



**SCALING UP HEALTH AND EDUCATION WORKERS:
INCREASING THE PERFORMANCE AND PRODUCTIVITY OF AN
EXISTING STOCK OF HEALTH WORKERS**

LITERATURE REVIEW

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ACRONYMS

CDH	Community Directed Health Worker
IMCI	Integrated Management of Childhood Illnesses
JLI	Joint Learning Initiative
MCH	Maternal and Child Health
MDG	Millennium Development Goal
OECD	Organisation for Economic Co-operation and Development
USAID	US Agency for International Development
WHO	World Health Organisation

EXECUTIVE SUMMARY

This review paper has been prepared for DFID as a component in the overall literature review on Scaling Up Health and Education Workers. It looks at strategies that have been undertaken to increase the productivity of health workers. The TOR required that "...It examines the evidence to support or reject the hypothesis that short term training, incentives, better equipment, supplies and conditions and other things can be employed that improve outputs and health outcomes without increasing the numbers of health workers". The review provides an overview of key aspects and options for improving productivity, with country illustrative examples.

The review discusses definitions of productivity, indicators of productivity and performance, and then identifies five main sub themes where there may be options in achieving increased productivity and performance of the existing stock of health workers:

1. **Being There:** Addressing staff absence and leave entitlements
2. **In the Right Place:** Issues of geographical location
3. **At the Right Time:** Matching staffing with workload
4. **Doing the Right Thing:** Being more responsive to community/ client needs; Making best use of available skills and competencies
5. **Doing Things Differently / Doing Different Things:** Improved training, management, enhanced roles etc

The review examines a range of interventions that can have a positive effect on health worker productivity and performance within these sub themes, but highlights that the evidence base to support policy and practice is limited and fragmented. It also notes that there is good evidence from other sectors that co-ordinated human resource management interventions to improve productivity and performance have a positive impact. There are two main lessons from these studies. Firstly there is a need to consider "contingency" –to ensure that there is a "fit" between the interventions and the characteristics, context and priorities of the organisation in which the interventions are to be applied. Secondly, so-called "bundles" of linked and coordinated interventions are more likely to achieve sustained improvements in organisational performance than single or uncoordinated interventions.

The review identifies three areas of action to support informed decision making in this area. Firstly, the available tools for performance improvement can be more widely promoted through HR networks; secondly, any donor supported initiatives in the area of health worker productivity improvement should include a requirement for rapid evaluation and networking of results via electronic media; thirdly, co-ordinated action could be supported, which assesses the cost and impact of interventions on selected key issues that have a widespread resonance (e.g. attendance management; geographic maldistribution; introducing new roles). The lessons from these assessments about "what works" could be networked.

The review concludes by noting that the rapid and substantial injection of resources required to "scale up" the health workforce will be critical to the achievement of health Millennium Development Goals (MDGs). It stresses that the danger is that "more" becomes "more of the same" and that the limitations and weaknesses of current HR practices in relation to health worker productivity are re-inforced rather than reformed during this time of expansion and change.

1. INTRODUCTION

This review paper has been prepared for DFID as a component in the overall literature review on Scaling Up Health and Education Workers. This review is stimulated by the work of the Joint Learning Initiative (JLI) and the High Level Forum on Health (Global Equity Initiative/ Harvard University 2004). The JLI report has attempted to detail the scale of the HR challenge facing health systems in the developing world, has delineated the key causal factors, and has defined the main potential solutions. It makes clear that there is a pressing urgency to scale up the health workforce through rapid staffing growth, skill enhancement and productivity improvement. Assessing the availability and capacity of health human resources has been identified as one of the key principles required in scaling up (USAID 2003; Johns and Torres, 2005).

This paper is a rapid response review, based on published and “grey literature” sources. It draws from an English language literature search, supplemented by a hand search of documents held at the DFID Health Systems Resource Centre. It focuses primarily on developing countries. The review was commissioned on 25 February 2005 and completed on 12 March 2005. It provides an overview of key aspects and options for improving productivity and performance, with country illustrative examples; it is not a systematic review. Terms of reference for the overall review, including this paper are attached at Annex 1.

2. WHAT IS “PRODUCTIVITY”?

The JLI main report defined productivity as “Outputs extracted from given inputs, such as patients seen per worker or number of procedures per provider” (Global Equity Initiative/ Harvard University 2004, p 146).

This might be regarded as a “classic” economic measure of productivity, and relies on the availability of data-sets on staffing inputs (numbers, hours etc) and care outputs (patients treated, clients visited, episodes completed). It does not explicitly cover the quality or outcome of the care provided, and is reliant on data being available on inputs and outputs. A literature review solely based on this narrow and technical definition would identify few published examples from the developing world; most studies would be from the relatively data rich developed countries (see e.g OECD 2004). As such, this review extends beyond this definition of productivity to include broader issues of performance.

An unpublished review for WHO (Pantoja, 2003) noted the difficulties in applying the economic concept of productivity to the healthcare sector, where it can be difficult to attribute causality to specific interventions, when many factors may contribute (e.g. different health workers may each be involved in the delivery of care to an individual) and where the ‘output’ may also be difficult to define or measure. The WHO review is primarily based on literature from health systems in the developed world and notes “Literature with the sole purpose of performing a productivity measure does not dedicate much time in thinking about the kind of outcome convenient for health services. In general, they measure productivity as the ratio of output to input” (Pantoja, 2003:p.6).

Table 1 sets out some of the HR related input, output and outcome indicators most commonly use in the health sector to assess performance or productivity, when staffing have been the primary focus of attention. For a more detailed examination, see Needleman et al. (2001) and Hornby and Forte (2002).

Table I. Examples of HR/staffing-related indicators

“Activity”/Process-related	Beds Occupied beds Outpatient visits Client contacts
Staffing-related	Job satisfaction (measured by attitudinal survey instrument) Accidents/injuries Absence Assaults on staff Vacancy rates Overtime Turnover / stability /retention Use of temporary staff
Care-related (Output/Outcome)	Patient length of stay Readmission rates Live births Mortality rates Urinary tract infections Pneumonia

	Shock Upper gastrointestinal bleeding Deep vein thrombosis Pressure sores/ulcers Cross-infections Patient satisfaction survey
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Source: Buchan (2004)

These indicators are likely to be routinely reported only in health systems with a relatively sophisticated information infrastructure. It should also be noted that there is some evidence that not all the outcome-specific indicators in the Table are universally applicable or equally relevant to all care environments.

At its simplest level, within the scope of the DFID review, “productivity” would be about achieving increased output from the current “input” of health workforce, with no commensurate reduction in quality of care provided. The review however bridges across into other related issues:- performance of individual health workers and teams, and their motivation to perform, and to perform effectively. This review, of necessity, takes this looser, broader and inclusive perspective in order to highlight a range of published and grey literature which reports on one or more aspect of health worker performance or productivity. [Most published research on the impact of incentives on the performance and behaviour of health care has focused on physicians in developed countries, particularly the USA (Pantoja 2003). More detailed recent research on the theoretical underpinning of motivation theory, and the linkages between quality, performance, incentives and health worker motivation in developing countries can be reviewed in e.g. Mutizwa-Mangiza, D. (1998); Kanfer R (1999); Woodward, 2000; Franco L, Bennett S, Kanfer R (2002); Hicks and Adams, (2003); Franco L, Bennett S, Kanfer R, Stubblebine P. (2004), Zurn P, Dolea C and Stilwell B, (2005).]

This current review looks beyond some fundamentals which will also have to be addressed in any health system that aspires to achieve sustained productivity improvement, such as:

- that the pay of health workers is sufficient – and timely (Zachariah et al, 2001) - to provide them with a living wage, so they do not have to resort to informal and unregulated dual practice, pilferage or under- the- counter payments (see e.g. Backstrom et al 1998; Ferrinho et al, 2004), and that their working conditions and environment are adequate
- that any regulatory, institutional and legislative blockages, constraints and delays on achieving individual and system level productivity improvement are identified and can be addressed (eg Youlong et al, 1997; Health Systems Trust/Equinet, 2004)
- that HRH planning and management capacity is required to underpin any sustained improvements in productivity and performance; many of the specific interventions discussed in this paper (e.g achieving geographical re allocation of staff; managing absence, developing new roles, etc) require effective and systematic management, and may have broader political, social and cultural challenges than those just facing the health system as an employer

- that a performance management culture and approach becomes a core element in the health system of the country, and that it is based on relevant data on individual, unit and system performance and is supported by adequately trained management (MSH 1999; Martinez 2003; USAID 2003; Fort and Voltero, 2004)
- that stakeholder involvement is more likely to lead to sustainable change than is “top down” or imposed initiatives. Workers, their associations and the community they serve have to be part of the process of identifying which interventions to improve productivity have the greatest likelihood of success
- any initiative must be underpinned by a communication strategy that sets out the need for productivity improvement, how it can be attained, and the positive difference it will make to the quality of care and the responsiveness of the health system to the community.

It is important also to note that productivity does not mean additional workload burden on already hard pressed individual health workers. This review highlights a range of potential interventions, many of which would reduce workload intensity for individuals, whilst also improving patient/client care.

The next five sections of the review address different aspects and options in achieving increased productivity of the existing stock of health workers:

- I. **Being there:** Addressing staff absence and leave entitlements
- II. **In the Right Place:** Issues of geographical location
- III. **At the Right Time:** Matching staffing with workload
- IV. **Doing the Right Thing:** Being more responsive to community/ client needs; Making best use of available skills and competencies
- V. **Doing Things Differently / Doing Different Things:** Improved training, management, enhanced roles etc

3. BEING THERE

- Attendance management
- Audit of off- site training provision
- Audit of study leave/ secondment / fellowship provision
- On time payment of salaries

A health worker is not productive if they are absent from their place of work. Many health systems are compromised by high levels of unplanned staff absence. One recent study of absenteeism in Bangladeshi health facilities (Chaudhury and Hammer, 2003) estimated an overall absentee rate of 35%, with a higher rate for doctors. Many staff were absent regularly for days or parts of days. Similar difficulties have been reported in many other countries, such as Lesotho (Schwabe et al, 2004), Zambia (Ministry of Health, Zambia, 2004), Ghana and Mozambique (Martinez and Martineau, 2001). The Zambian report highlighted that it was feasible for workers to be away from the place of work for over 100 days in off site training/secondment etc.

High levels of absence may be linked to 'dual practice' with workers supplementing their income by private practice; to an organisational culture where long term repeat participation in off site and irrelevant training is acceptable; to an organisational culture where compliance with rural posting is not managed (see below); to a situation in countries with a high incidence of HIV/AIDS, where much time is being spent at funerals, or caring for sick relatives or off work because of work related stress (Ministry of Health, Zambia, 2004); or to delayed payment of salaries to health workers (Zachariah, 2001).

Addressing the issue of high levels of staff absence is most effective where local management have the authority and responsibility to deal with the issue, where the "rules" about absence are transparent and where information is systemically gathered on individual and unit level absence rates. A positive approach to attendance management, rather than a negative or punitive absence policy is more likely to be effective.

Chaudhury and Hammer also note that local community based staff are less likely to be absent than those who have to travel to work.

The recent synopsis report on health worker staffing in Zambia (Ministry of Health, Zambia, 2004) identified a range of possible interventions to reduce absence:

- freeze extended study leave
- limit attendance at workshops
- reduce length of training workshops
- freeze unpaid leave and secondments

An intervention in Chad aimed at reducing absence by using donor funding to guarantee on - time payment of health workers, in a situation where previously pay was delayed by 4- 7 months, was reported to be successful (Zachariah, 2001).

4. IN THE RIGHT PLACE

- Financial / non financial incentives to relocate
- Audit/ management of current postings; removal of “ghost workers”
- Develop outreach

The geographic “maldistribution” of health workers has been a recurring theme in many human resource audits in many countries (see e.g Hammer and Jack, 2001). Despite the best efforts of the planners with their models, spreadsheets and staff:population ratios, individual health workers continue to exhibit a natural tendency to gravitate to geographic areas of less hardship and where there are more career opportunities and private practice potential. Achieving a more balanced allocation of the available health workers in relation to identified need would provide scope for a productivity improvement. Similarly, ensuring that female health workers are in posts where gender may be a barrier to women using services. Various policy interventions have been tried, including compulsory rural postings, and financial and non-financial incentives.

This is a major issue but relatively few studies in the developing world have attempted to evaluate the impact of such interventions. A survey of doctors in Indonesia (Chomitz et al, 1997) analysed the locational choice made by graduates of medical schools before and after a major change in incentive system, intended to give doctors in rural postings an increased chance of securing permanent employment status and enhanced training opportunities in comparison to urban based doctors. The survey revealed a “powerful impact of the change in incentives” (Chomitz et al, p.11) with graduates from urban/central schools much more willing to now serve in remote areas. However this post incentive willingness to work in remote areas remained below that of medical graduates from schools in remote areas and the authors also questioned if further provision of specialist training was an efficient use of available resources. They recommended instead a further increase in direct financial incentives for remote area work, combined with an increase in the numbers of medical students being recruited from remote areas.

Another recent study (Reid, 2004) has monitored the effect of a new rural allowance payment for health professionals in South Africa. The author notes that the development of the new scheme required protracted negotiations involving the unions and Public Service Bargaining Chamber and that some aspects of the new scheme remain unresolved. The “before and after” study evaluated the effect of the new rural allowance on short-term career choices of health professionals. The rural allowance is a variable percentage enhancement on pay, dependent on occupation and designation of location; it varies between 8% and 22% of basic pay. Just over half of the staff surveyed post- implementation reported that the new allowance influenced them favourably towards working in rural areas, and 28% (mainly professional nurses) reported it would influence them to actually change their career plans in the following year.

Achieving a more effective geographic distribution of health workers is one potential policy intervention; the evidence base is limited as regards successful interventions, and there are many more descriptive reports focusing on why there is geographic maldistribution than there are studies evaluating how to achieve improved distribution. Studies also, by their nature, tend to focus on single focus “top down” interventions which may have a short term impact; the study from Indonesia highlights that a policy shift towards enhancing local training or training of locals from remote areas may have a longer term benefit.

Some countries fall short of having complete data on where staff are posted, and where they are actually currently based. A rapid audit can identify any major mismatch; management should take effective measures to ensure that workers comply with postings and are based where they should be, and that so called “ghost workers” are removed from the payroll.

Finally, just getting workers to the “right” work location may not be enough, if this location is inaccessible to patients/clients particularly in rural areas where patients/clients may have hours of days travel time to reach the nearest health facility. In these situations, provision of transport for staff, combined with the development of an “outreach” approach, where health workers are actively seeking out clients rather than passively waiting at health facilities, can lead to improved utilization of available services and skills (Acharya and Cleland, 2000).

5. AT THE RIGHT TIME

- Activity analysis/ workload audit
- Shift patterns
- Flexible hours

Any timing mismatch between levels of staff availability and workload fluctuation can be a factor in reduced productivity. It is not just an issue of reducing workers absenteeism and increasing 'presenteeism' it is about ensuring that these workers are present at work at times when their skills and contribution will be most productive. In many health care environments this challenge extends over 24 hours per day, every day.

The use of shift patterns and time based flexibility in when the available workers are at work can lead to increased productivity, if it achieves a better match between staffing levels and workload. This is unlikely to be achievable unless there is some capacity to monitor and predict fluctuations in workload and activity. This does not need to be a complicated or time consuming exercise in most care environments (see e.g Bratt et al, 1999). However, whilst some types of activity can vary predictably by time of day, day of week and seasonally, the levels of staffing will often be "fixed" because of contractual or regulatory requirements or just because of custom and practice. The study of the performance of health workers in rural health services in New Guinea (Thomason and Kolehmainen-Aitken, 1991) highlighted that the different types of health worker were not all present at work at the 'best' times to effectively deliver care.

The scope for improving productivity through different types of time based flexibility, such as changing shift patterns, introducing self scheduling, and flexible hours have been highlighted in other reports (e.g. USAID, 2003) but there are virtually no evaluations from developing countries.

6. DOING THE RIGHT THING

- Responsiveness
- Core competencies and skills

If health workers are present, in the right place, and at the right time, are they necessarily as “productive” as they can be – either as individuals or teams? Activity analysis studies often reveal that individual workers are less productive because they are not focusing on their core competences and activities. They may also not be responsive to priority needs of clients if they are focusing on other, less critical tasks.

Qualified health professionals may spend time on basic clerical administration that could be done more effectively by a clerk, or with computer support. Well-trained medical staff may be working as administrators, but with no training in management. Teams are also less productive if the mix of staff skills is less than optimum. This may be because of skills shortages in some occupations (Buchan and Dal Poz, 2002).

Activity analysis in rural health services in New Guinea (Thomason and Kolehmainen-Aitken, 1991) revealed that some clinically qualified cadres such health extension officers were spending a “disproportionate” amount of time on routine administration, also “of concern” was that community health workers were concentrating primarily on curative activities rather than preventative activities, which were not being provided at adequate levels. The authors highlight the need for a performance evaluation system for staff, an audit of training curricula and improved supervision of health workers in order to increase the responsiveness and effectiveness of these cadres. This is a commonly made recommendation (see e.g. USAID 2003), as is the need to have accurate job descriptions on which to base assessment of individual performance and training needs (see e.g. Martinez 2003). However, job descriptions, if they exist at all, are often out of date, too generic, and lack specificity. A focus on competencies rather than tasks in developing job descriptions will provide greater opportunity to look at scope for flexibility and team working. Job descriptions, if over- focused on tasks may re-inforce a rigid job hierarchy which can be inefficient.

7. DOING THINGS DIFFERENTLY/ DOING DIFFERENT THINGS

- improved short term training/ reflective practice
- improved management/supervisory techniques
- mechanisms for community feedback
- improved tools/ transport/supply/ equipment
- extended roles
- doing different things

Many reports and publications discuss the scope for improved performance or productivity of health workers through changes in practice and policy, but very few evaluate the impact of such interventions. At least six aspects can be identified which have some evidence base; improved short term training; improved management/supervisory techniques; community feedback; improved transport/ supply/ equipment; extended roles, and reallocation/retraining (doing different things)

7.1 Training

A study in Malawi (Kelly 2001) reported on a “spectacular rise in cure rate” when local analysis of TB control procedures led to improved training for NGO staff; upgrading of skills of the TB assistant; improved supervision, and localisation of drug supplies.

An on-the-job peer training programme for nurses, designed to improve the immunization performance of poorly performing health centres in terms of coverage and practice in Indonesia was evaluated by Robinson et al (2001). Experienced immunization nurses were sent to health centres where nurses were inexperienced or performing poorly; the experienced nurses spent 1-2 weeks providing on-the-job training for the less experienced ones. An evaluation of the 13 centres that participated in the programme, and the 95 that did not, found that the programme increased both immunization coverage and the quality of practice. Coverage of diphtheria/pertussis/tetanus (DPT), polio, and measles vaccinations rose by about 39% in all 13 participating centres when compared with non-participating centres, and by about 54% in the 11 centres that had a functioning transportation system during the year after training.

Additional training in the use of clinic tools was strongly associated with improved health worker performance in a study of nurses and midwives working in Maternal & Child Health (MCH) in Armenia (Fort and Voltero, 2004). Improvements in pre natal contact have been linked to training of traditional birth attendants in Guinea (Save the Children, undated); and short term leadership training has been linked to improved performance by nurses in Bangladesh (Dunlop, 2003).

Research in Mali (Kelley et al, 2003) reports on short term improvements in health worker performance (as measured by compliance with fever care standards, and compliance with structural quality standards) when the surveyed health workers were trained in the self assessment of the quality of the care they were providing.

The provision of relevant training may have a direct impact on productivity; it may also be a signal to staff that the organisation values them, which in turn may act as a motivator and a retention mechanism (e.g. health workers in Vietnam – Dieleman et al, 2003).

7.2 Management/Supervision/Performance Feedback

The quality of local supervision and management is often identified as a constraint on improving performance and productivity of individual health workers and teams (see e.g. Thomason and Kolehmainen-Aitken, 1991; Martinez 2003; USAID 2003). The Malawi study Malawi (Kelly 2001; above) reported that improved supervision was one element in improved TB control. Other studies evaluating the impact of the use of structured feedback on performance in Niger (Kelley et al, 2001) and Burkina Faso (Bhattacharyya et al, 1997) have reported on short term improvements in worker performance levels. In the former study it was calculated that structured performance feedback had a significant positive effect on health worker compliance with Integrated Management of Childhood Illnesses (IMCI) standards and was cheaper than formal IMCI training. Performance feedback was also associated with improved health worker performance in the study of MCH in Armenia (Fort and Voltero, 2004).

The introduction of systematic approach to performance management and quality improvement is relatively well documented and evaluated in sub Saharan Africa, particularly in relation to community health workers (see e.g. Lande et al 2002; JHPIEGO 2003; Winch et al 2003). These reports and others highlight performance improvement at local level when standard performance management techniques- performance measurement, feedback, training needs assessment etc- were implemented.

7.3 Community feedback.

Systematic feedback of performance is often highlighted as a key building block of a performance management system. Less evident is any attempt to assess the effect of broader, less easily defined “feedback” from the community being served by the health workers. One study of community health workers in Colombia suggested that “work performance was shown to be more strongly associated with feedback factors such as the perceived value community members place on health promoter activities and direct observations of health improvement, than with supervisors’ feedback” (Robinson and Larsen, 1990, p.1041).

The study on nurses and midwives in MCH in Armenia also reported that “recognition from the employer or the client/community are factors strongly supported with performance” (Fort and Voltero, 2004, p.1); “appreciation by managers, colleagues and the community” was identified as a factor for job motivation amongst health workers in Vietnam (Dieleman et al, 2003). A study in Uganda reported that community directed health workers (CDH) were likely to achieve higher ivermectin coverage than other categories of worker who were not selected by the communities they served (Katarwa and Richards, 2001).

7.4 Tools/ transport/ equipment/ supplies.

Inadequate equipment, tools, transport, supplies and care environment have been often identified as a constraint on performance and productivity. Absence of drugs and supplies was identified as one of the main reasons for staff resignations in the public sector health system in Zimbabwe (USAID 2003). Few studies have evaluated the effect of improvement in this area.

Irregular and unreliable supply of drugs was identified as one of the most important factors contributing to low performance of community health workers in a district in Zambia (Stekelenburg et al, 2002); 60% of health workers in MCH in Armenia reported they did not have the tools “to do the job well”. Within the scope and

timescale of this review, no recent studies could be identified that focused primarily on evaluating the impact of improved supplies, transport or infrastructure on staff performance. The Malawi study (Kelly 2001) identified improved provision of drugs as one factor in improved TB control.

Several recent national level HR strategies in sub Sahara Africa have recommended improved provision of transport as a method of increasing the coverage of rural workers, and also retaining them in employment (e.g. Ministry of Health, The Government of Ghana, 2002; Ministry of Health, Zambia, 2004) (see also Robinson et al 2001).

7.5 Role enhancement

Changing skill mix is often identified as a key requirement in improving the productivity of health systems (see e.g. Buchan and Dal Poz 2002; USAID 2003). These changes may be achieved through introducing new cadres of worker, altering the current balance of different cadres, or enhancing the skills of one or more current cadres. The latter two could be taken to meet the broad definition of improved “productivity” of current workers, but it should be noted that skill mix change is often a time consuming process – more so for broader change management issues than for the technical aspects.

Enhancing roles to improve productivity of individual workers (e.g. extending prescriptive authority to nurses in Zambia- USAID, 2003) may require legislative and regulatory change which can often take longer to achieve than the actual training required, which may take only a few weeks. There are few examples of recent published research on such intervention in developing countries although some studies and reports have highlighted this policy option (see e.g. Nair et al 2001; Trap et al 2002).

7.6 Doing different things

Reallocation of workers to different programmes or services may be the planned attempt to achieve productivity improvement, but can also happen as the unintended result of donor investment in specific vertical programmes drawing staff away from other priority services (see e.g. Mususka, 2004). Whilst productivity improvement by reallocation of staff or work may be a viable option, there is little evidence that such an approach has been evaluated; a proper evaluation would have to assess the opportunity costs involved.

8 SUMMARY

Whilst this review does highlight a range of interventions that can have a positive effect on health worker productivity, it has revealed that the evidence base to support policy and practice is limited and fragmented. The most persuasive evidence relates to the evaluation of the effect of single training interventions or performance improvement techniques for workers within a vertical programme. There are few studies evaluating the other interventions highlighted in this paper. This does not mean that these other interventions are necessarily more difficult to implement, or less likely to succeed. It reflects the difficulties of conducting evaluations of multiple interventions in the complex care environments that were discussed in the introduction to the review. The relative prominence of evaluation of worker productivity in vertical programmes is also probably a reflection of requirements set down by the funders of these programmes.

What can be done to build on the available lessons, and fill some of the critical gaps in understanding of health worker productivity? The first point to note is that there may be lessons to learn from other sectors. There is good evidence from other sectors, where outputs are more readily measured, that co-ordinated human resource management interventions to improve productivity and performance have a positive impact (e.g. Pfeffer 1994; Huselid 1995. See Buchan 2004 for a review). There are two main lessons from these studies. Firstly there is a need to consider “contingency” –to ensure that there is a “fit” between the interventions and the characteristics, context and priorities of the organisation in which the interventions are to be applied. Secondly, so-called “bundles” of linked and coordinated interventions are more likely to achieve sustained improvements in organisational performance than single or uncoordinated interventions (see Kelly 2001 for an example). In the often “politicized” health sector this is an important message.

Table 2 below summarises the different interventions discussed in this review, highlights the extent to which they are currently supported by the evidence (that could be identified within the time and resource constraints of this review) and speculates on some likely impact, cost and risk factors. It is only with sufficient information relating to a specific organisational context that an accurate assessment could be made about which interventions would be likely to provide the best opportunities for cost effective improvement in worker productivity. It is clear that it is not a case of “either/ or”; as noted above, a co-ordinated effort across a range of interventions may have the most significant impact. However, if management capacity is limited, it may be tactical to identify initially one or two low risk interventions which can be implemented initially without undermining the scope for more broad based future improvements.

Where a health system or organization already has a workforce plan or strategy, this should be used as the framework within which to determine the most effective intervention(s) to improve productivity; where a plan/ strategy does not exist a rapid and systematic HR audit should be conducted to identify scope for productivity improvement and to delineate the major constraints on achieving improvement.

The many gaps in the evidence are unlikely to be filled in the foreseeable future, but three actions can be supported which will improve informed decision making in this area. Firstly, the available tools for performance improvement (see e.g. MSH, 1998; Lande et al, 2002;Winch et al 2003) can be more widely promoted through HR networks; secondly, any donor supported initiatives in this area should include a requirement for rapid evaluation and networking of results via electronic media; thirdly, co ordinated action could be supported, assessing the cost and impact of

interventions on selected key issues that have a widespread resonance across many countries (e.g. attendance management; geographic maldistribution; introducing new roles). The lessons from these assessments about “what works” could be networked.

The rapid and substantial injection of resources required to “scale up” the health workforce will be critical to the achievement of health MDGs. The danger is that “more” become “more of the same” and that the limitations and weaknesses of current HR practices in relation to health worker productivity are re-inforced rather than reformed during this time of expansion and change. There are many opportunities for productivity improvement which can be achieved without additional workload burden on individual workers; it is in

Table 2: Health worker productivity in developing countries: Limits of the evidence base, and speculative assessment of impact, costs, risks and assumptions

		Evidence base? *=fragmented; **=limited; ***=substantial	Potential Impact	Likely Costs	Risks/Assumptions
Being there	Attendance management	*	Significant	Limited	Requires policy, and capacity to manage employee relations
	Audit of off- site training provision		Low?	Limited/ One-off	May be resisted by workforce if perceived to be reduction in "perks"
	Audit of study leave/ secondment / fellowship provision		Significant?	Limited/ One off	May be resisted by workforce if perceived to be reduction in "perks"
	On time payment of salaries	*	Significant?	Negligible	Assumes reduces absence/ dual practice
In the Right Place	Financial / non financial incentives to relocate	*	Significant?	Potentially significant	Requires information on location/ management capacity
	Audit/ management of current postings; removal of "ghost workers"	*	Limited/ one off?	Limited	Data required.
	Develop outreach	*	????		Requires transport
At The Right Time	Activity analysis/ workload audit	*	Significant?	Limited	Data required/ management capacity to act on analysis
	Shift patterns		High?	Limited, unless shift payments introduced	Requires data on work flow. May require legislative change. May be opposed by unions/ associations
	Flexible hours		High?	Limited	May require legislative change. Less likely to be opposed by unions/ associations
Doing the Right Thing	Responsiveness		??	Likely to be limited	May require change in culture
	Focus on core competencies and skills		?? Depends on context	Likely to be limited	Requires job descriptions
Doing things Differently/ Doing Different things	Improved short term training/ reflective practice	**	Significant	Variable	Requires audit/ training needs analysis
	Improved management/ supervisory techniques	**	Significant	Variable, but unlikely to be significant	Requires training
	Mechanisms for community feedback	*	?? Depends on context	Should be negligible	Assumes devolved system
	Improved tools/ transport/supply/ equipment	*	Significant? ?	Variable, some one-off, some recurring	
	Extended roles	*	Significant? ?	Variable- may stimulate worker demand for pay rise	May require legislative/ regulatory change
	Doing different things	*	Significant? ?	Variable	May require culture change. May require legislative/ regulatory change. Could draw workers away from other priorities

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ANNEX 1 TERMS OF REFERENCE

SCALING UP HEALTH AND EDUCATION WORKERS: LITERATURE REVIEW

Background

DFID's Scaling Up Services Team is set up to consider service expansion in a world where aid resources are escalating rapidly. As part of this it is looking at addressing the global shortages of health and education of health workers, in particular the 'crisis of health workers' in some countries of sub-Saharan Africa. On health we are engaged with the Joint Learning Initiative and the High Level Forum on Health.

Purpose

The purpose of the four discreet literature reviews described below is to provide the evidence base, and where appropriate examples of successful and unsuccessful interventions, to inform the thinking and work of DFID and its partners. It will identify gaps in the current knowledge base.

Objectives

The objective of these reviews is to understand the evidence relating to approaches to improving outcomes through increasing the numbers, productivity, quality, distribution and retention of health and education workers:

Community and informal health workers – The recent UN Millennium Project (UNMP) report recommended as a 'quick win' a "massive training of community-based workers". Informal/ community-based health workers can play an important role in both preventative and curative interventions. Some experience, e.g. from the Integrated Management of Childhood Illness programme, suggests that, to be most effective and impact on health outcomes, community-based workers need to be supervised and linked to formal health systems. This review will examine the evidence to support or reject the hypothesis that investment in 'community workers' can only impact on health outcomes with parallel investments in trained health workers and health systems.

Increasing the productivity of an existing 'stock' of health workers - training significant numbers of new health workers will take time. Graduate training takes a number of years and many countries have only limited capacity to train doctors and nurses. This review will look at strategies that have been undertaken to increase the productivity of health workers in delivering quality of care to more clients. It will examine the evidence to support or reject the hypothesis that short-term training, incentives, better equipment, supplies and conditions and other things can be employed that improve outputs and health outcomes without increasing the numbers of health workers.

PRSPs and Education – In 2003, the HSRC undertook a review of the human resource content of PRSP and HIPC documentation in 6 selected African countries. This review will undertake a similar analysis to assess how well human resources for education are covered in the PRSPs or linked documents of selected countries in the major change programmes embarked upon by government.

Systems for training – This literature review should cover the history of skills training in health and education in developing countries (mainly low income Africa and Asia) to examine the following hypotheses: i) training for teachers and

healthworkers is normally controlled by the state – but in some instances, the private sector can be regulated to provide quality workers; ii) training institutions for teachers and health workers have largely been developed to supply the public sector, which leads to undersupply if there are many providers, emigration prospects, AIDS and state-only training of workers; and are normally exclusively controlled by state; iii) private demand for training is often wasted in “rent-seeking” for limited public sector training places; iv) there are useful examples of total-market planning of the supply of skilled workers; v) there are useful examples of public and private provision of training.

Recipient

The work is being commissioned by Policy Division’s Scaling up Services Team. The output is intended to inform the work of DFID and the wider international community when supporting service delivery in difficult environments.

Scope

The consultants will be expected to draw upon a wide range of sources including, but not restricted to:

- Academic
- The International Community:
- Grey literature, e.g. evaluation reports

Method

The consultants will be expected to develop an appropriate methodology in order to systematically conduct and produce the review.

Outputs

The main output from this consultancy will be 4 short reports (maximum 10 pages each) that summarise the literature and evidence in the areas outlined above. Each report should

- Briefly define the problem and its scope
- Use country examples to provide illustrations of successful and unsuccessful approaches
- Where appropriate draw some conclusions of what we know about what works and under what conditions.

Timeframe

The consultancy should commence as soon as possible and all outputs should be completed and agreed by 15 March 2004.

Stages	Time frame	Consultant days	Reimbursables
Literature search of existing documents and information on increasing levels of skilled attendance	Mid to end February	Community and informal health workers – 2 days Increasing productivity of an existing stock of health workers – 2 days PRSPs and Education - 4 days Systems for Training - 2 days Research assistance time - 8 days	
Telephone interviews with country teams for PRSP and Education	End February	2 days	Telephone calls
Analysis of documents and interviews to determine the gaps and areas that need further strengthening and report writing	Early to mid-March	Community and informal health workers – 3 days Increasing productivity of an existing stock of health workers – 3 days	Printing costs

		PRSPs and Education - 4 days Systems for Training - 3 days	
TOTAL DAYS		25 days expert time 5 days research assistance	

Reporting and Management

The consultants will report directly to Ali Forder (A-forder@dfid.gov.uk). The DFID project officer is Peter Clarke (p-clarke@dfid.gov.uk)

Costs

Across the reports, a total of 30 days of consultancy inputs.