Health policy makers and planners the world over are acutely aware of the current shortage of nurses. The lack of suitably qualified health care workers is one of the main impediments to improving the quality and safety of care, and there are concerns that the situation may become more serious in the future. Workforce shortages have been cited as one of the biggest obstacles to achieving the Millennium Development Goals for improving health worldwide. Sub-Saharan Africa has been estimated to need a further 600,000 nurses if it is to meet the Millennium Development Goals.

For a generation, the people who deliver health have been shockingly neglected. It takes a long time to build up human resources for health, but just a few years to run them down. And in too many places that is exactly what has happened (20). The supply of nurses in high as well as low income countries is failing to keep pace with demand. Changes in the age structure and disease profile of the population as well as advances in medicine will lead to an increased demand for health care. The aging population in many countries has been accompanied by a decline in the burden of communicable, maternal, perinatal and nutritional disease and an increase in the incidence of chronic illnesses such as diabetes, hypertension, cancer and cardio-vascular disease. The demand for more rehabilitation, palliation and support over long periods seems set to rise. This type of care is...
often provided by nurses.

At the same time, the nursing workforce in many countries is aging. For example, approximately 150,000 of the one million people employed in the National Health Service (NHS) of the United Kingdom (UK) are aged fifty or over and are therefore eligible for early retirement. The “retirement bulge” affects nurses more than many other workers. Over the next few years the NHS should expect to lose some of its most experienced members whose skills and knowledge cannot easily or quickly be replaced. Countries such as Denmark, Norway, Sweden and France, where the average age of employed nurses is between forty-one and forty-five years, are also witnessing a “graying” of the nursing workforce. In other countries the skills of the nursing workforce are being lost for different reasons. In sub-Saharan Africa the HIV/AIDS pandemic is seriously depleting the number of health workers, including nurses. In Malawi, for example, 45% of health worker deaths were due to AIDS-related illnesses and in a few years the HIV prevalence rate among nurses in Lusaka, Zambia, rose from 34% to 44%. Looking at the whole continent of Africa, HIV/AIDS is estimated to have caused between 19% and 53% of all deaths of health care workers in the public sector. The spread of HIV/AIDS in Eastern Europe and Central Asia is so rapid that an epidemic of similar proportions to that in Southern Africa may be only a few years away.

Socio-demographic predictions describe the scope of the problem in a number of different countries. To continue to meet the needs of the population of the United States, for example, the health care system will have to recruit a million nurses by the year 2010, partly to meet the increasing need for health care and partly to make up for loss of staff through retirement. Similarly, in Canada 50% of nurses will retire over the next fifteen years, while the demand for nursing services is expected to increase by more than half. Consequently, Canada is predicted to have a nursing shortfall of around 361,000 by 2016. The situation is mirrored in other nations, such as Australia, which already has an estimated shortfall of 31,000 nurses in 2006.

Developing countries are also experiencing a nursing shortage, exacerbated by the “brain drain” of nurses and other health professionals to feed the shortages in the developed world. The largest health institution in Zambia, for example, has a 50% vacancy rate (the patient-to-nurse ratio can reach as high as 40:1). Not only are nurses being lost to the workforce in Africa and elsewhere as a result of HIV/AIDS, but many nurses leave to care for their sick relatives or migrate for a better life. Ethically, it seems impossible for developed countries to continue to solve their domestic staffing problems by recruiting nurses and other health care workers from countries whose need for health care is very great. The problem of the discrepancy between the need for nursing and the availability of nurses is a global challenge that seems set to increase unless local, national and international agreements and policies are set in place to reverse current trends.

The nursing profession is highly valued in many cultures, and the profession attracts the most idealistic recruits, mainly young women, into its ranks. However, female dominated professions are less financially rewarding than male dominated professions. In many countries nursing does not pay a living wage. It has long been recognized that any kind of work in health care is anxiety-provoking. Nurses, like other health care professionals, have to deal with life and death situations. They have to comfort the sick and deal with the grief of relatives. These difficulties are part of the very
nature of the work. However, the reality of nurses’ work lives in modern health care settings often involves new or newly reported difficulties, such as bullying, harassment or violence, disillusionment, dissatisfaction with pay, job stress and burnout. There is some evidence that as the discrepancy between the need for nurses and the availability of staff widens, nurses’ experience of work life is so poor that many consider leaving their jobs or the profession. So, just at the time that it is crucial to retain nursing staff, we have reports of impoverished work environments that seem designed to drive nurses out of the profession.

The purpose of this paper, then, is to examine some of the recent evidence that needs to be considered if we are to prevent the current shortage of nurses from developing into a vicious downward spiral from which the health care system will take years to recover. There is a growing body of evidence and arguments for investment in the nursing profession based on the effectiveness of the nursing workforce. There are also a number of qualitative and quantitative studies showing that nurses’ experiences of work life are often incompatible with their career goals and expectations. We argue that greater investment in human resource management and practices designed to improve the quality of nurses’ working environments are required to improve patient care. If managers and policy makers want to improve patients’ experiences and the cost-effectiveness of health care they need to invest in nurses and nursing. Because nursing is the most expensive item on any health care budget, it may be seen as an area where economies can be made. Sochalski, Aiken and Fagin, for example, argued, “Hospital systems internationally are undertaking very similar restructuring interventions, particularly ones aimed at reducing labor expenses through work redesign. Nursing has been a prime target for work redesign, resulting in changes in the numbers and skill mix of nursing staff as well as fundamental reorganizing of clinical care at the inpatient unit level.” As the need for health care increases and as patient acuity rises in acute settings, cutting the nursing budget or failing to invest in nursing could prove to be false economy.

In the first section of the paper, we discuss some of the recent studies that link the skills, education and experience of the nursing workforce to patient outcomes, including mortality and adverse events, and we summarize a number of recent systematic reviews of work in this area that contribute a stronger level of evidence than individual studies alone. Section two is devoted to some of the economic studies that have begun to draw out the cost implications of investing in nursing. These studies will undoubtedly be an important component of the evidence base for future workforce planning.

In section three we describe the poor quality of nurses’ working lives in many settings, which lead to low morale and high levels of work stress and burnout and prevent them from delivering high quality care. We argue in the fourth section of the paper that, in addition to adequate resources, the health care sector requires a new approach to human resource management. Some of the areas that require urgent action include staffing levels, teamwork, training and development, management and supervision, and increasing sensitivity to the organizational climate in health care settings. Section five describes a number of initiatives that have been designed to improve nurses’ working lives, including the Magnet Accreditation Program in the United States and beyond, the Improving Working Lives Initiative in the United Kingdom, and a number of global initiatives designed to tackle the problem internationally. We conclude with a “call to arms.”
inviting politicians and policy makers to seize the opportunity presented by the impending global crisis to change relationships between countries that are net importers or exporters of nurses and to create a new working environment in which the highest quality care can be delivered to patients across the world.

**Evidence of the Impact of Nurses**

Health care is a labor intensive industry and expenditure on workforce consumes a large proportion of any health care budget. Research on workforce issues can therefore make a key contribution to the organization and management of services and to health policy, by advising on the number of staff members, and the mix of expertise, experience and tenure that will optimize patient safety. We describe some of the most important recent contributions to the evidence base for decisions about nurse staffing under the following headings: number of registered nurses, skill mix, nurses’ experience, and nurses’ education. We then describe the findings of recent systematic reviews of research in this area.

**Number of Registered Nurses**

The number of nurses in a unit is perhaps the most basic or crude measure of the amount of nursing care that patients receive. It is often measured as the ratio of patients-to-nurses. Numerous studies have linked the size of the workforce or the nursing establishment to patient outcomes such as mortality and adverse events like falls, skin breakdown, infections and other complications. Linda Aiken and her team at the University of Pennsylvania have contributed greatly to knowledge about the impact of nursing and nursing work environments. Their work typically links information about patient mortality, adverse events and death following complications (“failure to rescue”) to survey data obtained from nursing staff that gives information about their workload and working conditions. A recent paper focused on nurse-patient ratios and patient mortality in 168 hospitals in Pennsylvania.

Data about the outcomes of care for nearly a quarter of a million patients and survey responses from over 10,000 nurses were analyzed. They found that after taking account of the patients’ own characteristics, such as age and diagnosis, and controlling for characteristics of hospitals that are known to be associated with outcomes (size, teaching status and technology), each additional patient per nurse increased the odds of patient mortality and failure to rescue within 30 days of admission by about 7%. This shocking finding should be of interest to the public (patients and potential patients), health care professionals and policy makers alike. Furthermore, each additional patient per nurse increased the odds of burnout by 23% and raised the odds of job dissatisfaction by 15% among nurses in this study. There are clear indications here that in some settings the amount of work that nurses are expected to do is incompatible with high quality and safe care and that nurses pay a high emotional cost in such situations.

More recently, Mark et al. investigated the relationship between nurse staffing levels and quality of care in a sample of US hospitals. The authors used a “dynamic panel model” to evaluate the effects of change in nurse staffing on change in quality of care. This is an important innovation because previous studies have used cross-sectional data, which limit the extent to which causal inferences can be drawn from the results. This study used data
collected annually from 1990 until 1995 from 422 hospitals in eleven US states. Key outcome measures were mortality, pneumonia, decubitis ulcers (pressure sores) and urinary tract infections. Their most important finding was that there appeared to be a non-linear relationship between the number of registered nurses and patient mortality. Mortality fell until RN staffing reached a certain point (4.62 full time equivalent registered nurses per 1,000 inpatient days). Above this number no further improvement in mortality would be achieved by adding more nurses. There were no clear associations between nurse staffing and the other three quality measures. The implication as far as mortality is concerned, then, is that there may be some optimum level of nurse staffing for different kinds of units and different kinds of patients. At the moment, some units may be overstaffed and some understaffed. This study emphasizes the importance of further research in this area to try to identify safe staffing levels and to minimize the waste of scarce nursing resources.

Skill Mix: Registered and Unregistered Nurses

A number of studies have examined the relationship between the proportion of nursing care provided by registered nurses and patient outcomes. A high proportion of registered nurses is often described as a “rich skill mix.” An important recent example is a study by Needleman et al., which has been widely cited and discussed in the media.\(^1\) They conducted one of the largest studies to date, using administrative data on the outcomes of care for over 5 million medical and over 1 million surgical patients in hospitals across the US. Results differed between medical and surgical patients. A higher number of hours of care provided by registered nurses to medical patients was associated with a shorter length of stay and lower rates of some adverse events including urinary tract infections, upper gastro-intestinal bleeding, pneumonia, shock or cardiac arrest, and failure to rescue. The number of hours of care provided by registered nurses to surgical patients was associated with lower rates of infections and failure to rescue. No association was found between increased numbers of registered nurses and death in hospital, once failure to rescue patients had been accounted for. Nor did they find a relationship between the number of other health care workers providing nursing care, such as licensed practical nurses or nurses’ aides, and the occurrence of adverse events.

In summary, their main findings were that the proportion of care provided by registered nurses and the number of hours of care provided by registered nurses were inversely related to adverse events, some of which were then, in turn, linked to mortality. The finding that a richer skill mix decreases patients’ experiences of complications and increases their chances of survival is supported by a number of other investigations.\(^1\)\(^4\)\(^-\)\(^1\)\(^6\)

Nurses’ Experience

A re-analysis by Blegen et al. in 2001 of data from two earlier studies sought to determine the relationship between nurses’ education and experience and the quality of care provided.\(^1\)\(^7\)\(^-\)\(^1\)\(^9\) The data were at unit rather than patient level, unlike the more recent studies. They did include control variables for patient acuity, hours of nursing care and staff mix in the models. The hypothesis that nurses with more experience provide higher quality care was supported; units with more experienced nurses had lower rates of falls and medication errors. Whether or not nurses in this study had
baccalaureate degrees had no effect on adverse events. In fact, there was some evidence in this study that units with higher numbers of baccalaureate nurses had higher rates of medication errors.

However, this finding may not mean that nurses with degrees give poorer care but could reflect the fact that they work in more acute settings where more medications are likely to be given or that they are more likely to report errors that they have made. Further support for the conclusion that experienced nurses give better care was found by Tourangeau et al., who reported that for each additional mean year of nurse experience on the clinical unit, there were 4–6 fewer deaths for every 1,000 acute medical patients discharged (depending on hospital type).16

Nurses’ Education

A more recent test of the relationship between nurses’ graduate status and patient outcomes supports the value of nursing degrees.20 Aiken et al. found that the proportion of graduates varied from 0% to 77% in a sample of Pennsylvania hospitals. To estimate the effect of nurses’ graduate status on patient mortality, other known impacts on patient outcomes had to be included. They showed that even in models that controlled for patient characteristics (e.g. age and diagnosis), hospital characteristics such as size, teaching status and level of technology, as well as nurse staffing levels, nurses’ experience and whether or not the surgeon was board certified, nurses’ graduate status was found to be inversely related to mortality and failure to rescue.20 A 10% increase in the proportion of nurses holding a bachelor’s degree was associated with a 5% decrease in both the likelihood of patients dying within thirty days of admission and the odds of failure to rescue.

These studies suggest that staffing levels, skill mix, nurses’ experience, and nurses’ education all appear to be important factors in reducing patient mortality rates.

Systematic Reviews of the Evidence of the Impact of Nursing

While individual studies produce important information that contributes incrementally to what is known about a topic, important decisions about social interventions cannot be based on the results of one study alone. Policy development relies on cumulative knowledge rather than single studies. Consequently, scholars now devote a great deal of time to systematically reviewing the literature to assess the extent to which there are enough studies of sufficiently high quality to warrant changes in policy and practice. Studies of the relationship between nursing inputs and patient outcomes have now been reviewed many times.21-24 The reviews differ slightly in their research questions and their ways of searching for and evaluating studies, so their results and conclusions are not exactly the same. However, a growing consensus is apparent in some of the most recent examples described below.

Lankshear et al. found twenty-two large studies of patient outcomes in acute settings since 1990.25 Many of these studies found a significant inverse relationship between RN staffing levels and mortality rates.9,12,16,26-29 Four studies found a negative association between nurse staffing and failure to rescue.13,26-28 Lankshear et al. conclude that although there is a great deal of variability in the quality of the studies, there is a consistent pattern of results, particularly with regard to mortality.25 The pattern of associations with regard to adverse events is less clear. The authors reiterate the idea, raised by a number of researchers, that
there may be some ceiling effect, above and beyond which adding additional nurses has no added benefit to patient outcomes.12 This raises some interesting hypotheses that could be tested in future research.

Lang et al. set out to determine whether the peer-reviewed literature supports specific, minimum nurse-patient ratios for acute care hospitals and whether nurse staffing is associated with patient, nurse employee, or hospital outcomes.30 They systematically reviewed studies on the effects of nurse staffing on patient, nurse employee, and hospital outcomes published between 1980 and 2003 to determine whether they could guide the setting of minimum licensed nurse-patient ratios in acute care hospitals. Nearly 3,000 articles were considered; 43 met the inclusion criteria. All studies included in the review adjusted for case mix and skill mix. Patient outcomes were limited to in-hospital adverse events.

They concluded that the evidence suggests that richer nurse staffing (i.e., higher proportions of registered nurses) is associated with lower failure-to-rescue rates, lower inpatient mortality rates, and shorter hospital stays. The main aim of their review, however, was to find information about minimum nurse staffing ratios, but only one recent study addressed this issue directly. They therefore had to conclude that the literature offers no support for specific, minimum nurse-patient ratios for acute care hospitals, especially in the absence of adjustments for skill and patient mix, although total nursing hours and skill mix do appear to affect some important patient outcomes.

A number of more wide-ranging reviews on the organizational determinants of hospital outcomes also exist in the literature. Tourangeau et al., for example, reviewed the determinants of mortality among patients who have been in acute care settings and searched for studies conducted between 1986 and 2004.31 They identified fifteen studies that met their selection criteria. The independent variables that were found to be related to mortality included nurse staffing characteristics, nurse experience, registered nurse educational preparation, clinical nursing support and a professional practice environment, as well as characteristics of the medical staff and nurse-physician relationships. This review is important because it suggests that accurate estimates of the impact of nursing characteristics can only be achieved when a number of other important variables, such as nurse-physician relationships, have been taken into account.

In summary, several recent reviews have identified and catalogued studies, mostly from North America, that have explored the relationship between characteristics of the nursing workforce and patient outcomes. The emerging consensus based on their analyses of the large number of observational studies that have been conducted over the last few years is that the evidence about the impact of nursing, while not unequivocal, is quite compelling. Nursing numbers, skill mix, experience and education do seem to be related in important ways to patient outcomes, but much remains to be determined about the size of the relationship and its functional form. Perhaps the main benefit of these reviews is that they show how much work remains to be done before decisions about safe staffing levels can be evidence based. Some of the impetus for further work in this area will come from economic analyses, to which we now turn.

Economic Evaluation

It is not enough to show that investing in nurses and nursing can save lives and improve patients’ experiences—we need to show that it
is cost-effective. We need to compare the value that is added to the quality of care by investing in nursing rather than investing in other interventions that are known to have similar beneficial effects. We also need to consider the costs of investing in nursing over the long term. The old adage “buy cheap, buy dear” may be apposite here.

**Saving Costs by Spending More?**

Rothberg et al. used data about patient-to-nurse ratios, mortality and length of stay from two of the studies by Aiken described above. They compared the impact on cost and mortality of increasing the patient-to-nurse ratios from 4:1 to 8:1. The model was most sensitive to the effects of patient-to-nurse ratios on mortality. Lower ratios were most cost-effective for (or due to) shortened lengths of stay and low hourly wages. Across the entire range of these variables, the cost of saving a life never exceeded $449,000, which is a much cheaper way of saving a life than many other interventions, such as screening. These authors conclude, “…as a patient safety intervention, patient-to-nurse ratios of 4:1 are reasonably cost-effective and in the range of other commonly accepted interventions.”

A similar study sought to determine the cost implications of higher and lower staffing levels on the costs of the occurrence of adverse events (pressure ulcers, urinary tract infections and hospital admissions) in frail elderly patients in nursing homes across the United States. Their estimates suggest that over $3,000 per resident per year could be saved in units that employ enough staff to allow thirty to forty minutes of registered nurse time to be spent with each resident, compared with units that allowed less than ten minutes. They concluded that the reduction in adverse events associated with increased nurse-to-patient contact created substantial cost savings.

However, a comparison of the impact of different nurse staffing levels on adverse events that used Quality Adjusted Life Years to measure cost-effectiveness concluded that an increase in staffing levels from the median observed in short-stay nursing homes to the recommended levels was not cost effective. One commentator observed that the importance of this paper may lie not in the results themselves but in the demonstration that it is possible to measure the cost-effectiveness of different nurse staffing levels using similar methods and expressing the results in comparable terms to those used widely in assessing health technologies like new medicines.

In the United Kingdom, an investigation undertaken by the Healthcare Commission sought to understand why nurse staffing varies so much across units in England and to find out whether higher nurse-to-patient ratios had any discernable impact on patient outcomes. This is a slightly different kind of study from those discussed previously because it was conducted by a government agency primarily interested in “value-for-money,” quality and cost-effectiveness in the NHS. Compared to previous investigations they found that the quality of data on many aspects of the quality of care (e.g. staff attitudes, complaints, communication, clinical care and outcomes such as accidents, incidents and pressure ulcers) had improved. Important findings included a link between the use of temporary staff, lower levels of patient satisfaction, and higher rates of sickness and absence than in other sectors of the economy. Overall staffing costs were determined by the total numbers of nurses employed, rather than the number of Whole Time Equivalent registered nurses (the unit used by the report as a measure of skill mix).
The authors conclude that spending more per staff member — that is, having a richer skill mix — is likely to improve the safety and quality of care, as well as raise patients’ satisfaction levels. But they also highlight the fact that some trusts seem to be able to produce good results with a relatively lean skill mix, which suggests that much remains to be understood about staffing patterns in the UK.

**Saving Costs by Substitution?**

The substitution of nurses for doctors has been proposed as a cost saving strategy and fits with the current emphasis on employment flexibility, career progression and professional development. A review of the literature on the cost-effectiveness of advanced practice nurses identified a number of studies that included an economic analysis. The results of the studies were mixed. Two showed that nurse-led services were cost-neutral, two showed that the use of nurses reduced costs, but one case showed that the costs of a nurse-led unit were higher than traditional services. Two recent randomized controlled trials have included an economic analysis. Lattimer et al. showed that an out-of-hours nurse consultation service in primary care reduced emergency admissions and travel to the patients’ homes. Potential savings after covering the costs of the service were estimated at around £30,000 per annum. A study of the substitution of nurses for consultant physicians in the management of Parkinson’s disease found few overall differences, but two out of the twenty-two health dimensions, physical functioning and general health, were better under consultants. The authors concluded that the role of the specialist nurse could not be recommended on the grounds of economic analyses alone and that the development of complimentary roles rather than substitution might be more appropriate.

The substitution of doctors by nurses in primary care has been suggested as one way of coping with projected increases in demand. A recent systematic review of work in this area included studies if nurses were compared to physicians providing similar health services, and 25 articles based on 16 studies met their inclusion criteria. They found no appreciable differences in health outcomes, processes of care, resource utilization or costs. In some cases, patient satisfaction was higher when care was provided by nurses, who tended to spend longer with patients, give them more information and recall them more frequently. The methodological quality of the studies was variable. Only one study was powered to assess equivalence of care and patient follow-up was usually less than one year. The authors conclude that while nurses may be able to provide care of equal quality thus reducing doctors’ workload, the impact on costs depends on a number of factors including whether nurses are used to meet previously unmet patient needs, or generate new demands for care. Potential savings depend on the salary differential between nurses and doctors. The fact that nurses spend more time with patients and recall them more often may reduce savings.

These beginning attempts to draw out the economic implications of nurse staffing show how high quality primary research can be used to provide guidance to clinicians, managers and policy makers in a common language — the language of finance — that can be understood across professional boundaries. We now turn our attention to outcomes for nurses due to the environments in which they work. We have shown the importance of nursing numbers, skill mix, experience and education for patient outcomes and now explore the evidence of the impact of these and other work life variables on
Nurses’ Experience of Work Life

There is no doubt that at its best, nursing is an extremely rewarding career. People enter the profession with high ideals, wanting to give good quality holistic care to patients, but nurses are often thwarted in practice by organizational constraints such as poor staffing and skill mix which fundamentally undermine their ability to deliver the quality care they have been educated to give.\(^45,46\) In the following section we highlight some recent findings about the negative aspects of working as a nurse, before identifying some of the components of good working environments.

Low Morale, Job Stress and Burnout

Much evidence suggests that poor levels of staffing lead to work stress, burnout and staff sickness. Indeed, The Joint Learning Initiative suggests, “workers report lower burnout, better morale, and greater job satisfaction when the number and quality of staff are adequate.”\(^71\) Inadequate staffing and poor quality staff are the key to work stress and burnout.

Increases in the acuity of the patient population, combined with increases in the complexity and intensity of care they require, have increased nurses’ workload and job stress. At the same time, many countries experienced a downsizing of the nursing workforce in recent years as a way of cutting costs. This has led to a vicious spiral of decreased job satisfaction and morale, leading to increased absenteeism and turnover that has the inevitable consequence of reducing the quality of patient care. This is an international problem, with evidence from the US, Canada, Europe and the developing world.\(^1,47-52\)

Job strain is also predictive of absenteeism. Karasek and Theorell and AbuAlRub suggested that a variety of work stressors lead to distress, which jeopardizes the physical and mental well-being of nurses as well as the quality of care provided for patients.\(^53,54\) Stress in female health care personnel in Sweden has been linked to lower back pain and also with low satisfaction, poor quality of performance, higher turnover and increased absenteeism.\(^55,56\)

It is an issue that, far from diminishing, appears to be on the increase, with 36% of staff reporting work related stress in the past 12 months in a recent staff survey in the public sector in the UK.\(^34\)

A study in five countries (US, Canada, England, Scotland and Germany) by a team of researchers led by Linda Aiken from the United States found that nurses in distinctly different health care systems reported similar shortcomings in their work environments.\(^52\) Many nurses in the five countries report job dissatisfaction, burnout and intention to leave. The Maslach Burnout inventory, a standardized tool used to measure emotional exhaustion and the extent to which nurse respondents feel overwhelmed by their work, was utilized in this study.\(^57\) Significant numbers of nurses—ranging from just under 30% to over 40% in all countries except Germany – had high scores relative to the norms for medical workers published by the developers of the tool.\(^58\)

Evidence from the UK suggests that, despite a number of initiatives to improve nurses’ working lives, dissatisfaction remains. Six in ten respondents to the survey by the Royal College of Nurses say their job is very stressful.\(^7\) 28% of respondents had taken sick leave in the previous three months compared with 26% in 2000. There was also an increase in bulling and harassment with 23% (17% in 2000) saying they had been bullied or harassed by a
member of staff in the previous twelve months and 40% of respondents (up from 34% in 2000) reporting harassment or assault by patients or their relatives. Eight in ten nurses working in Accident and Emergency (A & E) departments had been harassed or assaulted in the last twelve months.

Nurses also scored more poorly than average in the Health and Safety Executive (HSE) six stress management standards (demands, control, support, relationships, role and change), showing they are exposed to high levels of stressors in their jobs, particularly in terms of demands and change. Black and ethnic minority nurses, particularly those that first trained abroad, score more positively on some scales, such as demands, but more negatively on others, such as relationships. Nurses working in hospitals experience higher levels of stress than those working outside and low scores (high stress) are linked to lower levels of job satisfaction and a greater desire or intention to leave one’s current position. Nurses expressed dissatisfaction with their access to flexible working hours, catering facilities at night, free parking, breaks and rest times. Nurses in this study had lower psychological well-being than in the previous survey in 2000, and this is lower than the general population. Nurses with poorer well-being were more likely to be thinking of leaving their jobs.

Barriers to Care and Intention to Leave

It is important to connect the availability of nursing resources to qualitative aspects of patients’ experiences in hospital. Aiken et al. reported that many nurses in the United States, Canada and Germany leave their work feeling that some essential nursing tasks have not been done. Their survey revealed that while nurses were performing housekeeping duties, transporting patients, and coordinating ancillary services, they did not have enough time for oral and skin care, comforting and teaching patients, or developing and updating care plans.

In a recent survey of London nurses, respondents reported feeling that they did not have enough time, tools or training required to meet patients’ needs. The majority of nurses (64% of survey respondents) felt overworked. Many stated that they did not have enough time to perform essential nursing tasks, such as addressing patients’ anxieties and concerns, giving information to patients and their relatives, helping patients to the toilet, answering call buttons and minimizing the risk of falls. Lack of cleanliness, space to mobilize patients and essential resources such as linens were identified as barriers to care. Nurses were often unable to control the temperature and noise levels in the care environment. More positively, high proportions of the nurses responding to the survey expressed the desire for further training, particularly in social and interpersonal aspects of care.

According to the International Council of Nurses, nurses in resource poor countries struggle on a daily basis with access to drugs, safe water, medical equipment and essential supplies, such as gloves, bandages, and dressings needed to carry out their work. Shortages of these essential resources mean that nurses cannot provide good quality care and lead to frustration and demoralization. There is a strong correlation between nurses’ inability to provide patients with good care and their intentions to leave their current job and the nursing profession. Reeves et al. analyzed the data from the survey of London nurses described above. Factor analysis combined the answers to questions about nurses’ experiences of work life into four patient-centered and four
nurse-centered dimensions.

Patient-Centered Dimensions included:
- Information (giving patients and their families information about their medications and on discharge from hospital)
- Involvement and respect (doctors’ and nurses’ observed attitudes towards patients, involvement of patients in decisions, respect, dignity and privacy)
- Patient care (helping patients to eat their meals, administering pain medication and pressure area care)
- Resources (staffing levels, workload, time available to carry out basic nursing tasks, equipment and space to work with patients).

Nurse-Centered Dimensions included:
- Respect at work (feeling of being valued and respected by patients, doctors, society and the hospital; experience of harassment and assault)
- Working conditions (family friendly working, staff food and social facilities)
- Good management (perceptions of the competence of senior staff; extent to which nurses feel listened to)
- Nurse Training (12 questions in which nurses were asked to state the extent to which they felt they had had adequate training on a broad range of topics)

Both patient-centered and nurse-centered dimensions affected nurses’ career plans. Nurses who reported more problems in both nurse-centered and patient-centered dimensions were more likely to intend to leave their current employers. Satisfaction with pay and the cleanliness of work areas were also important factors, but the key message for employers is that retaining staff is not just about improving nurses’ working conditions but also about providing the kind of environment in which they can deliver the quality of care to which they aspire.

A longitudinal qualitative study of the experiences of newly qualified nurses (n=26) in UK public hospitals found that although nurses emerged from their education with a cogent set of high ideals, these were thwarted in practice by two constraining and interrelated factors. Organizational constraints included time pressures, role constraints, staff shortages and work overload. Professional constraints included obeying covert rules, lack of support and poor nursing role models.

Three groups of nurses emerged after 15 months in practice: sustained idealists, compromised idealists and crushed idealists, in which the practice environment was the key variable. Sustained idealists worked in conducive environments, which included minimal time pressures and good staffing and skill mix. Also, support for them as new nurses was both excellent and forthcoming. Compromised idealists felt frustrated that they could only partly implement their ideals in practice and were most likely to be working in an environment where their ideals were thwarted regularly through staffing shortages, lack of support and few good role models. Crushed idealists coped with poor staffing and skill mix, little or no support, very sick patients, and poor leadership. Care was often hurried and physical care predominated due to these extreme pressures. Resources were often limited and nurses did not feel valued, nor were their ideas or suggestions welcomed. The majority experienced frustration and “burnout” as consequences of their ideals, values and standards being thwarted in practice. This led to disappointment, disillusionment, and in some cases intent to leave the profession.
The emerging picture of nurses’ work life is one of overwork and frustration at not being able to provide satisfactory care. Many intend to leave their job or even the profession. However, there are some glimmers of hope. Nurses lay great stress on quality of care, they want training and they are willing to go the extra mile. More than half of the respondents to the national staff survey (55%) conducted in the UK in 2005 reported working extra unpaid hours, with the majority working between 1 and 5 additional hours per week. The most common reasons for doing so were to provide the best care they could for patients and to avoid letting colleagues down. Extra work was necessary to meet deadlines and they suggested it would be impossible to do their job without working overtime. Even though the situation seems dire at times, there is a reservoir of good intentions, a desire to learn and a desire to improve the quality of care within the nursing community that suggest that hope for the future of health care is not entirely misplaced.

Good Working Environments for Nurses

In 2000 the Advisory Committee on Health Human Resources suggested that the quality of work life for nurses is determined by a number of interrelated issues. These include: “appropriate workload, professional leadership and clinical support, adequate continuing education, career mobility and career ladders, flexible scheduling and deployment, professional respect, protection against injuries and diseases related to the workplace, and good wages” (10).

McGillis Hall et al. highlighted these and other important issues for nurses in their work life: 

- Adequate staffing and good skill mix, to enable provision of good quality care 
- Good teamwork, with collaboration and respect within the nursing team and in the wider multi-professional team 
- Adequate control over their working environment and work life balance 
- Good organizational climate and culture (e.g. good leadership, communication, ethics) 
- Professional nurse autonomy 
- Professional development opportunities 

A review of the international literature identified the importance of job control and social support to mitigate against job strain. Studies emphasize the significance of empowerment as an intrinsic motivating factor and confirm the value of good leadership, teamwork and professional autonomy. Employee engagement has emerged as an important concept that links together two well-researched precursors in the literature in organizational psychology: employee commitment and organizational citizenship behavior. Employee commitment is a multi-dimensional construct that has at least five factors. These include: affiliate commitment, where an organization’s interests and values are compatible with those of employees; associative commitment, whereby organizational membership increases employees’ self esteem and status; moral commitment, where employees perceive the organization is on their side; affective commitment, whereby employees derive satisfaction from their work and colleagues and the work environment is supportive of that satisfaction; and structural commitment, in which employees feel they are involved in a fair economic exchange and benefit from the relationship in material ways.

Evidence from the business environment suggests that employee commitment increases
job satisfaction and performance and decreases absenteeism.\textsuperscript{65} Organizational citizenship behavior has a research base of over 20 years and is defined as discretionary behavior that promotes the effective running of an organization.\textsuperscript{66} Some evidence suggests that organizational citizenship behavior may be particularly important in health care institutions where a high level of inter-agency and inter-professional collaboration is required.\textsuperscript{67} The strongest driver appears to be a sense of feeling valued, which can be influenced by providing training and development, performance appraisal, equal opportunities, family friendliness, pay and benefits communication and, as identified elsewhere, the importance of immediate management.\textsuperscript{68} We now focus attention on some of the key aspects of the working environment that support nurses in providing the highest quality care.

**Good Staffing Levels**

Good employers ensure that nurses have the resources to do their job. This means at the most basic level access to medical and nursing equipment, which is often in short supply in developing countries. But it also means, in a labor intensive industry, that good employers must ensure that there are adequate numbers of suitably qualified and motivated staff to provide care. Since we have already reviewed the evidence linking nursing resources and patient outcomes, we do not labor the point here. However, it is important to remember that adequate staff resources are the basis on which all other human resource management interventions must be based. Teamwork, management, supervision, leadership and organizational climate and culture are not substitutes for enough staff. Nor can they be developed in conditions of staff shortages.

**Team Working**

Effective team working enhances staff motivation, job satisfaction and mental health and improves retention.\textsuperscript{69} Research also suggests that where health care professionals work together in teams, an improved service to patients can be delivered.\textsuperscript{70-72} Team working would seem to be central to the delivery of high quality health care and to ensuring the future of the health care workforce. Although few would argue against team work, there may be some debate about how teams are defined in current practice.

The 2005 NHS Staff Survey, which was sent to a representative sample of health care workers across the UK public health care sector, asked respondents whether or not they work in a team.\textsuperscript{34} 89\% of staff at all levels and positions confirmed that they did. However, they may be using the term rather loosely. Further questions that probed different dimensions of the team concept showed that less than half worked in groups that met the minimum criteria for well structured teams, such as having regular meetings, clear objectives and working closely together.

Studies in health care consistently support the value of team based working; however, much of the performance measurement in health care remains driven by the measurement of individual performance. A plethora of appraisal systems and tools are available to managers including the more recent approach to individual assessment of performance – “360 degree feedback.”\textsuperscript{73} If teams and team work are to deliver to the health care system the benefits that they might be capable of, then this must be reflected in appraisal systems that link the success of individual members to the achievements of the team and consolidate their collective identity.
Training, Learning and Development

Training, learning and development have been shown to be linked to good organizational and individual performance and are strongly correlated with job satisfaction and commitment. Most workers, and nurses are no exception, want to progress and keep up to date in their working milieu. Training, learning and development commence immediately in a new environment and studies have demonstrated a link between early job experiences and commitment. The induction program is therefore very important. Organizations communicate their commitment to employees by treating them fairly and attending to their development needs (growth). Some organizations do this well and show high levels of commitment to training, learning and development. For example, in a recent survey of staff working in the public sector in the UK, 95% of staff had received some sort of training in the past 12 months.64

Management, Supervision and Leadership

The quality of the relationship between managers and employees is strongly related to employee commitment and is thought to be one of the most important factors affecting motivation and job satisfaction. Employee commitment is influenced by day-to-day contact with line managers and by the way that target objectives are set.68 Managers communicate the organization’s core values and vision, and when there is good management support for employees, staff retention is high and absenteeism is low.34,47 Leadership is an important component of nurses’ work environment, influencing nurses’ job satisfaction and work empowerment.49 A small interview study in the US identified managerial behaviors that had a positive influence on job satisfaction, productivity and commitment, including recognition and thanks, meeting nurses’ personal needs, mentoring, and leadership skills such as a shared vision, role modeling, nurse empowerment and open communication.75 Kramer and Schmalenberg found that having a chief nurse with a strong position in the executive team was important with regard to recruiting and retaining nurses.76,77

Organizational Culture and Climate

Organizational culture and climate have been deemed difficult to define.78 Both include a wide range of perceptions that individuals hold about their work environment and how the context shapes behavior.69 There is no widely accepted definition of an organizational culture but there is some consensus that it is holistic, historically defined and socially constructed.79 Hofstede suggests that while it is evident from the verbal and non-verbal behaviors of individuals within the organization, it is aggregated at the organizational level: “culture is a characteristic of the organization, not of individuals” (479).80 Definitions of climate, by contrast, focus on the general dimensions of the environment, such as the quality of communication within the organization, staff involvement in decision-making and patient care and leadership.49 It is a more superficial concept than culture and is how it “feels” to work in an organization, the atmosphere of the workplace. Moran and Volkwein have suggested that while climate evolves out of the same elements as culture, it is shallower, forms more quickly and alters more rapidly.81 Positive organizational climate and culture are strongly related to the performance...

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of individual health care organizations and innovation and are also associated with high levels of staff well-being and work satisfaction.\textsuperscript{34,32} Ingersoll et al. found that commitment to the organization was positively associated with a constructive culture and with organizational readiness and was negatively associated with a passive-defensive culture.\textsuperscript{33}

Having reviewed some of the evidence on what constitutes a good working environment for nurses and the factors that are important in this, we focus attention on some of the particular problems that affect the health care workforce in developing countries.

Challenges to “Good Employers” in Developing Countries

Most of the research that has been conducted on human resource management in health care has been in industrialized countries. The problems that we have described are intensified in developing countries and countries in transition. Some of the challenges facing developing countries are familiar—low pay, lack of staff motivation, poor performance and lack of accountability. Salaries are often very low and sometimes are not paid at all for some time (e.g., Uganda). New challenges include the global shortage of health workers, the migration of qualified staff to industrialized countries that may seem to provide a better standard of living for health care workers, and the spread of HIV/AIDS.\textsuperscript{84} An ICN report on “What Makes a Good Employer” made a number of points about the particular problems in developing countries, summarized below:

\textit{Motivation.} Further research is required on the factors that motivate workers in different environmental conditions, particularly on the relative importance of financial and non-financial incentives in different environmental conditions.

\textit{Workforce Support for Reform is Essential.} In a crowded reform agenda, docile workers and worker organizations tend to be ignored. However, there may be some threshold beyond which they will stop co-operating, bringing the reforms and the health care system to a halt. The power of workers, the human resource in health, needs to be harnessed for health equity, development and improvements in the working lives of personnel in the health sector globally.

\textit{Raising Awareness of Human Resource Management (HRM).} Policy makers and managers in health and related sectors need to have a broader understanding of HRM, its scope and its importance to the success of health reforms. Every country, rich or poor, should have a national workforce plan shaped to its situation.

\textit{Commitment to HRM in Health as Part of Support from International Partners is Necessary.} International partners must become more open to addressing HRM issues if they are to reduce poverty and the disease burden.

Strengthening the workforce is a shared challenge. Rapid mobilization of the workforce and wise investments can build a stronger human infrastructure for sustainable health systems. At stake is nothing less than the course of global health and development in the 21st century and the cost of inaction is unmistakable – failure to achieve the Millennium Development Goals, epidemics spiraling out of control, and a demoralized workforce unable to help.

\textbf{Initiatives to Improve Nurses’ Working Lives}

A number of initiatives have been developed worldwide to try to improve the work environ-
ment for nurses and ultimately to improve care for patients. These have included the North American initiated magnet hospitals program, HRM initiatives in the UK where the public health system is aiming to become a model employer, as well as a number of international initiatives that acknowledge the global reach and importance of the health care workforce.

**Magnet Hospitals**

In the early 1980s the American Nurses Association identified a group of hospitals that were known by reputation as “good places to work.” These organizations served as “magnets” for professional nurses and had little difficulty in recruiting and retaining staff. The American Academy of Nursing funded a study to identify a national sample of magnet hospitals that shared the following traits:

- the chief nurse had a strong position in the management structure of the hospital
- nurses had autonomy to make clinical decisions in their own areas of competence and had control over their own practice
- decision making was decentralized at the level of the unit
- staffing was adequate and limits were placed on the number of new nursing graduates
- methods to facilitate communication between nurses and physicians were established
- the organization of nurses’ work promoted accountability and continuity of care (e.g. primary nursing care)
- the institution demonstrated the value it attached to nurses (e.g. by investing in their education)

Many more research studies were to follow, and more recently work by McClure et al. in 2001 asked staff nurses to identify the essentials of magnetism. These included:

- Working with other nurses who are clinically competent
- Good nurse-physician relationships and communication
- Nurse autonomy and accountability
- Supportive nurse managers – supervisors
- Control over nursing practice and practice environment
- Support for education (in-service, continuing education, etc.)
- Adequate nurse staffing
- Paramount concern for the patient

Aiken and colleagues at the University of Pennsylvania have since shown that the cardinal features of the magnet hospitals are related to: lower patient mortality rates; increased patient satisfaction; improved nurse satisfaction, retention and safety; lower burnout rates; and fewer needle stick injuries among nursing staff. These organizations are seen as by nurses as desirable places to work because they know that they will be provided with the resources and structures that will enable them to give good quality care to patients.

The drive to attain excellence in nurses’ work environments has spread both within and beyond the United States. In the 1990s the American Nurse Credentializing Center (ANCC), an organizational component of the American Nurses Association, established a formal program to recognize excellence in nursing services. This program is a voluntary form of external professional nurse peer review available to all hospitals and nursing homes based on established standards of care and nursing services administration.

Magnet hospitals tend to have higher nurse-to-patient ratios. This is not an explicit criteria...
for selection, but it appears to be part of an overall institutional commitment to high-quality patient care and a recognition that professional nursing is key to achieving that care. Magnet hospitals do not appear to cost more despite the heavy investment in higher numbers of qualified nurses per patient. They may indeed be more cost-effective because there are fewer adverse events in magnet hospitals and the average length of patients’ stay both in intensive care and in the hospital are shorter in magnet hospitals.

Human Resource Management in the UK NHS: a Model Employer?

The UK NHS employs over 1.3 million people and is the third largest employer in the world. It is an important national institution, highly valued by the population, which recognizes that it has been one of the most cost-effective health care systems in the world. However, large organizations that exist in a non-competitive environment can be difficult to change and modernize. The NHS Plan recognized a number of systematic and longstanding problems and set an ambitious 10-year agenda whereby reform would be bought by increased investment. Investment and Reform for NHS Staff—Taking Forward the NHS Plan describes the raft of measures, including recruitment campaigns (national and international), return to nursing campaigns, flexible retirement arrangements, pay increases, housing allowances and child-care provisions designed to remove barriers to working in the NHS. The Improving Working Lives campaign recognizes the rights of employees to work in an organization that:

- Invests in diversity
- Tackles discrimination and harassment
- Offers flexible working arrangements for staff
- Enables staff members to change how they work and how services are delivered

NHS organizations are required to measure progress in staff involvement and empowerment through their annual staff surveys. Results of the staff survey form an important part of trusts performance management. A Health Service of All the Talents: Developing the NHS Workforce made a number of proposals to help the service achieve greater integration between service and financial planning and enable more flexibility in the deployment of staff. HR in the NHS Plan: More Staff Working Differently describes the four main goals:

- making the NHS a model employer
- ensuring the NHS provides a model career based on the Skills Escalator
- improving staff morale
- developing people management skills

Meeting these targets will require fundamental changes in the work environment. HR in the NHS Plan states, “…we need to make the NHS an attractive place to work and enhance its reputation as an employer.”

The Skills Escalator underpins the approach to careers in the NHS. Staff will be encouraged to continually extend their knowledge and skills and enhance their careers—moving up the escalator. At the same time, roles and workloads can be passed down the escalator when appropriate. The Skills Escalator focuses on skills and competencies rather than on professional groups and is designed to facilitate expansion of new roles, widen entry into health care careers, and improve career development. It is linked to the Knowledge and Skills Framework and the new Job Evaluation Framework. Agenda for Change is the new NHS pay scheme.
which will enable employers to match jobs to pay bands using a new job evaluation form to ensure flexibility and fairness.

The NHS now has an integrated approach to the management of human resources. There is new organizational infrastructure and a set of tools to drive change forward. The aspirations are high. However, we know from surveys of staff working in the NHS that we are still a long way from achieving these aspirations.7,34

Global Initiatives

Health and human resources are receiving unprecedented attention on the global policy agenda. The G8 Summit in Gleneagles identified health workers as having a major role to play in solving some of the problems and promoting the development of African countries. The World Health Organization’s eagerly anticipated report Working Together for Health was launched on April 7 this year (World Health Day). These global policy reports suggest a renewed resolve to tackle workforce problems in a coordinated, inter-governmental and cross-departmental way. Fears about the sustainability of health systems, their resilience and capacity to deliver basic health gains, economic development, as well as social security and stability, to citizens are major forces for action in this recent ferment of interest.

The Joint Learning Initiative’s report, Human Resources for Health, published in December 2004, was the first attempt at a global overview of health professionals. The report’s main focus was the global health workforce, which it declared to be in crisis. Three key drivers were identified as contributing to the crisis at the global level: the HIV pandemic, the emigration of health workers from poorer to richer countries, and the structural readjustment of health systems and financing. The report deplores the meager attention paid to health workers, despite their centrality to the functioning of any health system. They argue: “Human resources are the lynchpin, the keystone, the pivot and the glue of all efforts to overcome health crises and achieve the health [Millennium Development Goals] MDGs. Only when high-level initiatives, finance, and technologies are matched by an investment in people will the formula for better health for all be complete.”

Significantly, the report argues that it is not the overall quantum of available health workers worldwide which holds development back but their distribution. The problem is not the overall stock of workers, especially if one includes community workers and traditional healers, but the flow of workers. They single out the working environment as crucial to any successful strategy geared towards recruiting, retaining and motivating workers. They also draw attention to the important relationship between the density of health workers and outcomes for citizens and patients.

Clearly, as the largest group of health workers, nurses are critical to the success and sustainability of any health system. Two further initiatives and publications are noteworthy in this regard. In 2005 the ICN commissioned a series of background papers for a meeting which brought together for the first time many of the key international actors and organizations with an interest in the nursing workforce at the global level.63

The other is a publication written by an ICN consultant on the migration of nurses and the global health care economy, which provides an incisive and critical analysis of the concept of shortage and the macro- and micro-economic forces propelling patterns of nurse migration.5 The world trade in nursing is big business, not only for recruitment companies, which derive large profits from the fees they
earn for recruitment, but also for the proliferating private schools for nurses in such countries as the Philippines, which slip below the regulatory radar and supply nurses as a major part of their export trade. The problems are complex and solutions similarly so but creating self-sustaining systems has to be a clear priority if progress is to be made.

What More Can be Done?

In this paper we have summarized and synthesized the evidence on the impact of nursing and the conditions under which nurses can deliver high quality patient care. The case for investing in nursing is, we believe, compelling. We argue that the benefits of doing so are both direct and indirect. Clearly, nurses contribute directly to the quality and outcomes of patient care in their capacity as professionals. Drawing on arguments from the development literature, we see that nurses also contribute to the welfare of citizens and communities in their capacity as mothers, sisters, daughters, friends. Similar arguments can be made for men. Bearing in mind that nursing, in some countries, is one of the few occupations where women may have ready access to further education and given the importance of women’s literacy and education levels for the health of children, investing in nursing has multiple benefits.

Moreover, the costs of not investing may be even greater, stimulating the familiar spiral of decline into demoralization and high levels of burnout for those who remain. What is needed now is the political will to implement change and secure global agreement on a strategy for change. The forthcoming Decade for Human Resources in Health and the launch of WHO’s Working Together for Health report provide the perfect pretext for establishing a global alliance to take political commitments forward. UN agencies need to work with national governments, donor agencies, and public, private and voluntary bodies to take initiatives and strategic plans forward. We can also take heart from the assessment of the Joint Learning Initiative, which was that the problem of the health care workforce is not ultimately one of supply, but distribution. The moral imperative is clear; the golden opportunity is here. We waste it at our peril.

Acknowledgements

Work on this paper has in part been supported by funding from the Royal College of Nursing of the United Kingdom, the International Council of Nurses, Macmillan Cancer Relief and the Health Foundation. We would like to thank David Barron for comments on an earlier version of this paper.

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