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Contents

Abstract

Skill mix emerged as a prominent issue in nursing at a time when a new environment, imbued with management values, was forged within the NHS. The issues surrounding skill mix are often highly contentious and, not surprisingly, various interest groups either welcome or reject attempts to examine the different combinations of staff, qualified and unqualified, experienced and inexperienced, in relation to costs, outcomes and quality of nursing care.

Despite the strong passions aroused by the debate, other factors, most notably demographic changes and the possible shortage of nurses, new demands on health care services and the call for more cost-effective use of resources, have kept skill mix foremost on the policy agenda.

This review covers manpower planning, an area where considerable efforts have been made to determine the number but rarely the mix of nurses required to provide the necessary care for patients. In addition, previous work on staff turnover, and the possibility of substituting less qualified for more qualified staff, are examined in relation to cost-containment, recruitment and demography, and the creation of a new single level of nurse. These factors, along with the introduction of health care assistants, will have an important influence on the future shape and structure of nursing and, of course, the composition of the skills available.

The issues associated with skill mix in nursing are complex and often highly political. As a result great care is required when determining the combination of scarce, expensive skills which provide good quality patient care at least cost.

1. Introduction

Nursing in the United Kingdom has arrived at a major crossroad. Projected demographic changes, the changing demands of health care services and the need for the cost-effective use of resources have mapped a new course for the development of the profession. The main existing guides for this development are to be derived from the *Strategy for Nursing* (Department of Health, 1989a) and the documents relating to the implementation of *Project 2000* (UKCC, 1986).

The publication of *Mix and Match: A Review of Nursing Skill Mix* (DHSS, 1986) reflected increasing interest by senior nurse managers and policy makers in the potential for providing nursing services through different combinations of nursing skills. The purpose of the review was to examine the levels of mix of nursing staff in relation to costs, outcomes and quality of nursing care.

Five years after 'Mix and Match', skill mix continues to be an important debate in nursing and the subject of several research studies. The purpose of the present review is to highlight a number of issues having a bearing on skill mix.

The main areas chosen for consideration are: the likely response of different groups within nursing to the debate over skill mix; nursing manpower and resource management; staff turnover; staff and skill substitution; support workers and assistants; and standards of care and quality of care.

Before considering each of these areas it is perhaps helpful to attempt to make a distinction between 'grade mix' and 'skill mix' in nursing. Grade mix refers to the number of sisters, staff nurses, enrolled nurses and auxiliaries required - that is, the number of staff of each grade. Skill mix on the other hand refers more to the skills and experience of staff within those grades - for example, how many years experience does a staff nurse have in her present specialty and does she have a post-basic qualification in that specialty?

However, while years of experience and post-basic qualifications are important, the implication that skills increase with length of service is not necessarily true. The relationship may well be curvilinear with skills increasing with experience to begin with but then declining once a certain level has been reached. More complex issues, such as career intentions, pursuing an identified career path and evidence of up-to-date research knowledge are, arguably, at least equally important considerations. A yet wider definition of skill mix also includes the balance between nursing and other professions and occupations in the provision of care.

2. Interest Groups Within Nursing and Skill Mix

While topical as an issue it would be wrong to assume that skill mix is desirable or that a unified view prevails in nursing. On the contrary, skill mix has always been a thorny issue (Kings Fund, 1981). In her review of the literature for 'Mix and Match' (DHSS, 1986) MacGuire also

came to the conclusion that it represented the battle line between the nursing profession and the employing authority: the former strongly committed to the view that all aspects of nursing should be carried out by qualified staff; the latter believing that this consideration has to be set against the need to provide a cost-effective service. Trevor Clay (1987), the former General Secretary of the Royal College of Nursing, has voiced the concerns of those nurses critical of the lowest common denominator approach which attempts to compile a nursing workforce for the least cost consistent with minimum standards. The implications for cost-effectiveness of a professional service are discussed further in the later section on 'Staff and Skill Substitution'.

Given the heterogeneity within nursing it is inevitable that different groups will represent different interests and alternative points of view. White (1985) identifies a form of pluralism within nursing composed of three main interest or subgroups, which she labels 'generalists', 'specialists' (or 'professionalists') and 'nurse managers'.

In spite of attempts in this country to introduce such innovations as the 'nursing process' and 'primary nursing', with their emphasis on greater autonomy for nurses and systematic, individualized care for patients, task allocation has not completely disappeared as a method of organizing patient care. Staffing the task system requires a hierarchy of skills provided by those with specialist training and a formal qualification (registered and enrolled nurses); those in the process of obtaining those qualifications (learner nurses); and those not

seeking or in possession of nursing qualifications (auxiliaries). Organizing work in this way reflects the earlier influence of division of labour and scientific management theories.

In addition to the purely economic arguments, the allocation of different tasks to different employees is also presented in terms of the need to preserve scarce skills by putting qualified staff to tasks which only they can perform so that valuable resources are not wasted. Under such a system the task worker or generalist displays a greater willingness to accept that the overall process involves a range of tasks, some of which require a high level of skills and training, other which do not. The need to accomplish skilled, semi-skilled and unskilled work provides an important platform for those who advocate the merits of skill mix in nursing.

Insofar as nursing can be separated into elements some of which are simpler than others, and each of which is simpler to perform than the whole process, certain labour market principles then have relevance. The most important of these asserts that *'the amount of staffing required to perform the process can be purchased more cheaply as separate elements than as a capacity integrated into a single person'* (Braverman, 1974).

However, Pearson (1986) presents the views of those nurses who would take issue with the usual assumption that 'basic' nursing tasks are simpler than 'technical' tasks. Indeed, the issue of skill mix is seen by many 'specialists' and 'professionalists' as the antithesis of a professional service. Again, Pearson (1986) expresses the view of

this important interest group who believe that the preoccupation with skill mix, and the continued presence of unqualified staff within the NHS, will undermine the hard won progress made by nursing towards professional status. While not advocating such a strong line as Pearson, the Royal College of Nursing supports the notion of a nursing workforce, all of which is qualified.

For many 'professionalists', the central question is not how many auxiliaries and qualified nurses are needed but rather how many patients can a qualified nurse give care to? The concentration on skill mix is regrettable from their point of view because it feeds the myth that anyone can give basic nursing. Moreover, it perpetuates the notion that nursing practice is no more than the completion of a series of tasks by a mixed team of workers with variable skills. Others, while in sympathy with much of the 'professionalist' cause, nonetheless accept that some tasks, currently undertaken by nurses, could and should be delegated to unqualified staff.

'Professionalists' in nursing are not alone in their resistance to skill mix. In its quest for professional status teaching has also rigorously resisted attempts to introduce untrained aides and helpers into the classroom, though not always successfully. In addition, teachers have pursued two further related goals: the first, that all new entrants would possess a professional teaching qualification; the second, that teaching would eventually become an all graduate profession. Both reflect Jackson's (1970) stipulation that the authority of the 'professionalist' is legitimated through an 'education for life' rather than a 'training for task'.

Professionalization and professionalism are terms associated with the process in which organized occupations like nursing and teaching attempt to make exclusive claim to perform a particular kind of work, control training and access to it, and retain the right of determining and evaluating the way the work is performed (Friedson, 1973). The presence of untrained or unqualified staff inhibits the achievement of those objectives.

However, the goal of professional status is not supported by every group in nursing. While accepting that a number of highly qualified staff would be better paid and have more prestigious and satisfying jobs, Salvage (1985), reflecting the 'generalist' point of view, examines the likely effects of professionalism on junior and unqualified staff and, most importantly, on patients. She concludes that professionalism encourages divisiveness; imposes a uniform view on nurses; denies the needs of its workers; emphasizes an individual rather than a collective approach; fails to challenge the *status quo*; and offers weak support to the NHS.

Nurse managers, the third interest group identified by White (1985), do not share the same value systems or goals as the 'specialists'. Like the 'generalists', but for different reasons, they accept the inevitability, and support the desirability, of skill mix in nursing. However, their peers are no longer grass-roots nurses but treasurers, administrators and civil servants with whom *'they have to employ fiscal arguments and actuarial values'*. Given their responsibility for managing resources and responding to present and future needs managers, of necessity, become less involved in the day-to-day care of

patients and more preoccupied with the control of budgets and cost-effectiveness. The substitution of less expensive for more expensive resources, less qualified for more qualified staff, are among the options for achieving these managerial objectives. In a sense, the end becomes increasingly more important than the measures to that end. Provided acceptable standards of care are maintained it matters little what means are employed towards that end as long as they represent the cheapest option available.

In two recent publications Robinson (1989; 1990) examines in detail the the relationship between power, politics and policy in nursing. One theme is the marginalization of nursing and its invisibility in the policy arena. In this context she highlights the process whereby senior nurses were side-stepped and stripped of their power during the structural changes in the NHS following the Griffiths report (DHSS, 1983). In the new *milieu* dominated by management values and ideology it is general managers, few of whom are nurses, who now take the important decisions which determine the composition and skills of the nursing workforce. While agreeing with part of White's analysis, Robinson (1990) believes the system described by White is in fact elitist rather than pluralist because the emergence of consensus where the majority view prevails, impicit in pluralism, rarely happens in nursing.

For the general manager control over resources, especially the grade and skill mix, represents an essential means for achieving policy goals. In this new climate, skill mix has inevitably become closely linked with cost containment - the latter especially castigated by some

observers for its role in the deskilling and the proletarianization of nurses (Storch and Stinson, 1988).

The analysis presented by Robinson and Storch and Stinson is broadly in line with Dingwall and McIntosh's (1978) assertion that once a particular interest group, such as general managers, gains dominance it then has the power to determine the value of different tasks. Depending on circumstances, it may be judged no longer efficient or expedient to allow basic nursing care to remain the sole preserve of the professionally qualified nurse. While general managers remain in the ascendancy, grade and skill mix will continue as a major policy issue with manpower, costs and quality key elements in the debate.

3. Nursing Manpower and Resource Management

In this country the term skill mix has a relatively recent usage when applied to nursing although related terms such as manpower and turnover have been around for much longer. Much of the work on manpower planning has been an attempt to determine the number, but rarely the mix, of nurses required to provide the necessary care for patients. In the past 'establishment', that is, the number of nurses required to staff a ward or hospital, has been based on estimates of bed occupancy. In most hospitals, however, the number of beds occupied seldom reflected the true nursing workload. In an attempt to derive more accurate predictions other studies have calculated the amount of nursing time required by patients in different dependency groups.

The 'Aberdeen Formula' (North Eastern Regional Hospital Board, Scotland, 1969) is a widely known method for calculating the staffing requirements of a hospital ward which takes into account variations between specialties and hospitals.

A later study (Auld, 1976) also attempted to produce a formula for nurse staffing. The emphasis in this and many other studies has been on the physical requirements of patients with little attention given to other aspects of their care, such as their social, psychological and educational needs. Aware of the limitations of previous studies Rhys-Hearn (1974) developed a method for calculating a nursing establishment which took into account all aspects of nursing care across all specialties.

Critical of many of the existing approaches to manpower planning, Telford (1976) stressed the importance of professional judgement. His work can be seen as an attempt to develop a methodology which recognizes both the importance of values and beliefs developed from experience and the need to counter mechanistic view of behaviour.

Gault (1982) is also highly critical of the technical, methodological and philosophical basis of 'Aberdeen' and similar formulae. The problem, according to Gault, is not limited to the question 'how many nurses?' but includes prior consideration of even more fundamental questions, such as, 'why are nurses required?' and 'what sort of nursing is needed?'

Macleod Clark and Hockey (1979) came to the conclusion that while a great deal of work had been undertaken in the area of patient

dependency and establishment requirements there is no simple method or system which can be universally applied. A subsequent survey (DHSS, 1984) indicated that while many authorities were using some systematic approach for the supply, demand and control of nursing resources, it was also evident that some districts and regions had yet to implement such systems to facilitate nurse manpower planning. In spite of the huge number of studies on nursing manpower, and official encouragement from the Department of Health for regional and district health authorities to implement reliable and agreed systems for determining nurse staffing requirement, the National Audit Office (1985) was critical of the inefficient use of nursing resources in the NHS.

One part of the Resource Management Initiative (RMI), launched in 1986 to promote efficiency and effectiveness in the NHS, focussed on the development of computerized nursing management information systems. 'Excelcare', 'Criteria for Care', 'GRASP', and FIP (Financial Information Project) are among several systems currently in use - details of these, and other systems, are contained in the manual 'Nurse Management Systems' (Greenhalgh, 1989). Many of the systems claim to generate information which can be used to determine the mix of grades required on a shift and, with some systems, the number of trained and untrained nurse hours required.

Much development work has therefore taken place since the critical remarks of the National Audit Office in 1985. While welcoming much of this work Norman *et al* (1988) warn against the dangers of greater complexity and detail which do not necessarily imply greater accuracy or rigour, *'... there are potentially many disbenefits in developing a*

system that is unnecessarily complicated'. The counter argument is that complex issues are seldom amenable to simple solutions and, moreover, the level of complexity depends on how and for what purpose a system is intended. Clay (1987), however, has remained particularly critical of the new climate of general management which, in his view, has spawned increasingly intricate ratios and formulae to replace the skill, experience and professional knowledge of nurse managers in making crucial decisions about the deployment of staff.

Despite the different points of view on this issue, the main trend has been the gradual acceptance that systematic approaches to the control of nursing resources are essential if the present inconsistencies in staffing levels, both within and between health authorities, are to be reduced. In pursuing this goal there is always a danger of 'throwing the baby out with the bath water'. In short, systematic approaches should perhaps complement rather than replace the skills, experience and professional knowledge of nurse managers. While seemingly sensible in principle, the practical advantages of such a compromise have yet to be demonstrated.

4. Staff Turnover

On the question of staff turnover, analyses undertaken for the Briggs Report (DHSS, 1972) suggested that wastage and turnover rates among trainee and trained nurses had to be interpreted in the light of what was happening to other groups of working women, for example, primary school teachers. On this basis, and taking into account age and

grade, it was suggested that nursing was not too dissimilar to other occupations that contained a large proportion of women.
While conceding that a proportion of turnover and wastage was inevitable where there was a large female workforce, and that the problem was not confined solely to the health service, Mercer (1979) also concluded that a certain level of attrition in nursing was avoidable with improved management and working practices.

Reflecting the continued interest in this important aspect of manpower planning the last five years have yielded a further batch of studies - for example, Bosanquet and Gerard (1985), United Kingdom Central Council (1986) and Price Waterhouse (1988). In addition, concern in the 1980s for quality assurance in nursing has led many nurse managers to examine the relationship between staffing numbers, skill mix, workload and standards of care.

Problems with turnover and wastage are not spread evenly throughout the country and, moreover, are variable throughout the grades and specialties of nursing. For example, the recent survey commissioned by the Royal College of Nursing (Waite and Hutt, 1987) provides evidence that regional health authorities in the south of England, most notably Oxford, the four Thames Regions and Wessex, have experienced the greatest instability in their nursing workforce.

Another recent study of the movement of nurses and nursing skills (Thomas *et al*, 1988) found that 42 per cent of the nurses joining private acute hospitals, and 28 per cent of those joining long stay private nursing homes, came directly from the NHS. Private acute

hospitals in particular appear to attract specific groups of nurses: those under 30 with specialist skills in theatre and renal nursing, intensive care and oncology. On average those nurses moving into the private sector gave five years post qualification service to the NHS before making their move. Although the annual net 'loss' of NHS qualified nurses to the private sector was shown to be relatively small, an average of 5.5 nurse per DHA per year, the study noted that some DHAs were more seriously affected than others.

5. Staff and Skill Substitution and Costs

Economic considerations have always played a crucial part in health provision. The delegation of responsibility from highly qualified to less qualified staff is one possible way of containing increasing costs in the NHS where salaries for nurses account for nearly a half of all labour costs.

While important, cost containment is not the only reason for examining the extent to which nursing staff and skills can be substituted. There are at least two other considerations which, in combination with cost containment, make substitution such an important issue. The first concerns the links between manpower planning, recruitment and demography. For many years nursing, like teaching, had been able to rely on an abundant crop of suitably qualified school leavers who, without too much encouragement, would present themselves for training. However, forecasts of the number of suitably qualified young people entering the labour market during the 1990s is alarmingly low

(Poulton, 1988) - an outcome sometimes referred to as the 'demographic time bomb' or 'black hole'. Some commentators now believe that nursing will have to draw on other sources of recruitment and develop new initiatives in order to fulfil its manpower requirements.

In a recent article, however, Grocott (1989) takes a critical look at the demographic 'timebomb' or 'black hole' theory - the assertion that lack of staffing rather than finance poses the greatest threat to the provision of patient care. His analysis indicates that while the intake of learners to basic training has indeed fallen during the 1980s, the size of the total workforce of qualified practising nurses continues steadily to increase. In short, at a national level, the 'wastage rate' is going down as fewer qualified nurses leave the NHS. However, the position at district, and to a lesser extent at region, can deviate significantly from the national picture.

A second consideration in relation to substitution is prompted by the UKCC's proposals for nurse training. In addition to the cessation of enrolled nurse training, the introduction of a new single level of nurse has important implications for student nurses who will become largely supernumerary to NHS establishments during the three years of their professional preparation.

These factors, separately or combined, will have an important influence on the future shape and structure of nursing and, of course, the composition of the skills available.

It has been recognized for some time that certain tasks previously performed by doctors, for example, dialysis, could be delegated to

nurses (Department of Health, 1989b). Likewise, under the present structure of nursing, opportunities exist for substitution between nursing auxiliaries and enrolled nurses and between the latter and registered nurses. In fact, on the basis of job evaluation, earlier studies had been unable to find any recognizable difference between the work performed by enrolled and registered nurses (National Board for Prices and Incomes, 1967; DHSS, 1977). 'Mix and Match' also concluded that the roles of first and second level nurses were often ill-defined with staff nures and enrolled nurses generally regarded as interchangeable.

It should be stressed, however, that neither 'Mix and Match' nor the two earlier job evaluation studies had related the nursing care provided by registered and enrolled nurses to patient outcomes. In terms of a distinction between 'good' and 'successful' nursing, different groups of nurses were seen to be no better or worse than one another in providing good nursing. The absence of outcome measures made it impossible to say whether one group was able to achieve a greater degree of successful nursing.

The substitution of less expensive staff for more expensive categories of health service staff has been the focus of many economic studies, initially North American but in the last few years a growing number of British studies of nursing. Gray and Smail (1982), for example, found that a three-fold increase in the number of unqualified nurses in Scottish hospitals over the period 1950 to 1979 was associated with savings of less than five per cent in the total pay-bill, in large part because of narrow pay differentials.

The 'Mix and Match' review (DHSS, 1986) also concluded that *'variations in costs tended to follow variations in staffing levels; skill mix had less effect, mainly because of narrow pay differentials and the way in which nursing staff costs were calculated.'* In short, the review was unable to establish a direct relationship between nursing skill mix, as reflected in the ratio of qualified to unqualified staff, and the cost effectiveness of the service.

Gray (1987), however, questioned the conclusion from 'Mix and Match' that variations in skill mix are not related to variations in nursing costs per patient. By recalculating the data he was able to show that by focussing on nursing costs per nursing hour, rather than total nursing costs per patient, *'wards with a high proportion of unqualified nurses have lower costs per nursing hour, and vice versa.'*

In their study of nurse substitution and training Hartley and Shiell (1988) found that a considerable degree of substitution was taking place on wards containing student and pupil nurses. During the third year of training, for example, at least half of a trainee's duties could be at staff nurse level. Since trainees are cheaper than qualified staff the study concluded that this mode of training was extremely cost effective.

6. Support Workers and Assistants

Given that one form of substitution will no longer be available once student nurses become supernumerary who will fill the gap they leave? One proposal from Project 2000 is for a new grade of helper to undertake specific tasks in support of, and under the supervision of, qualified nurses.

The study commissioned by DHSS (Price Waterhouse, 1987) assessed the contribution which the youth training scheme (YTS) might make as an entry route for suitable candidates to nurse training and as a training for support workers in health and social care. In providing a clear 'yes' to the latter question the study also concluded that YTS was a relatively low cost means of increasing recruitment to nurse training, when compared to other entrants or attracting recruits from other sources. Moreover, the study endorsed the view of the Chief Nursing Officer's Steering Group that a national consortium should be established to determine the competences of support workers.

However, the precise role of the new support worker or health care assistant remains uncertain and the response of the nursing profession has been at best equivocal. Dickson and Cole (1987) suggest, for example, that the profession, in an attempt to create a clear separation between nurses and assistants, has distanced itself from them and their training. They also conclude that *'the debate about the helper disguises a debate about the future of nursing itself'.*

In a recently completed study Robinson *et al* (1989) suggest that the degree of attention given to the support worker is disproportionate to

the small contribution they currently make on the ward. Despite this observation they still found evidence to substantiate the claim that support workers release qualified nursing staff to deliver more direct and indirect nursing care. Moreover, support workers made possible a small reduction in unit labour costs but there appeared little scope for further major savings. The main issue, according to Robinson *et al*, is how to replace the sizeable contribution made by student nurses, a problem unlikely to be solved by current minor juggling acts with ward staff. Among its recommendations the study highlights the need for management to consider the effects of the separation of nursing, clerical and domestic budgets on ward work and on ward skill mix; and also the need to develop routine standardized ward workload measurement systems and cost information.

In their study of nurse staffing and support worker requirements for acute hospitals Ball *et al* (1989) found that a large amount of time was spent by trained and student nurses on work which could be undertaken by support staff. Taking account of the varied patterns of work between specialties, the study put forward a flexible framework for staffing which would involve nurses, care assistants, hotel workers and clerical staff. The study claims that such an approach, while not necessarily resulting in cost savings, would provide greater job satisfaction for all staff and good quality of care for patients.

While much attention has focussed on the cost effectiveness of substituting less qualified for more qualified staff few studies have considered whether a greater proportion of qualified staff necessarily implies greater costs. Among the exceptions, Binnie (1987) reports

that by recruiting young staff costs were not increased when one hospital introduced primary nursing with proportionally fewer auxiliaries and enrolled nurses than usual in the new team. Moreover, the staffing level dropped by only one WTE. MacGuire (1988) also reports that within a 'no extra cost' constraint, it was still possible to reduce the proportion of unqualified staff in the workforce from one third in 1981 to just under a quarter in 1988, with no loss of WTE staff working with patients.

7. Skill Mix, Quality and Standards of Care

Quality of care had been defined as the degree of success achieved in reaching the standards set for solving or preventing patients' problems and satisfying their needs (Wilson-Barnett, 1981). Such a definition assumes an evaluation of care, an essential prerequisite of which is the specification of objectives and standards.

A standard in turn has been defined as *'the desired and achieveable level of performance corresponding with a criterion or criteria against which actual performance is compared'*. In short, a base line of good practice. According to the Working Committee on Standards (RCN, 1980) the intention of evaluation in quality assurance *'is simply establishing worth in order to monitor and improve patient care, by identifying deficiencies and thus inviting and enabling corrective action'*.

The Working Committee on Standards also came to the conclusion that 'good' nursing care was *'planned, systematic and focussed care which implies a continuous and dynamic pattern of assessment, planning, action and review'*. The committee felt that unplanned, uncoordinated care was wasteful of scarce resources and itself an example of poor standards. Given this view, resources are employed to the optimum when they help achieve standards of care which are no more and no less than required for a patient. To devote more resources than is necessary is wasteful, not least because those resources then become unavailable for the care of other patients.

The related issues of quality assurance and quality of care are highly topical, influenced both by the NHS Management Board's focus on cost-effectiveness and consumer satisfaction and, the European Community's stipulation that all member states build, by 1990, an effective mechanism for ensuring quality of patient care.

An important development in this country over recent years has been the attempt by the nursing profession to find an effective method by which the level of care can be measured so that poor practice can be identified and corrected.

Several organizations in nursing and health care are responding to the challenge. The King's Fund, for example, has launched a project to stimulate the assessment and promotion of quality assurance in the health care field. In addition, the Royal College of Nursing has just issued its first publication on 'Standards of Care' (Kitson, 1989) - an important initiative given that the Department of Health, as

recently as 1977, found little evidence of nationally agreed standards of nursing care (DHSS, 1977). Although several district health authorities have also initiated quality assurance programmes very little is known about the successes and failures of these projects. Such publications as have emerged about quality assurance in the United Kingdom *'tend to be at the level of exhortation, encouragement and would-be conceptual clarification ... there are few reports of projects pursued to their conclusion'* (Ellis, 1988).

A general criticism of many instruments which purport to measure the process of nursing, such as Monitor and Qualpacs, is that different forms of validity still require extensive verification (Giovanetti *et al,* 1984; Kitson, 1986). Based on her work with elderly patients, Kitson (1986) sets out an alternative approach to measuring the quality of care. In contrast to other instruments the Therapeutic Nursing Function (TNF) contains a clear statement of a philosophy of nursing - *'care which ensured that the patient achieved optimum independence in self care activities and was treated as an individual respected and encouraged to make his own decisions'.*

While cost containment and efficiency are important considerations in nursing they can not be divorced from quality of care issues. In determining the costs of nursing care it is essential to discover what this expenditure obtains. In a review of the quality of care in the field of health Mitchell (1982) stresses that knowledge of the quality of care provided for a specific quantity of resources is especially important *'in times of cost containment if rational decisions about optimum deployment of limited resources have to be taken'.*

8. Discussion

The skills and experience possessed by nurses represent a valuable resource within nursing. For these reasons the 'Mix and Match' review was asked to identify various aspects of quality of care so that those features most influenced by the nursing staff could be identified. The review found no clear relationship in long stay wards between a higher proportion of qualified nurses and the practice of individualized patient care. However, in wards where the overall staffing level and the proportion of qualified nurses was low in relation to the workload it appeared that only the basic physical needs of the patients were being met. The review went on to say that the quality and cost effectiveness of care depended crucially on the leader of the ward nursing team.

MacGuire (1988) cautions that reviews and studies like 'Mix and Match' are too often carried out at ward and unit level rather than at the patient level where it really counts. Instead of the establishment ratio, or the ratio of trained to untrained staff, MacGuire believes there is a strong case for investigating skill mix in terms of the contact time between nurse and patient (direct patient care) and examining whether that contact is with a trained or an untrained nurse. Luker (1981) also believes that the evaluation of nursing care should move away from the volume and intensity of service approach of so many workload and dependency studies.

Nurses have frequently adopted Donabedian's (1980) definition of care evaluation as involving three interdependent elements: 'structure',

'process' and 'outcome'. The three are inseparable to the extent that to assess quality effectively, information about the resources available (structure), how they are used (process) and the eventual effects (outcomes) needs to be collected before a judgement of quality can be made (Pearson, 1987).

As yet there is very little research in this country which specifically looks at skill mix in relation to Donabedian's three broad areas of structure, process and outcome. Indeed the paucity of published literature on skill mix generally led MacGuire in her review for 'Mix and Match' (DHSS, 1986) to conclude that few studies treated this subject as a topic in its own right. The studies which are available invariably treat it as a secondary issue and seldom directly address the central issue of whether patient outcomes are affected by the skill mix of the nursing team, or whether the same patient outcomes can be achieved by varying skill mix combinations.

Despite the relative absence of published material, the increasing concern in the 1980s for quality assurance in nursing has led many nurse managers to address the relationship between staffing numbers, skill mix, workload and standards of care. However, as noted earlier, progress in implementing reliable and agreed staffing systems has been slow. For this reason the NHS Management Board commissioned a study to examine service quality in relation to how nursing time was actually spent. The study (Department of Health, 1988) undertook secondary analysis of a number of previous local studies which had employed the *Criteria for Care* methodology to monitor nursing activity. Results from the secondary analysis indicated considerable

variations between hospitals; between wards in the same hospital; between wards of the same specialty; and between and among grades of nursing staff. The study concluded that the key components of the efficient and effective use of nursing resources included: valid and reliable patient dependency/workload measures; agreed and measurable standards of care; and a mix of nursing skills related to patient care.

While a number of studies have been mounted since the publication of 'Mix and Match' there still exists a lack of consistent evidence relating skill mix among nurses to the quality of care given and received, irrespective of how the quality of care is measured. Several health authorities have also undertaken their own studies on skill mix in recent years. However, a combination of pressure of work, limited experience of writing for journals and a wish to retain results for internal use, often prevents health authorities disseminating the findings to an external audience. Potentially there is much to be learnt from a thorough synthesis of these studies to complement the limited amount of work which has seen the light of day. Even so, much further work is still required, both to verify existing findings which, are at best equivocal, and to explore fresh issues in the skill mix arena.

Several strands of work are necessary. At a very basic level improved measures of skill mix are required in order to avoid the limitations of indicators which reflect little more than grade and qualification mix. In similar vein, existing measures of quality of care require careful scrutiny and, if found wanting, more robust measures

developed. Though a specialised and difficult area further work on measuring costs is also urgently needed.

Skill mix is a highly complex issue in nursing which cannot be resolved on the basis of one study. In an ideal world the work on measurement should precede those studies which would examine the implications of skill mix in nursing for quality of care and costs. In reality, despite the limitations of existing measures, the different strands of work will need to proceed hand in hand. Existing studies provide the foundations on which a body of knowledge can be developed. However, skill mix is also a highly political issue and the results from any new study run the risk of posing a threat to one or more of the important interest groups within nursing.

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