself, new and emerging roles for nurses and the resultant skill mix are the responsibility of regulation.

The education to prepare nurses for changed roles and the competencies to perform in these roles is essential for their success. The development of such roles needs an integrated approach which takes account of, firstly, the regulatory underpinnings; secondly, the competencies to fulfil the role; and thirdly, the education to equip nurses with the desired competencies.

**Professional role substitution**

**Expansion of nursing roles and new roles**

As already mentioned, changes to skill mix concentrate at each end of the nursing role with both substitution of some lower level nursing work and some enhancement of nursing roles. Buchan and Dal Poz (2002) report that, in the UK, studies on substituting nurses for general practitioners indicate that nurses can take up less skilled tasks to leave the more complex activities to the physicians. Many new roles have resulted as a consequence of the shortage of physicians, such as nurse anaesthetists and physician assistants.

In a review of published studies of substitution of physicians by other health professionals, Richardson et al. (1998) report that such substitution may result in role enhancement rather than labour substitution. Their review indicated that substitutes are most commonly drawn from nursing. They advocate further studies in this area to determine what is really taking place.

Nurse practitioners practise in a variety of settings but most of the research emanates from primary care community settings where they substitute for some of the care provided by physicians. However, Tye et al. (1997) report that there is a rapid acceleration of nurse practitioner services being provided in emergency departments in the UK. They cite that the benefits of providing nurse practitioner services include reduced waiting times and improved patient satisfaction. They advocate for more robust evaluation studies to support these claims. Chang et al. (1999), in an evaluation of the nurse practitioner role in a major rural emergency department in Australia, found that there were no significant differences in the level of client satisfaction between the care provided by physicians versus nurse practitioners. Positive outcomes of care were consistent across the two groups as well.

Studies on the quality of care provided by nurses as they substitute for physicians are few. Shum et al. (2000) measured the outcomes of care delivered by nurses versus physicians in the UK. Their results indicate that patient satisfaction was higher for consultations by nurses and that clinical outcomes were similar for visits to both nurses and physicians.
Brown and Grimes (1995) report on a meta-analysis of patient outcomes of nurse practitioners and midwives in primary care settings in the USA compared with those of physicians. They found that methodological rigour was lacking in under a third of the studies included in the meta-analysis. Other findings were that patient satisfaction and patient compliance were greater in patients treated by nurse practitioners as opposed to those treated by physicians. As the study is not recent, the remaining findings are not discussed here.

Cooper and Stoflet (2004) in a paper from the USA, focus on the challenge of maintaining quality in a multidisciplinary workforce. They report that non-physician clinicians deliver care of a high quality with high quality outcomes. However, the evidence is derived from care which is the least complex and which is provided in a setting with some medical oversight or within a team setting. They report that there are insufficient studies which measure the outcomes of care given by these practitioners who deliver care of greater complexity in an independent setting. It could be argued that nurses, in particular, while they may practise independently, have no desire to provide care which is outside the boundaries of their expertise.

Mundinger et al. (2000) undertook a trial to determine primary care outcomes in patients who were treated by physicians or nurse practitioners. The setting for the trial was a community-based primary care clinic employing 17 physicians and 7 nurse practitioners. The variables measured were patient satisfaction, health status, physiologic test results and service utilisation by service provider. The findings revealed that, in a setting where nurse practitioners had the same authority and other working arrangements and imperatives as physicians, patient outcomes were comparable.

The findings in Mundinger's study are similar to that of Horrocks et al. (2002) who undertook a systematic review to examine the care provided by nurse practitioners in comparison with that provided by medical practitioners. It found that patients were more satisfied with the care provided by nurse practitioners but that there was no evidence of difference in health status. Nurse practitioners had longer consultations but there were no differences detected in the rates of prescriptions, referrals or return consultations. The quality of care was better in some ways for nurse practitioner consultations.

Inherent in nurses undertaking advanced roles which overlap with those of medical practitioners is the notion of shared competencies. Collaboration between medical practitioners and nurses is essential in advancing expanded nursing roles. Lindeke and Sieckert (2005) and Boswell and Cannon (2005) promote the advantages of the two professions working together with the aim of improving patient care and creating satisfying roles for nurses. Collaborating to determine shared competencies is essential to achieve this.

Another of the areas of substitution is that of junior hospital physicians with nurses. Cooper and Stoflet (2004) report from the USA on the increase of substitution for junior physicians by nurses and physician assistants as the numbers of junior physicians in hospitals decline. Similarly, Dowling et al. (1996) report on this role from the UK. They identify that there can be a confusion of accountability in the scope of the new roles, citing an increasingly litigious public as being a catalyst for the development of strategies to reduce risk to both nurses and physicians. They recommend the following as strategies to minimise the risks:

- Nurses and physicians should be equal partners in planning and managing the new roles;
- Patients should be informed about the new roles;
- Approval of the new position should as a minimum be negotiated and communicated with employers, all key staff and the insurers;
- The staff concerned should be encouraged to have access to professional and legal advice and indemnity;
- There is a need for central policy development in the medical and nursing regulatory bodies, and the NHS as the central health employer in Britain, to manage the development of this role, particularly in the area of new scope and consequent standards for the role.
The last point is particularly relevant to this discussion to allow for orderly development which is within a regulatory framework. The nursing regulatory body has responsibility for ensuring that new roles are developed within a framework which protects the patient. The central employer has a similar responsibility to provide legal protection for the nurse. Ensuring that nurses are competent for new roles is also the responsibility of both the regulatory body and the employer.

Substitution of nursing work by unlicensed assistive personnel
As already identified, the other major area of substitution involves unlicensed assistive personnel. Thornley (2000), in a paper from the UK, warns that there is a need for a re-appraisal of UAPs and their potential and that nurses should recognise a more progressive role for them. Otherwise they will continue to be “undercut” by managers who will prefer to employ cheaper and more flexible staff. She found that managers introduced UAPs because of cost-effectiveness, flexible hours and deployment, and the multiskilling nature of their role. This has resulted in the boundaries between nursing work and ancillary work being blurred and fluid.

In a literature review of 16 articles on the impact of UAPs on patient satisfaction, Siehoff (1998) found that in nine of the studies an increase in patient satisfaction was evident. In three of these nine studies, there was a decrease in overtime costs and an increase in the amount of time nurses spent on patient teaching and care planning. In six, there were increases in specific aspects of patient satisfaction while, in the remaining studies, there was no change.

According to Buchan (2000a), substituting cheaper staff for nurses has not been conclusively proven to be effective, as there appears to be no unanimity in either results or conclusions. He says part of the reason for this is that it is difficult to compare studies in this area from country to country as the variables are so diverse.

In the aged care sector, Bradley (1999) reports that from a review of the literature neither staffing numbers nor staff mix were sufficient to determine either cost-effectiveness of care or quality of care in nursing homes. She also warns that, when skill mix changes are used as a management efficiency tool, there is a danger that they are used to support claims of desired outcomes when the qualitative outcomes cannot be measured.

The topic of nurse:patient ratios has already been mentioned in the section on regulation, and the issue of the work of UAPs in this context is also worth noting. Speetz (2001) examines the effect of the 1999 California legislation to establish minimum staffing levels in hospitals for registered and licensed vocational nurses. The California legislation forbids UAPs to undertake a range of clinical procedures such as administration of medication, tubal feedings and insertion of catheters and assessment of patients’ conditions. She concludes that the expertise of RNs employed will be a significant factor in the implementation of the ratios as not all RNs are of equal ability or expertise; and that the relationship between RN staffing and quality of care is essential for determining the number and mix of RNs to other staff in future.

Delegation of health care
Anthony et al. (2000) studied factors associated with patient outcomes when nursing activities are delegated to UAPs. Their survey found that the outcomes were better when observed than when not directly supervised. In other words, when there was no direct supervision, more negative events took place. The implication from these findings is that nurses need to be educated in the competencies of delegation. This finding is echoed by Anderson (1997) who reports on the introduction of generic workers into the ward teams in the NHS. The worker introduced was a person who undertook non-nursing duties – domestic, clerical and catering. Findings from this research show that nurses need to own the process of delegation to any non-nursing personnel. The findings also indicated that a formal education programme is essential for this to be successful.
It is an important component of the development of any new role. It implies that the person delegating has satisfied a number of prerequisites to enable delegation to take place. These include: ensuring that there are no regulatory barriers to the task being delegated; ensuring that the person to whom the task being delegated has sufficient education and competencies to enable them to carry out the delegated task safely; and ensuring that there is some form of evaluation of the end result of the delegation.

Delegation may occur in a variety of circumstances, such as through standing orders or protocols whereby the staff member carries out a treatment regime once certain parameters have been established; through direct supervision by the delegator; and through remote supervision as in the case of a RN delegating certain tasks in the home care setting. For example, nurses in critical care units are familiar with the delegation associated with drug protocols. Similarly, nurses who work in isolated rural locations, where they may be the sole health practitioner, also frequently operate from delegated protocols for both drug administration and treatment modalities. Whatever the situation of delegation, it is essential that nurses are familiar with their responsibilities whether they are delegating or vice versa. They also need to be cognisant of any regulatory provisions or barriers either allowing or preventing delegation of nursing care. Regulatory bodies and nursing organisations have a role to play by issuing guidelines for delegation and providing education for nurses who are participating in new role development.

**Cost-effectiveness of skill mix**

Studies on the cost-effectiveness of changes to skill mix are also few and inconclusive. In a literature review of the assumptions behind the skill mix and quality of care debate, McKenna (1995) identified three types of studies in the field of skill mix – those which indicate that a skill mix of mostly qualified nurses is costly and delivers a lower standard of care; those which indicate that a skill mix with less qualified staff is costly and detrimental to patient care; and those which indicate that the skill mix of mostly qualified nurses is the reverse of the first type – that is it results in a better standard of care and is cost-effective.

Some papers argue that a cheaper skill mix is not cost-effective because of absenteeism, turnover and unproductive time as the workers who substitute are not multi-skilled and, therefore, limited to one-dimensional tasks. Nurses in particular are multi-skilled and often perform many functions simultaneously. One of the questions posed is whether UAPs are used to complement, supplement, or replace nurses.

Richardson and Maynard (1995), in a paper on a review of the knowledge base on physician/nurse substitution in the UK, cite the following factors as needing to be taken into account when evaluating cost-effectiveness:

- Nurses generally earn a lower rate than physicians and, therefore, will inevitably be cheaper to employ;
- Physicians can also complete more tasks in any given time than other health professionals performing the same tasks;
- Physicians in the UK do not earn overtime whereas nurses and other health professionals do.

In a later study, Richardson (1999) evaluated the cost-effectiveness of skill mix within the NHS, focusing on care provided by nurses substituting for physicians. He cites studies that demonstrate the cost-effectiveness of substitution of care provided by nurses, which result in no detrimental outcomes for patients. He found the most common measure of cost-effectiveness is when the costs of a lesser paid person undertaking a specific task are compared with the consequences – for example, mortality or life years gained. Opportunity costs are also evaluated. His view is that cost-effectiveness studies are generally weak and contain many methodological weaknesses. He points to evidence which indicates that service enhancement is often the outcome of substitution rather than actual cost-effectiveness or cost savings.
Venning et al. (2000) report on a study which evaluated care given by nurse practitioners working in concert with general practitioners as part of a team. They cite research which indicates that this mode of delivery provides a more comprehensive and flexible service for patients, but state that their study provides limited support for this. They report that, although the behaviour of the nurse practitioners and general practitioners was similar, the nurse practitioners spent more time with their patients and asked their patients to return for follow-up more frequently. They also carried out more opportunistic screening. The study also showed that, overall, the clinical care and outcomes were similar for nurse practitioners and general practitioners. The cost of nurse practitioner services were shown to be similar to those provided by general practitioners as, although their salaries were less, they took longer to provide a consultation and generated more return visits.

Buchan et al. (2000b) are critical of studies of skill mix as most focus on direct costs utilising wage data and are often based on the average wage. He says that they do not take into account the total costs of changing the skill mix, which include retraining and redeployment implications. The critical factor is the wage differential between the worker who is being substituted and the replacement worker.

Once the research on the cost-effectiveness of different skill mixes is more definitive, there may be more cogent arguments for specific changes to the existing skill mix. It is therefore important that nurses are involved in this research to ensure its rigour and that its application will enhance and not diminish clinical standards.

The role of other nursing or health workers

In the context of the current global shortage of nurses and the ageing of the existing nursing workforce, particularly in the developed countries, health policy experts have turned to examining the opportunity for workforce redesign and the development of a more generic health care worker. There is argument that the supply and size of the nursing workforce will be inadequate to care for an increasingly ageing population (Duckett 2000). Health care is also becoming more specialised. So, on the one hand we have a need for more generic health workers and, on the other, a need for a more specialised health workforce, particularly the medical and nursing components. The challenge for the future will be in balancing both these developments and the prevention of fragmentation of care delivery.

In Australia, enrolled nurses (EN) have been mainly utilised in the aged care sector but, with the shortage of nurses in the workforce, there is an increase in their utilisation in acute settings. Whilst their scope of practice does not equate with that of the RN, they are perceived in Australia, nevertheless, as more acceptable to nurses and nurse managers in supplementing the nursing workforce than are UAPs. Advantages of deploying this category of worker include the fact that their educational preparation and scope of practice are defined and that they can be produced more quickly in a period of paucity due to the shorter length of their education programme. Furthermore, they are regulated by the same body as RNs and, therefore, subject to similar re-licensure, ongoing competence requirements and the same disciplinary provisions.

From Africa, Dovlo (2004) reports on a review of using mid-level cadres as substitutes for a range of health professionals. These are health workers who receive education at a lower level than the professionals for whom they substitute such as physicians, pharmacists and nurses. The study included cadres in countries such as Tanzania, Malawi, Mozambique and Ghana. The findings support the use of cadres in these countries especially as there is an increasing demand for the services of health professionals to deliver anti-retroviral treatment. He further recommends that there is a need to determine the nature and composition of the health workforce in Africa in the context of health professional emigration.

The introduction of new clinical roles is of great interest to nursing as, inevitably, these roles will overlap with the nursing role. Therefore, the education preparation and competency development for new clinical roles needs to be undertaken in conjunction with nurses to prevent duplication and minimise overlap.
Section Four: Discussion and Future Directions

Discussion

Defining the relationships between different issues discussed in this paper with any degree of precision is not possible. This is because the issues themselves are very complex and the often mutually interdependent relationships are constantly changing. If the notion of regulation in its broadest definition is viewed as the starting point and safe competent care as the end point, the other elements such as education of nurses, initial and continuing competence, employer responsibilities, role definition, overlap and skill mix all interact to reach the end point. What is unambiguous in this rich interplay is the obligation and responsibility of professional nursing organisations to participate in all of these elements.

Self-regulation is clearly under threat to a greater or lesser degree depending on the country. Consumers are demanding a greater role in the regulation of health professionals. One of the challenges for the future of professional self-regulation cited by the Royal College of Nursing (RCN 2004a) is defining the boundaries between it and other forms of regulation, such as that imposed by the employer and other regulatory bodies (e.g. safety and quality and other accreditation bodies). RCN cites the challenge of professional regulators setting standards for ongoing competence. It also makes reference to umbrella legislation, which it says has the potential to blur the roles of all health professionals being regulated by treating all professions as similar, and not taking account of individual professional variations. Regulatory relationships within teams are unclear as a nurse may be accountable, for example, to one of the therapists or to a non-clinical person.

The role of governments in regulation, both in the context of public sector reform and in the development of trade agreements, has the potential to derail what the profession would view as maintenance of acceptable standards of care. The development of international competencies by the nursing profession is a significant advance given the current emphasis being placed on the growth in nurse migration.

In the context of maintenance of standards of nursing care and responding to consumer demands and expectations, the issue of continuing competence is probably one of the most difficult challenges faced by health professionals, including nurses. With the current emphasis on the incidence of adverse events, consumers will not be satisfied with anything less than a well-articulated method of ensuring continuing competence. This has wide-ranging implications for employers, educators, regulators, nurses and nursing organisations.

Similarly, the implications for the workforce of changes to role definition and skill mix are great. The literature reports new roles for nurses are often being developed without reference to educational preparation, licensing requirements or role definition. As this development can be somewhat haphazard, there is a need to introduce new roles in a planned manner working from a knowledge base of exactly what it is that the role will entail. Otherwise, nurses will be dissatisfied with their roles and can be overloaded with work if the role is not properly researched. Unfortunately studies to define roles cannot be accomplished in a generic manner – they need to be specific to the service setting and health system in which they are placed. It is doubted that they can inherently be replicated across health settings. There are significant opportunities for nurses, especially advanced practice nurses or nurse practitioners, in taking up advanced roles.

The introduction of the role of UAPs and their place in the health team needs to be negotiated with nurses and other staff. The existence of second level nurses may be very advantageous. Knowledge about how regulation deals with the responsibilities of delegation in this context is very important.
The RCN, in a discussion paper on the role of the nurse (RCN 2004c), indicates that changes to skill mix whereby nurses take on new roles have significant implications for the future, as the burden of provision of health care (both primary and acute) will fall directly on nurses. In addition, the size of the nursing workforce will need to expand accordingly. This has grave implications for the future demand and supply of nurses. As nurses have a broad, generalist, clinical-focused education, they are the natural professionals to take on new roles with some further education specific to the role. We must, on the other hand, be wary that health services in one sector are not plundered to provide services in another.

Research on outcomes of care delivered by nurses versus physicians in the primary health care setting shows that nurses can deliver care of the same standard in the same context as physicians. However, there are some caveats on this outcome. Collaboration to produce shared competencies in this setting is desirable.

From the papers reviewed, the development and design of undergraduate nursing programmes need to involve the profession, employers, regulators and nursing academics. Some authors have gone as far as to recommend structural links between service and education if clinical competence is to be assured. It is also clear that nursing curricula need to be reflective of the changing role of the nurse and provide a sound base for practice in the future. Flexibility of nursing curricula was another evident theme. Others have recommended closer educational links between all undergraduate health professional programmes.

Flexibility is also a theme in the education arena to enable educational programmes to produce nurses who are able to function effectively in a rapidly evolving environment. Employers and the profession are leading this change although, to some degree, they are also responding to demands placed on them by social and political change. Links between employers or the health service sector and education providers need to be strong and formalised to enable education providers to be informed of the exact nature of intended changes. Flexibility of nursing education programmes is a given in a rapidly changing health care world as education providers struggle to produce nurses who are able to practise in a health care world which is in constant flux. Flexibility is also important in the regulatory arena as registration boards, which frequently approve nursing curricula leading to registration, need to be in a position to respond to changing societal and technological demands.

Another theme, which is evident throughout the literature review relating to nursing education programmes, is one of collaboration and cooperation between the education and service delivery settings. Educational providers need to be aware of competency development and the need for nurses to be engaged in lifelong learning. Flexibility of delivery of continuing education programmes is essential if nurses are to engage in this education to the level expected of either their employer or registration board.
Recommendations

In summary, the key implications for the nursing workforce are as follows:

1. In order for professional self-regulation to be sustained, consumers must be part of that regulation.
2. Nursing regulation needs to be transparent and flexible enough to reflect the changing work environment and the development of new roles.
3. The boundaries of regulation – professional self-regulation and its interface with other forms of regulation – need to be defined.
4. In an environment of increasing globalisation, registration processes need to be sufficiently flexible to accommodate nurses from other countries.
5. The nursing profession must remain vigilant to ensure that new models of regulation, such as umbrella legislation, and trade agreements do not erode nursing standards or diminish nursing identity.
6. Nurses need to remain competent throughout their working lives and, to achieve this, there is a need for the development of assessment methods.
7. Nurse education programmes at undergraduate, postgraduate and continuing education levels need to be developed jointly by employers, regulators and the nursing profession.
8. The structural elements of nursing curricula need to be inherently flexible to enable adaptation to changes in service delivery.
9. Some aspects of nurse education should take place in collaboration with other health professionals, particularly in specialties where multiple health professionals practise side by side.
10. Shared competencies between nurses and those with whom their roles overlap need to be developed.
11. In order for nurses to be equipped to take up enhanced roles, all nurse education programmes need to be pitched at a level commensurate with other health professionals.
12. In this era of increasing nurse migration, international competencies need to be evaluated regularly with an established updating cycle.
13. Skill mix research needs to include the effects of changed roles on clinical outcomes.
14. The introduction of changed nursing roles needs to be negotiated with both the profession and nursing regulators.
15. There is a need for more research on the cost implications of different skill mixes, taking account of variables such as the different salary and other employment conditions of different categories of health professionals.
16. Methodologies that enable application in a wide variety of settings need to be developed that can accurately assess long-term patient outcomes and patient satisfaction.
Section Five: Conclusion

In the evolving health care environment, which includes globalisation and the introduction of trade agreements, all aspects of nursing regulation must be capable of change. Nurses need to be firm about maintenance of standards of care if they are to meet the demands of the public for safe care. They also need to be flexible in embracing new roles and responsibilities. The workforce implications are many and need to be approached in a measured and coherent manner to enable the satisfaction of both the public and nurses.
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