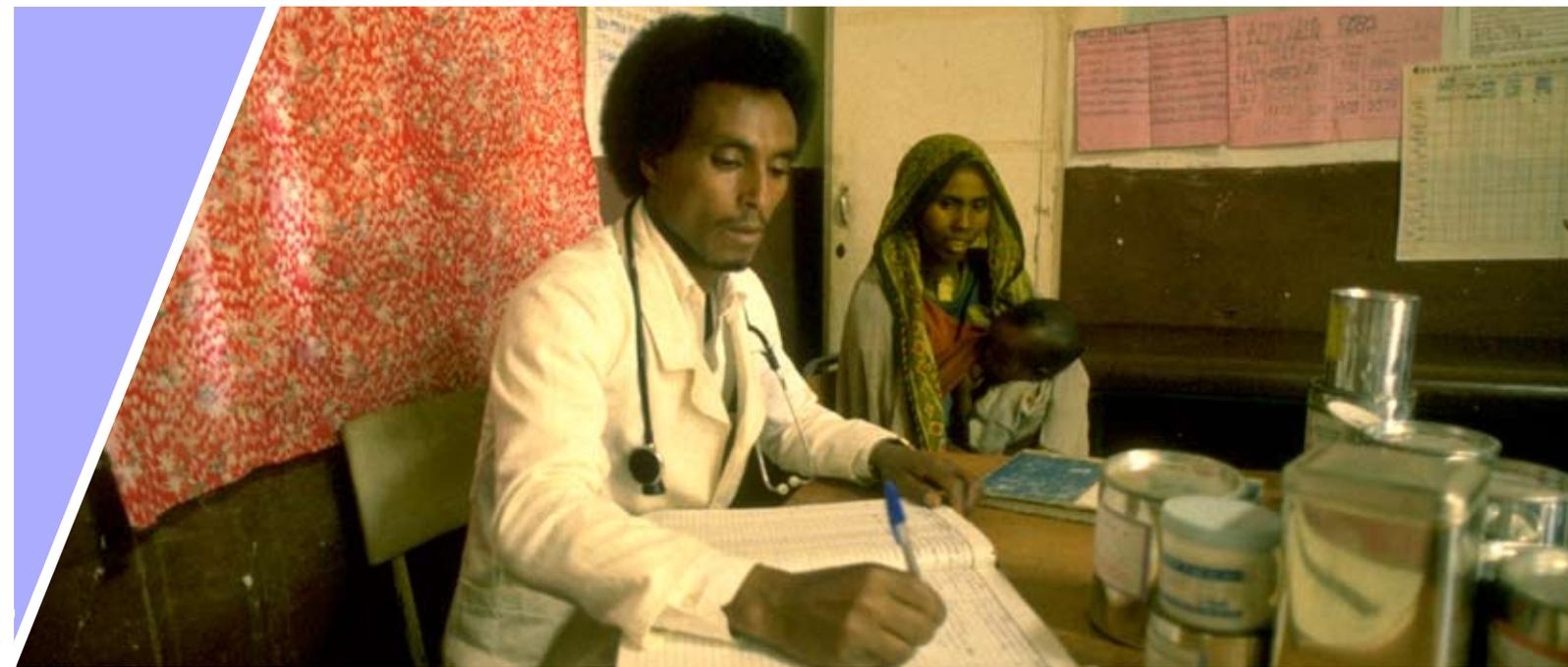


**What is the evidence of the impact of increasing salaries on improving the performance of public servants, including teachers, doctors/nurses, and mid-level occupations, in low- and middle-income countries: Is it time to give pay a chance?**



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## List of Abbreviations

DfID	Department for International Development
EPPI-Centre	Evidence for Policy and Practice Information Co-ordinating Centre
MDG	Millennium Development Goal

## Abstract

### What do we want to know?

The Millennium Development Goals (MDGs) have stimulated a plethora of research on civil servant remuneration and poverty reduction through improved civil service performance and Decent Work (MDG 1b). Since the year 2000, an emphasis on market forces has directed attention to output-based pay (or pay-for-performance) instead of the payment of decent/liveable fixed salaries that trust public servants to deliver 'performance-for-pay', i.e., performance that is contingent on pay rather than vice versa.

This systematic review covers the literature from 2000-2010 and focuses on frontline occupations in health (doctors, nurses, mid-level occupations) and in education (teachers), in low- and middle-income countries. It is based on a pre-prepared protocol and used extensive searches of multiple sources.

### Who wants to know?

Employers, policy-makers, the UK Department for International Development and similar departments in other countries.

### What did we find?

The searches identified more than 28,000 records. As expected, the vast majority of these were not relevant for this systematic review. However, we found and summarised 143 previous reviews of the evidence and also identified 738 general background publications, with the most common type being a cross-sectional survey of satisfaction with pay (115 articles). Using mostly subjective ratings or rankings, often with single items or themes, these studies do help to establish that pay-related job satisfaction is experienced as low for health workers (n = 89), and to some extent teachers (n = 20), with a further six studies including both groups (e.g., nursing educators). A total of 158 articles were eligible for appraisal, but 157 of these were judged to be ineligible for this review, chiefly on methodological grounds. These reasons included inadequate measures of: (i) pay (n = 34); (ii) pay variation (n = 48); and (iii) lack of a control comparison (n = 28). Nine studies in the group missed only one or two of the eligibility criteria, for example cross-validating reports of demotivation against hard performance records, controlling for human capital and other potential confounders, or recording actual performance using the most reliable and valid measures. These methodological opportunities are incorporated into a single research protocol that researchers and their funders can apply to commission better studies on this question.

The single included study reported a significant improvement in Brazilian students' grades when the base salaries of their teachers were higher, controlling for human and material resources. However, the study did not explore intervening mediators or moderators such

*The impact of increasing salaries on improving the performance of public servants*

as job satisfaction or work justice. The most striking finding of our systematic review is the vast quantity of articles across many disciplines that discuss the issues we wished to address, but do so in an environment which is almost free of empirical evidence linking actual pay variation to actual work or service performance. The literature is therefore wholly inconclusive, at this stage.

### **What are the implications?**

Key implications for stakeholder groups are: (i) journal editors should cease accepting statements of the problem, which may add little to the research base needed to solve it; (ii) based on the research we found for the review, researchers are able to design studies that adequately evaluate performance-for-pay, and that may enable fairer comparisons with pay-for-performance; (iii) to the extent that research has not yet evaluated the performance-for-pay policy option, policy-makers as well as managers in organisations cannot rule out the potential for fixed salary reform to enhance public servant motivation and performance, reduce moonlighting and brain drain, and build local capacity. The core inference from our systematic review is that fixed salary reforms have yet to be evaluated conclusively.

### **How did we get these results?**

During November and December 2010, we searched a wide range of databases and checked the reference sections of potentially relevant articles. A minimum of two reviewers checked each record retrieved in the searches, and independently extracted data and assessed the quality of the potentially eligible studies. The searches had to be large and comprehensive because of the lack of any suitable index terms and the desire to minimise the risk of missing eligible studies. We recognised that this would lead to the identification of vast numbers of irrelevant articles in our electronic searches which would need to be screened out.

## CHAPTER ONE

### Background

#### 1.1 Introduction

The Millennium Development Goals (MDGs) are arguably the most ambitious, systematic and comprehensive plan to-date for reducing global poverty (Annan, 2000). Since their inception, a recurring challenge persists: translating the ‘grand plan’ into everyday practices within key institutions, including the public/civil service in low- and middle-income countries (Easterly, 2006). In particular, civil service sectors - and the organisations within them - are charged with:

1. Delivering effective services to enable basic capabilities in education (MDGS 2 and 3a) and health (MDGs 4-6). Such organisational missions include sector-wide partnerships with donors (MDG 8).
2. The provision of what the International Labour Organization and the United Nations jointly term ‘Decent Work’, including an income adequate to live on, for civil servant employees and their dependents (MDG 1).

In fact, the former may depend on the latter. Concerns have been raised for instance about basic salaries in the public sector (Ferrinho and Van Lerberghe, 2002), chiefly in education (Michaelowa and Wittman, 2007) and in health care (Dräger, Gedik and Dal Poz, 2006). The concern is that basic wages may be insufficient to motivate public servants to perform in the job - for example: to turn up for work (mainly in teaching, e.g., Duflo and Hanna, 2005); to engage with the work itself (in both teaching and health, e.g., Bennell and Akyeampong, 2007; Mathauer and Imhoff, 2006); not to get involved in diverse forms of moonlighting to help ends meet (in both teaching and health, e.g., Cliggett and Wyssmann, 2009; Jumpa et al., 2007); not to seek or accept under-the-counter payments (in health, Fidler, Bredenkamp and Schlippert, 2009; Lewis, 2007); and not to become part of the brain drain (mainly professionals in health, e.g., Nguyen et al., 2008).

Due to their potential to derail poverty reduction, remunerative concerns like the above have prompted at least two proposed and non-exclusive policy reforms: (1) Introduce more elements of performance-based pay, i.e., pay that is contingent on performance (pay-for-performance), into public service remuneration, normally over and above base salary; and (2) raise base salaries for public servants to provide a decent, living wage (Marchal and Kegels, 2008; McCoy et al., 2008). Performance-based pay is not the focus in the present review. Conceptually, it is the opposite of making variations in a fixed salary through which input (like teacher or nursing qualifications, or experience in teaching or nursing), not output (e.g., student grade point averages or patient satisfaction), is rewarded with pay. Input-based compensation can be thought of as ‘performance-for-pay’, not pay-for-performance (Loeb, Miller and Strunk, 2009; Weibel, Rost and Osterloh, 2010). In low- and middle-income countries, performance-based pay initiatives per se have been and are

being systematically and extensively examined (e.g., Eldridge and Palmer, 2009; Lavy, 2007; Oxman and Fretheim, 2008, 2009; Scheffler, 2010; Vegas, 2007; Vujicic et al., 2009). Put crudely, the evidence has been mixed, both for teachers (Vegas, 2007) and in health (Oxman and Fretheim, 2009), partly because of unintended effects like undermining intrinsic motivation and a lack of controlled studies (Weibel et al., 2010). Performance-based pay is therefore not the focus in the present review. Rather we are interested in a second type of policy pathway, in which pay is changed with the intention of changing performance.

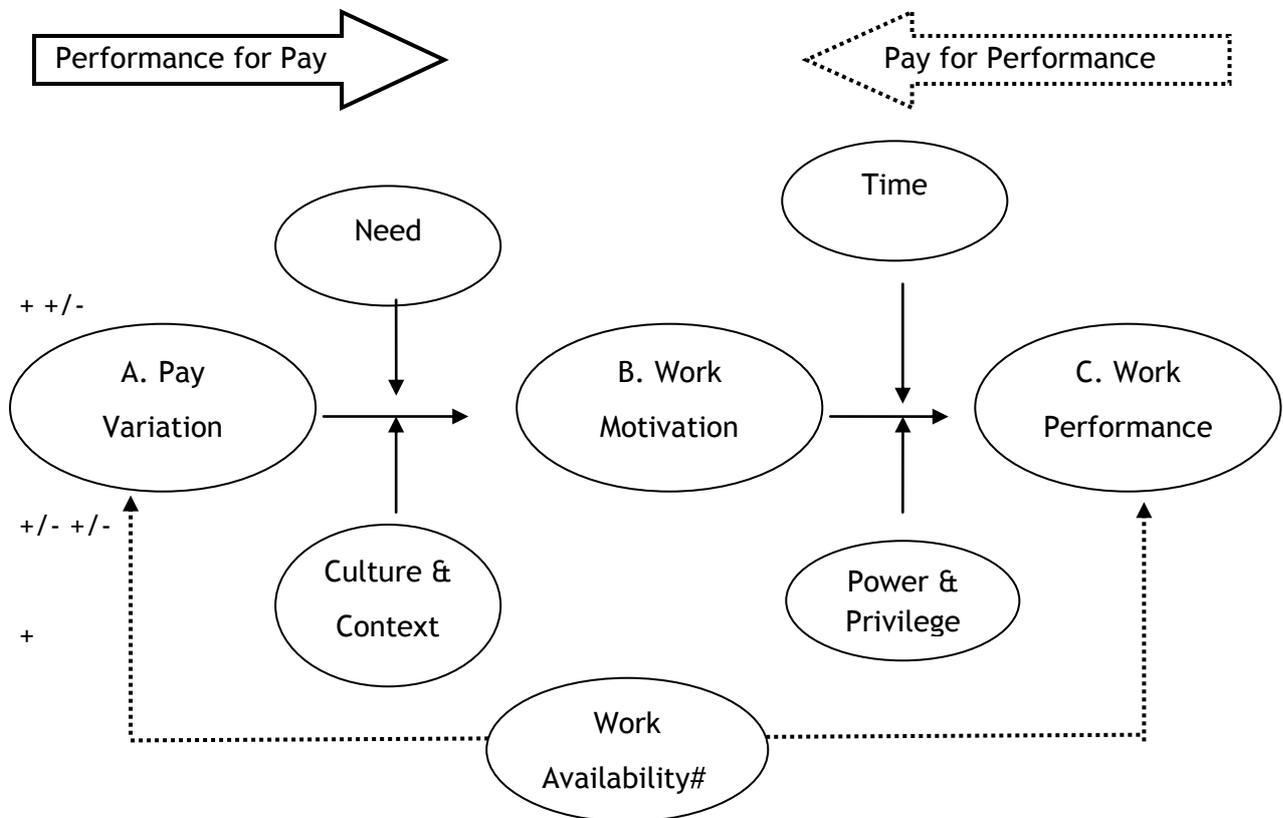
This is the first systematic review to address an arguably fundamental yet possibly neglected policy question: What is the evidence of the impact of increasing salaries on improving the performance of public servants, specifically in the education and health sectors, chiefly teachers in the former, doctors and nurses in the latter, and paraprofessionals/mid-level occupations (such as classroom assistants and community health workers) in each (Carr et al., 2010a)? The last group are typically not formally qualified as teachers/doctors, though they may perform some of the roles of each, following appropriate training, experience or both (Lewin, 2002; MacLachlan, 2008). Originally, we had planned to include an additional focus on the judiciary sector, specifically judges, whose salaries may have special motivational consequences for a civil society (Kashoti, 2006). However, despite extensive searching, we failed to identify a viable literature on this topic.

Implicit trust in the market, and perhaps less trust in workers themselves (MacLachlan et al., 2010), might have distracted policy-makers and researchers from evaluating performing for pay (performance-based pay), before decent work that simply pays decent and liveable fixed wages (Segall, 2003). For example: ‘Only in India and Lesotho do qualified teachers earn anything like a living wage that covers even their most basic subsistence needs’ (Bennell and Akyeampong, 2007, p. viii); and from health sectors, ‘in many [lower-income countries], the salary of health care workers ... is usually not high enough to raise and feed a family’ (Dünser, Baelani and Ganbold, 2006, p. 1236).

This review highlights frontline occupations in key sectors: teachers in education, and doctors, nurses and - increasingly - mid-level occupations in health (Callaghan et al., 2010; McAuliffe et al., 2009). The review period covers research published between 2000 and 2010, to seek to identify the most up-to-date research of relevance to the current situations globally and nationally. Before the MDGs, there was certainly concern about basic salaries in low- and middle-income countries (Chew, 1990), but no published hard evidence on the links to public servant performance, in either education (Michaelowa and Wittman, 2007) or health (Chopra et al., 2008).

## 1.2 Definitional and conceptual issues

On the surface there are two literatures on salary reform in the public service, one in education, and one in health, with separate journals, references and bibliographic databases. Conceptually there are links, however. These are depicted in Figure 1.1 (Carr et al., 2010a).

**Figure 1.1:** A model of the links between salary change and performance**Key**

# e.g., not having to take on extra jobs just to make ends meet, during main job working hours.

+ = positive relationship; - = negative relationship

Source: Adapted and extended from Carr et al. (2010a)

From Figure 1.1, each literature posits a mediator between pay on the one hand and performance on the other; this is usually Work Motivation (Analoui, 2009; De Grauwe, 2005; Franco, Bennett and Kanfer, 2002; Sakyi, 2008) rather than work ability (Fritzen, 2007). Motivation tends to be operationally defined as an attitude, often as job and/or pay satisfaction rather than work engagement or organisational commitment (Franco et al., 2004; Ssesanga and Garrett, 2005). Also, decent pay is commonly conceptualised as a 'hygiene' issue, i.e. necessary for keeping workers motivated in the same way that hygiene is required for health, but once attained it is not sufficient to motivate behaviour in itself (Chandler et al., 2009). Pay Variation in Figure 1.1 is thus comparatively salient, creating motivational 'wage efficiencies' in low- and as well perhaps, medium-income settings (Abbas and Zaman, 2005).

The conceptual elements in Figure 1.1 have logical implications and ramifications for a systematic review of the research. Firstly, studies must include hard measures of actual performance, not rely on subjective anticipations or forecasts of improved performance

(Jenkins et al., 1998; Paulsen, 2008). With due respect to alignment (the key principle for MDG implementation, that development initiatives should respect local perspectives and values), there are nonetheless potential social desirability and Hawthorne effects<sup>1</sup>, risks of common method variance and predictor-criterion incompatibility, especially insofar as words often do not translate into concrete actions (Leonard and Masatu, 2006). People in general are far from 100% accurate at predicting the way they will be in the future (Gilbert and Wilson, 2009), especially against the relative predictive power of past behaviour, which in this case suggests that they were demotivated (Ouellette and Wood, 1998). With job satisfaction predicting at best a third of the variance in work performance, attitudinal measures (individual or aggregated by organisational unit) are thus no substitute for data on actual performance (Fisher, 2010).

As Figure 1.1 shows, pay variation might also link to performance directly, e.g., through Work Availability: not having to operate a taxi during regular work hours does not necessarily boost a teacher's satisfaction at school or university but in a literally direct sense it may enable the teacher's classes to be taught (Cliggett and Wyssmann, 2009). As Cliggett and Wyssmann point out, many teachers need to undertake additional work, such as driving a taxi, in order to supplement their pay from teaching so as to achieve the income they need. A similar direct logic may apply to health worker salaries, which are also, often, far from adequate for the basic necessities of life (Dünser et al., 2006).

From Figure 1.1, the detection of an effect of pay variation requires systematic variations in salary between the targeted group and a comparative 'control' or, more likely perhaps, quasi-control group, and a measure of the subsequent differences in their performance. This might be a similar group of workers in parallel to the targeted group, or a pre-measure of salary and performance - meaning a design nested longitudinally in time (Stone-Romero, 2009). Acid tests like that, with criterion variables at time 2 regressed on predictor variables at time 1, with appropriate statistical controls on human capital and demographic variables at time 1, can indeed be found in the wider literature - for example in naturalistic studies of actual turnover among nurses (Chen et al., 2008).

We have just seen that Time and Need (wage efficiencies) moderate the potential import of pay variation. Furthermore Culture, e.g., distributing resources fairly and justly, based on need versus merit, may amplify rather than reduce (+/-) any link from A to B (Dieleman, Gerretsen and van der Wilt, 2009). Context more generally will include organisational as well as societal cultures and climates (Grindle, 1997). These applied constructs in turn suggest attention to different levels of analysis and their cross-linkages (Franco et al., 2002; Oliver et al., 2005). Power and Privilege is another potential moderator of the relationship between B and C, for instance through the institution of 'dual' salaries whereby expatriate doctors and educators can be paid much more, enjoying far greater purchasing power, and hence privilege, even though host national workers have the same or more human capital (Carr et al., 2010; MacLachlan et al., 2010).

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<sup>1</sup> The term "Hawthorne effect" was named and recorded during studies at the Hawthorne Electric Plant, by Elton Mayo and colleagues in the USA in the 1930s, and refers to the effect that observation and attention itself can have on staff morale, i.e., boosting it because people are being paid attention.

At the tail end of the linkages in Figure 1.1, ‘Performance’ (e.g., teacher attendance, student grades; or health worker attendance, can-do gaps, numbers of patients seen or successfully treated) does not include recruitment (Actionaid, 2007), for example using fixed bonuses to encourage entering teaching posts in underserved rural areas (Vegas, 2007, p. 223), or for signing a contract to stay in post after training has been completed, in health service organisations (Bärnighausen and Bloom, 2009). Performance does nonetheless include organisational retention/turnover, and in principle the prevention of brain drain (Willis-Shattuck et al., 2008). Among the antecedent conditions in Figure 1.1 however, Pay Variation cannot logically include studies that measure pay ratios between a sending and a receiving economy (Brown and Connell, 2004; Stilwell et al., 2004). Whether pay ratios link to migration flows or not is a moot point for several reasons: they cannot be disaggregated, and conceptually they are not measures of pay variation per se (Vujicic et al., 2004). In the final analysis however, they are simply not pay rises but relative pay variation.

To sum up, there are multiple potential mediators and moderators influencing the overall link between salary changes and work performance. Given that complexity (Figure 1.1 is a simplified model), our main aim is to estimate the overall linkage from A to C, and, if possible, illuminate the connecting pathway, thereby providing valuable baseline information for future policy options.

### 1.3 Research background

We focus in this section on existing reviews from low- and middle-income countries. The literature from higher-income countries is vast, and not practicable to review here (for a good overview, see for example, Bloom, 2008 or Gerhart and Rynes, 2003 on compensation and performance; Judge *et al.*, 2001, for job satisfaction and performance; and Forest, 2008, on pay systems and public servant motivation). Figure 1.1 is based on these extant literatures, with the addition of contextual variables and moderators, such as country economy and culture (Carr *et al.*, 2010a).

#### 1.3.1 Pre-2000

There is a general lack of evidence published before the Millennium Development Goals. One review in education observes, ‘in-depth analysis for developing countries is rare and generally concentrates on the aspect of job satisfaction alone: The link to education quality has been difficult to establish so far, there were no suitable data on student achievement until the late 1990s’ (Michaelowa and Wittman, 2007, p. 52; for a review of retention issues in teaching, see Oplatka, 2007). In health services, others have indicated that there are no reports of any hard evidence on the linkage prior to 2000 (see Vujicic, 2009; Vujicic *et al.*, 2009). Foci included in the literature span motivation (Dieleman *et al.*, 2009, health workers; Hussein *et al.*, 2010, mid-level occupations; Windisch, Wyss and Prytherch, 2009, health workers); retention (Sempowski, 2004, physicians only; Bärnighausen and Bloom, 2009, health workers); motivation/retention combined (Willis-Shattuck *et al.*, 2008, health workers); attraction/retention (Lehmann, Dieleman and Martineau, 2008, health workers); attraction/motivation/retention (Dolea, Stormont and Braichet, 2010, health workers); brain drain (Kingma, 2001, nurses); and brain waste in nursing (underemployment either before or following migration respectively - Jones *et al.*, 2009; Likupe, 2006).

### 1.3.2 Post-2000

In their review of the Program of Analysis of Education Systems (PASEC) in sub-Saharan Francophone Africa, Michaelowa and Wittman reveal that the literature on performance for pay has focused on job satisfaction to the detriment of performance, whilst the literature on pay for performance has neglected job satisfaction among teachers, a longer-term sustainability factor (2007, p. 52). A similar pattern may apply in health (Schmidt, Dantas and Marziale, 2008). Michaelowa and Wittman's (2007) review of Francophone literature in education also finds that the PASEC database lacks data on salaries (p. 63), although there was a small but statistically significant link between teachers' job satisfaction and student achievement at school level (p. 65). Elsewhere (Vujicic *et al.*, 2009), salary top-ups have not been systematically evaluated using hard measures of performance (Kober and Van Damme, 2006; Mtonya, Mwapasa, and Kadzandira, 2005). Similarly in health, the analysis of reviews from 1979-2006 by Chopra *et al.* (2008) found no studies examining salary changes and work performance, or examining salary increases and retention of health workers. Finally, although China has begun experimenting with salary reforms in the past decade, these have been mostly focused on pay for performance and reducing costs, with no baseline or control/comparison groups (Yip *et al.*, 2010).

To sum up, there remains an acute need to systematically revisit and appraise the burgeoning literature on salary variation among education and health workers, in low- and middle-income countries (UNDP, 2010). In particular, there is a need to focus such a systematic review on the potential for salary variation to motivate teacher, doctor, nurse and mid-level cadre work performance. Public servant performance is crucial for attaining the Millennium Development Goals. More fundamentally however, performance at work is inherently a good thing in any prosocial organisation.

## CHAPTER TWO

### Methods used in the review

#### 2.1 User involvement

This was a Rapid Evidence Assessment project, with little time to consult widely with end users and key stakeholders before the data-gathering phase. Our approach was to carefully select a cross-disciplinary team, with extensive contacts and everyday practice experience in the domain, for instance, the Institute for Studies in Industrial Development, India. In addition, our policy lead on the project from the Department for International Development was a Senior Governance Advisor within the Governance Group, and former Equity Advisor, with extensive experience of the topic and its potential to inform development and organisational policy and practice. We worked closely with, and under guidance from the Cochrane Centre throughout the project, including blind peer reviews of both the protocol and this report - which were arranged through the Cochrane Collaboration network.

#### 2.2 Identifying and describing studies

##### 2.2.1 Defining relevant studies: inclusion and exclusion criteria

We sought empirical research that used qualitative or quantitative methodologies to assess the effects of a change in salary. Our aim was not to meta-analyse studies comparing salary packages against each other - although we recognised a need to review some of these to set the broader theoretical, economic and policy context for the data we drew (see Chapter 1).

Our pre-search estimate of the size and quality of the evidence base was that it was largely (a) multi- rather than inter-disciplinary, (b) single- rather than multi-level, and (c) methodologically (and theoretically) diverse, ranging from qualitative case studies and ethnographic approaches to quantitative country-level surveys and regressions. Furthermore, there could be (d) insufficient attention to the inherently nested nature of the data, principally within sectors, organisations and countries. Overall, therefore, our own strategy was multi-method rather than simply meta-analytic, exploratory rather than confirmatory, and inductive in choosing a specific method, or methods, of data analysis. We wished to remain open to the possibility of finding incompatible research paradigms, and in that event to use reliable content analysis of distinctive themes (Greenhalgh *et al.*, 2005).

Types of participant included public sector employees in low- and middle-income countries; these comprised health (nurses - including midwives, who perform a key role in MDGs 4 and 5, which focus on maternal and child health - doctors and alternative cadres), education (teachers) and paraprofessionals/mid-level cadres in each sector.

Types of study included ranged from case studies to within-country, multiple regression survey designs. Ideally these were each longitudinal, with a pre-measure of performance prior to salary rise, and preferably included evidence of sustainable rather than shorter-term changes. Specifically, we were interested in: designs that were experimental (randomised controlled trials) and quasi-experimental (pre-measure performance/pay rise/post-measure performance); organisational surveys (with hard measures of performance, not soft self-reports which are subject to smile factors<sup>2</sup> and Hawthorne effects); and single and multiple case studies (where demonstrably sound measures of changes in both pay and performance were taken). We also aimed to check that in any quantitative study, adequate statistical assumptions regarding statistical power, independence, distribution etc., were made. If these data were not available, the study was ultimately not included. For qualitative studies, with individuals or focus groups, we were looking for evidence of reliability between coders, and for the possibility of Hawthorne-type effects.

Translating these ideas into a checklist, at the protocol stage we had intended to exclude studies, if:

- they did not include salary increases as the sole intervention or as part of a remuneration package;
- they did not explore the effects of particular remuneration packages rather than the effects of changes in remuneration package;
- the salary increase was introduced for reasons other than improving performance (for instance to restore equity between genders in line with human rights legislation);
- the design did not include at least one repeated measure (before and after pay variation) or a control group with no salary increase against which the treatment group could be compared cross-sectionally or in a lagged-control design;
- the study design did not control for nesting and non-independence of observations across levels (e.g., country, sector, organisation, individual) or report or conduct appropriate tests for common method variance (where applicable);
- the study did not include a hard (objective) measure of output, such as individual performance appraisal data or archival records of actual output by an organisation or department within it (Carr *et al.*, 2010a, p. 9).

Whilst there are good reasons for following a predetermined protocol to avoid introducing bias once familiar with the findings of studies in a statistical meta-analysis, we found that these arguments do not hold when entering a completely unfamiliar area, where the intention is to capture what can be justifiably learnt from the literature that is available. In practice, the above inclusion/exclusion criteria were over-ambitious and proved too detailed for screening records (titles with abstracts). Instead, during screening we used the default of retaining any record indicating ‘interventions involving upward or downward changes in fixed salary (i.e. a wage that is paid on a regular basis, in a fixed amount’ (Carr

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<sup>2</sup> Smile factors means that people rate or respond to the intervention with positive emotion, either because they feel obliged to do so, or because they have enjoyed the attention being paid to them. The latter case resembles a Hawthorne Effect, which has been defined in a previous footnote. Smile factors are typically short-lasting, and do not necessarily translate into actual behaviour changes after the intervention has been completed, i.e. back in the workplace.

*et al.*, 2010, p. 9). Once we had identified all potentially eligible studies and obtained the full text, we found that we could then meaningfully use the more detailed inclusion/exclusion criteria above alongside the Appraisal Tool (see section 2.2.3), to help us assess the eligibility of studies for the review. At this stage, some new and additional exclusion and appraisal issues with the studies also became apparent (this was presaged in the protocol, Carr *et al.*, 2010a, p. 8). They are outlined in Tables 3.2 and 3.3 below.

### 2.2.2 Identification of potential studies: search strategy

The starting point for the report was a structured search undertaken by the UK Cochrane Centre. The search strategies and databases are listed in Appendix 2.2. Studies in this review were identified by searching a range of health management, medical, nursing, psychological, sociological and general social sciences literature databases. The search strategies were not limited by language and were undertaken for the date range 2000-2010. The searches had to be large and comprehensive, designed to be inclusive and maximise recall, because of the lack of any suitable index terms, and the desire to minimise the risk of missing eligible studies. We recognised that this would lead to the retrieval of vast numbers of irrelevant records that would then have to be screened out. A paucity of relevant subject indexing necessitated a sensitive approach to searching, rather than one that was more specific. For example, a comprehensive list of countries was included in the search strategy, as well as subject terms that would include those countries. This allowed for the accidental omission of countries in either list.

We also searched the grey literature; checked the reference lists of previous systematic reviews and other identified articles; conducted supplementary internet searches; and performed citation tracking of relevant papers.

### 2.2.3 Assessing quality of studies

The following instrument was developed for this review and was used alongside the inclusion/exclusion criteria to appraise the full-text papers. This appraisal tool is based on the tool in the protocol (Carr *et al.*, 2010a), and discussions during a funders' workshop on systematic reviews:

1. Does the paper report on findings from qualitative or quantitative research and did that work involve data and their analysis?
2. Is the research relevant to the topic?

(Note: The exclusion/inclusion criteria were particularly useful in fleshing out 1 and 2.)

3. Is the paper anchored in the literature?
4. Is the conceptualisation culturally competent? For example is there construct, item or method bias)?<sup>3</sup> Such biases may be culturally 'unsafe' insofar as they can cause

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<sup>3</sup> Construct bias means the variable is culturally inappropriate, e.g., self-actualisation in a collectivist setting, item bias means the measure is meaningless, e.g., culturally offensive, and method bias means the process is incompetent, for instance performance appraisal when culture forbids individual attributions – see de Vijver and Hambleton, 1996.

distress, threaten identity, undermine confidence, cause harm, enable misrepresentation of local priorities, etc.

5. Is the sampling appropriate (people, organisations, sectors, countries)?
6. Is the sample design clearly specified? Are there sampling biases?
7. Are the measures reliable and valid?
8. Does the study design meet International Test Commission Guidelines concerning construct, item and method biases (these are designed to ensure cultural safety when conducting tests and surveys; see de Vijver and Hambleton, 1996)?
9. Are there adequate statistical controls on the measures, e.g., for common method variance and nesting in levels?
10. Is the procedure replicable?
11. Are any statistical assumptions checked?
12. Are appropriate forms of data analysis employed?
13. Overall, is the study of sufficient merit to be included in the review, conceptually (theory-based), methodologically (with valid measures, samples and procedures) and analytically (appropriate analysed data)?

We aimed to process any papers that passed through the appraisal phase using the following system (Carr *et al.*, 2010a):

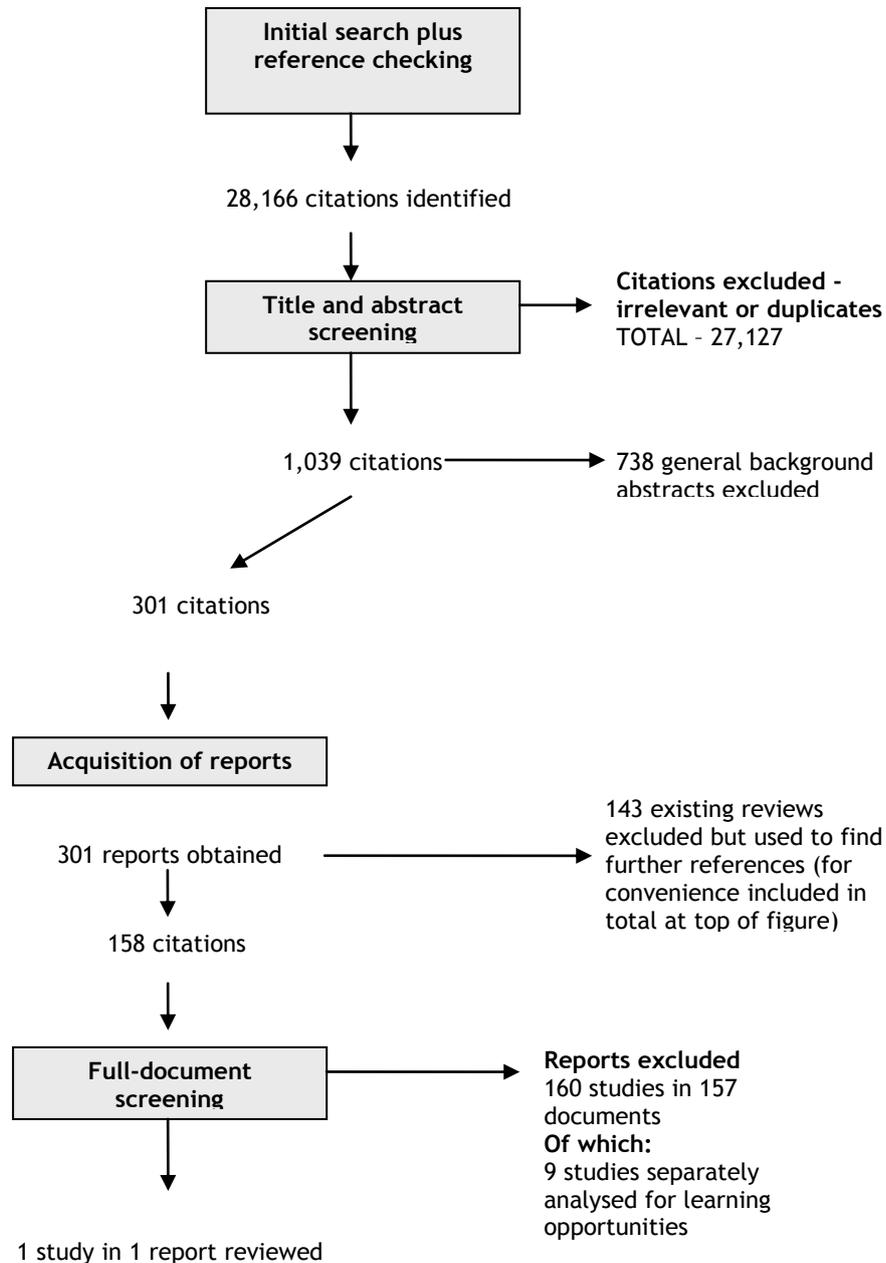
14. Code inductively for type of design (repeated measure, randomised trial), mediators (motives) and outcomes (performance types/dimensions, including level of analysis, either individual or organisational or 'ecological' [country/national], or combinations of these).
15. Code for the following moderators suggested by or actually in Figure 1.1: magnitude of increase (or decrease) in salary; level of poverty (United Nations Human Development Report ranking at the time of the study); time since salary variation; country site (possibly grouped by the cross-cultural category indicators in Hofstede, 2001); and governance system (possibly grouped by the indicators in the appropriate Human Development Report for the study's year of publication).
16. Code for study author(s); level(s) of analysis (e.g., individual, organisation, country); performance measure; and any core summary and test statistics, ranging from N/n (sample size/sample at each level) to F-statistics and correlation coefficients.

## CHAPTER THREE

### Identifying and describing studies: results

#### 3.1 Studies included from searching and screening

As expected, the vast majority of the records retrieved in the searches were completely irrelevant to this review, large numbers of abstracts retrieved from the electronic databases being an unavoidable consequence of having to use non-specific search terms. Figure 3.1 charts the flow of the review. First, every one of more than 28,000 records - an indeterminate number of which were duplicates, triplicates (or more) - was checked for relevance by at least two authors (SC, CLC, MC), (Australasian Cochrane Centre, 2010) to reduce the possibility of overlooking an eligible study (Edwards *et al.*, 2002). They were first classified as non-usable, usable for wider reference only, review that might be a source of eligible studies, or a potentially eligible study. Full-text paper copies of previous reviews and potentially eligible studies were obtained. Any papers for which there were disagreements, at any stage, were also obtained. Residual disagreements were resolved directly. When the two raters did not agree, we consulted the research team for expert advice until a resolution was reached.

**Figure 3.1:** Review of the decision-making process

During scrutiny of each of the more than 28,000 retrieved records, we identified a total of 143 existing reviews. These ranged from reviews of systematic reviews and systematic reviews per se, to regional and literature review papers. Where relevant, these are summarised in Chapters 1 and 4.

We also found 738 ‘background articles’, namely papers that set the context (set the scene) for the current review, for instance in debates about privatisation, or decentralisation, or were relevant to our review but did not meet the inclusion criteria (see Chapter 2). Beyond these background articles, we identified 158 articles for appraisal, and possible coding. As Figure 3.1 indicates however, only one of the appraised *The impact of increasing salaries on improving the performance of public servants*

articles was eligible. A stumbling block was that many papers on close inspection did not actually entail data analysis or were not relevant for unexpected reasons. Given the unexpected outcome, we decided to detail the reasons for these outcomes, using inductive means. The possibility of post-hoc induction was signalled in our protocol (Carr *et al.*, 2010a).

**Table 3.1:** Themes in the background studies

Theme	Frequency
Management measures	172
Finance measures	77
Localisation	77
Workforce crisis	53
Cadres	42
<b>Additional categories</b>	
Surveys of job satisfaction	115
Intentions to leave (turnover or emigration)	39
Push/pull factors	62
Brain waste (access or treatment bias)	17
Ethics of brain drain recruitment	34
Performance-based pay	35
Non-pecuniary motivation in health and education workers	15
<b>Total</b>	<b>738</b>

Table 3.1 provides a brief breakdown<sup>4</sup> of emergent themes in the background articles, some of which would persist in the studies appraised below. From this table, it can be seen that a majority of the background articles focused on a range of contextual factors, including management measures (e.g. quality management, training options, time management) and financing (e.g., cost-benefit analysis, insurance schemes). Further context factors were localisation (e.g., recognising religious or political values), workforce crisis (e.g., shortages of teachers and health workers in rural areas) and the employment of mid-level health cadres/paraprofessional teachers.

There was also a preponderance of survey studies (n = 115), usually structured surveys but occasionally focus groups. These used largely descriptive measures of job satisfaction, including dissatisfaction with pay levels, which was highlighted as a central finding. The studies were mainly in health (n = 90) rather than education (n = 19). A further 6 studies focused on health and education together (for example, in nursing education). In a related vein perhaps, there were a number of cross-sectional studies of intentions to leave (either

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<sup>4</sup> Given the fact that these were initial screenings only, we have not conducted a reliability check. The table contains contextual data only.

turnover or brain drain; n = 39), opinion surveys of pushes and pulls on those already abroad (n = 62), and studies of brain waste (severe underemployment, either through lack of access to the kind of work for which they were qualified, and thereby to decent work, or treatment bias concerning promotion etc. once employed; n = 17). Finally from Table 3.1, there were articles focusing on the ethics of overseas recruitment by government agencies in higher-income countries (n = 34), performance-based pay (n = 35) and, in a related theme, survey studies of non-pecuniary motivation (e.g., professionalism; n = 15).

An important point from Table 3.1 is that a relatively large amount of the research effort and resources for this review was required to demonstrate the salience of inadequate pay and remuneration in the eyes of many public servants, across a variety of occupations and lower- to middle-income settings. The large number of articles documenting that these concerns exist is no doubt seen as a means of addressing the problem - and is certainly not problematic in itself. In terms of the principles for development put forward in the Paris Declaration on Aid Effectiveness (2005 - Ownership, Alignment, Harmonisation, Results and Mutual Accountability), non-pecuniary professionalism is strained precisely because salaries are not 'aligned' with local workers' own expectations and needs concerning decent wages and decent work (MDG 1b, 2000). To the extent that decent pay is a necessary condition for motivated performance (Ololube, 2006), perceptively 'in'-decent wages may, from Figure 1.1, start to undermine non-pecuniary professionalism, and quality of services may become eroded in the process. This would result in a wage inefficiency (Abbas and Zaman, 2005).

### 3.2 Appraised papers

During this phase of the analysis, it became apparent that even the detailed inclusion/exclusion criteria were not capturing all of the reasons for eligibility in the review. In addition, only one study ultimately met all of our inclusion criteria (see below). Hence we used the inclusion/exclusion criteria to help us conduct an open-ended, thematic coding of the full texts (Carr *et al.*, 2010a; see also Tables 3.2 and 3.3).

Table 3.2 presents a content analysis of the reasons for excluding papers that reached the detailed appraisal stage.<sup>5</sup> A full listing of the papers, prior to coding, is contained in Appendix 3.1. Many of the full articles/studies considered would have been ineligible for multiple reasons but we coded from left to right using Figure 1.1, and recorded the first shortfall only. For example, if there was no pay variation, this would be the most basic shortfall, so it was recorded and other failings were not sought. Our assessments and the findings in Table 3.2 are robust: Cohen's Kappa for inter-rater reliability = 0.76, where values above 0.75 are 'excellent' (Robson, 2002). The final figures in this table represent a consensus of opinion, either between the two raters or across the research team.

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<sup>5</sup> These detailed appraisals often revealed features that would have ruled the paper out at the screening of records stage, had the feature been more apparent at that earlier stage.

**Table 3.2:** Content analysis of appraised excluded papers

Theme	Frequency
No relevant data	34
Recruitment only (includes discrete choice experiments)	8
Subjective perception only	12
No systematic pay variation (or measure of it)	48
Confounding/lack of adequate control measures	28
Soft measure of performance	7
Performance-based pay	23
<b>Total</b>	<b>160<sup>6</sup></b>

As can be seen in Table 3.2, a large number of articles did not contain usable data (n = 34), for example, they might not focus on teachers, doctors, nurses or other occupations in education and health. A further eight studies focused on recruitment into education or health work, rather than work performance in the job itself, for example, forced-choice experiments (Lagarde and Blaauw, 2009), in which student nurses, doctors or teachers made situational judgements about future work, with salary rate as a variable.

There were also 12 studies in which measurements were all intentionally subjective, for example moving ethnographic and narrative accounts by (some) teachers and health workers, about the hardships attributable to low salaries. These we believe help to paint narrative accounts of ‘counterproductive work behaviours’ and ‘corruption’ in a different, more rational and understandable light (Ferrinho and van Lerberghe, 2002). The most common reason for non-inclusion in Table 3.2 (n = 48) was a lack of salary variation, either because wages did not change, or because changes were not directly measured. In terms of Figure 1.1, these articles had no antecedent variable, or measure of it (A. Pay Variation). Salary increases was one of our original inclusion criteria.

A further major category related to control, was that studies often included pay variation as part of a bundle of other interventions, for example decentralisation of management decision making and participation levels (n = 28). Decentralisation was part of our original exclusion criteria. These are perhaps the most interesting studies as they represent the contexts in which such salary variations are likely to occur. It would be useful, but would require a separate paper, to map the sorts of increases and the other measures associated with them, with a view to developing a more contextually appropriate multi-modal assessment. Some of the dimensions of most interest here are workplace definitions of widely espoused principles for effective human services. Prominent examples from development policy would include for instance, ownership, alignment, harmonisation, results and mutual accountability (Paris Declaration on Aid Effectiveness, 2005). The

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<sup>6</sup> Note that two articles appraised reported on the results of more than one study: Muralidharan (2007), three studies; Penn-Kekana et al. (2005), two studies. Each study was coded individually, inflating the figure of appraised excluded papers.

research would need to determine the extent to which these and other ‘human factors’ render the effects of task-focused, pecuniary interventions more sustainable (MacLachlan *et al.*, 2010).

At the other end of the model in Figure 1.1, some studies ( $n = 7$ ) had measured actual pay variation but had also used a relatively ‘soft’ measure of performance, such as self-reported motivation or job satisfaction (mediating rather than criterion variables). Hard measures of performance were part of our original inclusion criteria.

Finally, 23 studies on closer inspection were focusing on performance-contingent payments rather than implementing a priori salary increases, including fixed bonuses. Again, performance-based pay was part of our original exclusion criteria.

In sum, most of the reasons for exclusion identified through the inductive analyses in Table 3.2 are methodological. Therefore, in an effort to extrapolate and identify learning opportunities which might help strengthen future research in this area, Table 3.3 analyses key methodological features in nine of these studies, which we believe, using Table 3.2, signal ‘Learning Opportunities’. These arise because the study would have required just one or two methodological improvements in order to have been eligible for this systematic review. Thus if similar studies were done in the future, and featured the necessary improvements, they would be eligible for subsequent systematic reviews of this research question (or for an update of the review). For instance a study that gathers narrative accounts of dual jobs following drops in real salaries may need to cross-validate those accounts, for example against archival records (hard, versus ‘soft’ - see Table 3.2), showing changes in performance, to be included. Such learning opportunities can further be compared against the one study that was selected for coding, as a way of identifying what would be needed, e.g., randomised trials or exogenous intervention/pay increases. Hence these nine studies do not necessarily correspond on any one-to-one basis with the seven thematic categories listed in Table 3.2. In accordance with the rationale for specifying the eligibility criteria for a review in a pre-agreed protocol, we resisted the temptation to modify our inclusion criteria in order to include these ‘learning opportunities’ studies. This avoids the risk of a biased answer if studies that do not meet the pre-specified level of rigour are used to answer the research question, and the potential bias that arises if our knowledge of the findings of these studies influences our decision to make post hoc changes to our plans in order to include them.

From Table 3.3, it is important to remember that these studies did not necessarily set out with the express purpose of testing whether salary increases lead to improvements in work performance, and their failure to be eligible for our review does not necessarily imply that they are of poor quality or are inappropriate research. It would clearly be very unfair to judge the papers solely on that particular criterion. Equally however, some of the papers do interpret their findings in a post hoc manner, using pay variation as a retrospective explanatory variable. This may be motivated in part by a desire to see salary reform in general and performance-based pay in particular. Hence the contents of Table 3.3 may provide useful information on the substantive issue, including how it might be addressed more directly and with a greater degree of confidence.

**Table 3.3:** Methodological learning opportunities (n = 9)

Theme	Study	Purpose	Participants	Measures	Procedure	Findings	Opportunity	Strength
Subjective	Israr <i>et al.</i> (2000)	Coping with structural adjustments	Cameroonian doctors+nurses 12 focus groups	Focus questions, subjective reports	Coping when salaries are degraded	Purchasing power ↓ Dual income acts ↑	Validate versus actual changes in service, absenteeism, etc.	Method is aligned
No pay variation	Leonard and Masatu (2010)	Gauging professionalism	80 Tanzanian doctors, nurses, cadres	Structured Observations Protocol	Vignettes + consultation Habituation	Performance is not 1:1 function of competence	Can pay variation alter 'know-do gap' <sup>7</sup> (p. 1460).	Operational measure of quality at work
Lack of control measures	Das and Sohnesen (2007)	Gauging doctor effort	286 Paraguayan doctors	Doctor Effort Index (factor analytic)	Structured observation, quality scores	Effort predicted quality (validity) Salary↑ Effort↓	Control for 'bargaining power' (p. 335)	Cross-sector applicability (p. 336).
	Huff-Rouselle and Pickering (2001)	Predictors of service delivery	Cambodian midwives and doctors	Govt/NGO service quality index	Tracked 80 patients' care for 3 months	NGO worker salaries higher, so was care quality	Control for resources, human capital, selection	Focus on quality of care: patients' views
	Huntington <i>et al.</i> (2010)	Compared perf.-based pay and salary change	81 Egyptian maternal/child health workers	History taking, exams, tests and patient follow-up	Accredited units/pay rise controlled	Perf.-based pay raised perf higher than salary top-up	Pay not varied, pay system was. No pre-test.	Shows pay systems can be compared

<sup>7</sup> The gap between what one is able to do, as shown by a test score on medical or educational knowledge versus what is actually delivered to patients/pupils, observed in situ.

	Jimenez and Sawada (2003)	Decentralisation and student retention	878 students 142 El Salvador primary schools	(no)Decentral. incl. Teacher 'bonus' 1996-98 retention statistics	Panel study, national database/survey	Retention ↑ with intervention	Pay ↑ confounded with parent visits	Panel data, random sample Control possible
	Kremer <i>et al.</i> (2005)	Staff absenteeism in schools	11,100 spot-checks on 3,700 Indian schools	Absence and individual-level correlates	Cross-sectional spot checks	Older, degreed, and senior (proxy higher pay) Absent ↑	Control human capital/measure pay (p. 666).	Indicator is consequential for students
	Kushner <i>et al.</i> (2010)	Emergency room surgery establishment - can it work?	Training for 144 health workers + salary support	Number of major operations annually 2007-9	Equipment and training, \$800 monthly for pay	Annual rise in ops Surgeons gave \$800 to nurses	The only evidence was that hospital managers identified salary support as central	Gauge variation in salary and performance
Performance	Tyson and Pongruengphant (2004)	Monitor job satisfaction and stress	200 Thai nurses from 1997 and 2002	Job satisfaction, stress, private versus public sector	Sample survey individual level, Time 1 and Time 2	Workload + stress ↑, satisfaction ↑. Pay covariate reduced the differences	Add harder index of performance and test for mediation by job satisfaction.	Longitudinal, with statistical control on pay variation

In Table 3.3, the first paper considered (Israr *et al.*, 2000) gathered poignant narratives about the deleterious impacts of structural adjustment programmes on salary viability, including the need for dual jobs (possibly in the informal sector, Tanga *et al.*, 2001), under-the-counter payments and other ‘counterproductive’ work activities by the public servant workforce (for a more general example, see Kyaddondo and Whyte, 2003; for earlier studies without pay variation, see McPake *et al.*, 1999; Munene, 1995). The study mentions a cross check against other sources of data, but does not report those data fully. Had the data been triangulated, for example by reporting more clearly on checks of absenteeism records to see if there was co-variation between salary drops, rises in the objective absenteeism rate or actual performance from archival records, and subjective reports of public servants taking dual jobs etc., then we would be more confident, perhaps, that salary drops do directly impact on work performance, and ultimately service delivery.

Papers by Leonard and Masatu (2010) and Das and Sohnesen (2007) provide promising measures of (in these cases, health service workers’ performance, using structured protocols and observation methods. These measures can be used to index both competence (vignettes, akin to examination question work sample tests) and performance (by observing, during consultations, whether the motivation is sufficient to translate the competencies into actual work performance). Any Hawthorne effects may be reduced through ‘Habituation,’ by which the observees can become used to the presence of the observer(s), thereby behaving naturally (Table 3.3). These papers offer intriguing results for debates around pay and performance, finding for example, that ‘[d]octors in Paraguay who exerted lower effort received higher pay’ (Das and Sohnesen, 2007, p. 336). Noting that female doctors and doctors on temporary contracts or lower salaries exerted higher effort, the authors argue that doctors with greater individual ‘bargaining power’ can negotiate more desirable positions, permanent contracts and larger salaries. Future studies need to consider and control for the effect of bargaining power on performance. Interestingly from Table 3.3, the ‘bargaining power’ variable may apply cross-sectorally, in this case to trainee teachers who are posted to rural areas, whose salaries can become inequitable and thus demotivating (Das and Sohnesen, 2007, p. 336).

Cross-sectional studies in general are potentially problematic from the perspective of control. In the study by Kremer *et al.* (2005) of absenteeism in Indian state schools, a factor that reportedly impacts on student grades (p. 666), absenteeism is higher among higher-paid workers, proxied by teachers with degrees, greater age and headteacher status. However, we cannot tell if non-observed factors are driving the apparent linkages, for example work motivation or job security (p. 666). This issue of potential confounding also applies to the studies of health workers (Huff-Rouselle and Pickering, 2001; Huntington *et al.*, 2010; Jimenez and Sawada, 2003). In this last paper for example, regular classroom visits by parents of the children, a normal part of the decentralisation process, is also a methodological confounder for any effects of salary rises that were also part of the reform package.

The paper by Kushner *et al.* (2010), in which the \$800 was donated monthly by Surgeons OverSeas (SOS) and distributed as salary support initially to the surgeons only, is informative because of its suggestion that pay rises may need to be distributed equitably in order to have an effect - although this possibility was not checked against actual salary increases and actual performance (individual or team). This point about actual performance carries over into the final study listed in Table 3.3, in which links were made between pay variation and job satisfaction (Tyson and Pongruengphant, 2004). However in terms of Figure 1.1, this study did not measure actual behaviour, beyond the intervening attitudinal factors of job satisfaction and occupational stress.

A general point we extrapolate from this study is that more tests of mediation are required, across the literature in general.

One study was appraised positively and deemed eligible for this review (Menezes-Filho and Pazello, 2007). It is important to stress that this process was conducted across the entire team, given the unusualness of the study itself. Specifically, the full-text article was shared with all authors of this review, who each commented on its appropriateness and made contributions to the text in Table 3.4. The decision to include it was unanimous. The report of this study was retrieved in the searches of Eric and Social Science Citation Index.

**Table 3.4:** Appraisal and coding of the included study

Appraisal and coding tools	Menezes-Filho and Pazello (2007)
Does the paper report on findings from qualitative or quantitative research and did that work involve data and their analysis?	Quantitative analysis of data collected with a national survey (carried out by the Ministry of Education).
Is the research relevant to the topic?	Identifies the effect of raising teachers' wages on the 'proficiency' of public school pupils, defined as academic grade.
Is the paper anchored in the literature?	Contextualised in the Brazilian education system, rather than academic theory of work performance.
Is the conceptualisation culturally competent?	Data collected by a local survey tool.
Is the sampling appropriate (people, organisations, sectors, countries)?	Brazil; education sector; representative sample of schools; teacher and student characteristics were included.
Is the sample design clearly specified? Are there sampling biases?	Minimal information was provided. A representative sample of schools was used for the survey.
Are the measures reliable and valid?	The marking system standardisation not stated. Marginal.
Does the study design meet International Test Commission Guidelines concerning construct, item and method biases?	There were no intervening behavioural or attitudinal variables, hence not very applicable.
Are there adequate statistical controls on the measures, e.g., for common method variance and nesting in levels?	Yes. Dummy variables were used rather than hierarchical linear modelling. The state/municipality is used as a dummy variable rather than school(s) in each, though school characteristics (e.g., facilities) are modelled.
Is the procedure replicable?	Yes
Are any statistical assumptions checked?	Yes

Are appropriate forms of data analysis employed?	Yes
Overall, is the study of sufficient conceptual, methodological and analytical merit to be included in the review?	Yes
Type of design (repeated measure, randomised control trial), mediators (motives) and outcomes (performance types/dimensions, including level of analysis, either individual or organisational or 'ecological' [country/national], or combinations of these).	Repeated measures. 'Quasi'-randomised trial (the government exogenously allocated funds to needy schools). Mediators were not considered. Outcomes were measured by changes in student grades. Levels = student, teacher, class, school, municipality, state.
Magnitude of increase (or decrease) in salary, level of poverty (United Nations Human Development Report ranking at time of study), time since salary variation, country site (possibly grouped by the cross-cultural category indicators in Hofstede, 2001) and governance system (possibly grouped by indicators in the Human Development Report for the publication year).	Salary increase is indeed stated in the paper in addition to the fact that the reforms make it mandatory that 60% of the budget is spent on teachers' wages. Brazil (middle income country). Study measures changes over time from 1997-1999.
Study author(s), level(s) of analysis, performance measure, and any core summary and test statistics, ranging from N/n to F and r.	Individual student level of analysis, with grades as the performance measure, and the core test statistics being: Ln wage (observed) 27.764 (SE = 6.509). R <sup>2</sup> = 0.224. Effect size = 0.50 standard deviations.

Process aside, the study's content aimed to 'identify the effect of teachers' wages on the proficiency of public school pupils' (Menezes-Filho and Pazello, 2007, p. 660). The participants were Year 8 intermediate students (n = 15,844) and their teachers (n = 2,577), at 38 public schools in Brazil, from 1997 (Time 1) to 1999 (Time 2). The performance criterion was student grade in one of three possible subjects: Portuguese, mathematics or science. The intervention was an exogenous injection of funds from central government, on the basis of proportional enrolments, from which a minimum of 60% had to be allocated to individual teacher salaries. The average increase in salary was approximately 36%. The study included statistical controls on a range of variables, from student family data to teacher experience and school infrastructure, including dummy variables and their interactions for multiple levels of analysis (student, classroom/teacher, municipality and state).

Using a method of analysis termed 'differences-in-differences', the difference-in-pay (from Time 1 to Time 2, interacting with state versus municipal school) was a statistically significant predictor of the difference in student grade (with a positive effect size of one half of a standard deviation). *The impact of increasing salaries on improving the performance of public servants*

deviation in student grade,  $\ln = 27.764$ ,  $SE = 6.509$ ). The authors of the paper concluded: ‘the rise in relative wages across municipalities within the public system brought about by the reform had a positive impact on the students’ proficiency’ (p. 671). We might be a little more hesitant around causality, since from Table 3.4, the research was not a randomised trial. Both municipal and state schools were part of the reform and the study’s comparison was of the efficacy of the two within the public school sector. Higher salary increases in state schools (36.4%) produced higher increases in grades than lower increases in municipal schools (35.7%). Perhaps this makes the authors note ‘that the relative increase in teachers’ wages increased the proficiency of students’ (p. 671). Crucially perhaps, there were no intervening variables measured. Without such variables, we do not know precisely why the observed effects were seen.

On balance however, the paper does show that higher wages imply higher proficiency after controlling for a number of other factors (student characteristics, teacher characteristics, parent/family characteristics, location/municipality characteristics). It also shows that changes in wages over time (1997-1999) are significantly associated with changes in student proficiency.

In the original protocol (Carr *et al.*, 2010a), we considered a range of quantitative and mixed synthesis methods to choose from, dependent on the nature of the evidence available for synthesis (Oliver *et al.*, 2005). As ultimately only one study met our inclusion criteria, no synthesis was necessary.

## CHAPTER FOUR

### Discussion

This is an interdisciplinary review on an interdisciplinary question conducted by a team with expertise and experience across a range of social sciences, using a rigorous and heavily quality-controlled, structured and pre-agreed protocol. As noted above, the inter-rater reliability of our assessments of the potentially eligible studies borders on ‘excellent’, according to the Kappa thresholds set by Robson (2002, p. 223). The most striking finding of our systematic review is the vast quantity of articles across many disciplines that discuss the issues we wished to address, but do so in an environment which is almost free of empirical evidence linking actual pay variation to actual work or service performance. To some extent, this may be due to studies using job satisfaction as a proxy for performance, which we argue is not sufficient, as demonstrated in Figure 1.1. In the case of judges, there is simply too little research at all, and none that focuses on pay and performance. Furthermore, as others have written, ‘a common finding from systematic reviews is that they reveal far fewer studies directly relevant to a given question than commonly assumed’ (Briner and Rousseau, 2011, p. 18). We have tried to overcome the paucity of the evidence base for the review by including some scrutiny of studies that are indirectly relevant and which provide learning opportunities for future research (Table 3.3).

Because of the rapid nature of this review and the limited resources available, it was not possible to delve deeper into all the studies that did not meet the eligibility criteria. Nevertheless, the methodological shortfalls in Table 3.3 are fixable. However, they remain ‘fatal flaws’, at least from the point of view of answering our specific research question. We have included them in this report in part to demonstrate the thoroughness of our appraisal of the vast number of studies retrieved by our deliberate use of wide-ranging, non-specific search terms (see Appendix 2.1), and to show that the vast number of retrieved records that were not eligible for the review were, as expected, completely irrelevant, rather than being nearly eligible but excluded because of overly restrictive inclusion criteria. As Tables 3.3 and 3.4 show, very few empirical studies have been done in this area. Overall, we are led to the following key implications.

#### 4.1 Editorial responsibility

Some believe that publishing has a social function, not least in low- and middle-income countries, where it could (arguably) be more closely aligned with local need and, as Marušić and Marušić (2001) have argued, harmonised to enhance research capacity. We suggest that journal editors in higher-income countries (where most of the material we identified was published) should be more restrictive about accepting purely descriptive reports about salary hardships. Largely descriptive studies, whilst being responsive to a sense of grievance and hardship, may inadvertently contribute towards a ‘know-do gap’ (Table 3.3, knowing how to do the work but not doing it as well due to being demotivated) in research (Markides, 2011, p. 113). They may also invite radical and quite possibly relatively risky (for some workers and some clients alike) interventions in performance-based pay (Kalk, Pau and Grabosch, 2010).

In that regard, the human resources for health crisis has focused researchers on the retention rather than the performance question, i.e., what are the factors that motivate health workers, and to some extent educationalists, to stay. The more recent emphasis on mid-level occupations and a concern about the quality of care they might provide has shifted the focus more on to actual performance, and especially, quality.

#### 4.2 Researcher responsibility

In order to solve this know-do gap, the methodological quality of research will need to be improved, and clearer recommendations for future research are needed (Brown *et al.*, 2006). As we have shown in Tables 3.3 and 3.4 above, it is possible to design studies that adequately evaluate performance-for-pay, eventually enabling fairer comparisons with pay-for-performance. Specifically, and even though the data may be hard to come by for ethical and practical reasons, we need to take measures of actual pay variation, not proxies such as rank or age, which can introduce confounding. Interventions can be nested in time, through the use of longitudinal designs. The pay variation needs to be capable of disaggregation from other variables, such as caregiver visits to school classrooms in decentralisation of education, or decentralised decision making by clinic management in health (Heywood and Harahap, 2009). Criterion variables need to be more rigorous and objective; for example, we did not come across any examples of direct (culturally competent/appropriate) performance appraisal, at either the individual or group level (Kruk and Freedman, 2008; USAID, 2006, p.12). Performance indicators are readily available, in both education (Alcázar *et al.*, 2006) and in health (Chan *et al.*, 2010; Das, Hammer and Leonard, 2008; Zachariah *et al.*, 2004), and across both sectors together (Barr, Lindelow and Serneels, 2003; Chaudhury *et al.*, 2006). The same applies to intervening variables like job satisfaction, organisational commitment and work engagement (Bennett *et al.*, 2001). These have been linked to performance in a range of health and education settings (Chen *et al.*, 2008; Coomber and Barriball, 2007; Leonard and Masatu, 2006).

#### 4.3 Policy-makers and managers in education and health organisations

Given the relative attention afforded to performance-based pay in the literature, including ethical risks in each system (Wharam *et al.*, 2008), we recommend that policy-makers and managers in organisations do not prematurely rule out the possibility of performance for pay (Krupp and Madhivanan, 2009), as there appears to be insufficient evidence to either support or refute its effectiveness. This would include decent pay for para-teachers (Lewin, 2002; Tooley and Dickson, 2006) and mid-level health cadres (Celletti *et al.*, 2010; Hermann *et al.*, 2009), who, as Tables 3.2 and 3.3 indicate, were not well represented in the substantive literature.

Surprisingly, the existing research does not appear to have been tested for basic mediating properties between pay variation and work performance (Figure 1.1). As we have seen from Table 3.4, the one study that did pass our appraisal stage did not include any intervening variables. From Figure 1.1, we do not know whether any intervening variables, such as B. Work Motivation, fully or partially mediate between pay variation and work performance for public servants in health and education, in low- and middle-income countries. Intervening variables are also helpful when interventions do not succeed, e.g., they may reveal that a salary increase was insufficient to raise motivation, or to reduce the need for dual incomes. Such an emphasis on theory building, on explaining why links are or are not observed, facilitates evidence-based practice. Likewise perhaps, motivation-hygiene theory (see Chapter 1) actually implies that links will be non-linear

rather than linear, necessitating a greater use of non-linear regression techniques (Ololube, 2006).

Comparisons with performance-based pay can, as we have seen, control for the amount of remuneration, as distinct from the basis on which remuneration is made (Table 3.3; Huntington *et al.*, 2010). Performance-based pay has potential to be aligned with local customs, for example ‘the traditional healer who offers health services on an outcome-contingent basis’ (Leonard and Zivin, 2005, p. 575). Nonetheless, ‘[f]inancial incentives are blunt instruments that must be monitored’ (McKee, 2000, p. 803). We have seen, for example, that naturally occurring changes to salaries can be systematically studied (Menezes-Filho and Pazello, 2007). Other opportunities may have been missed, for example in Malaŵi (Palmer, 2006) and Swaziland (Kober and Van Damme, 2006; for reviews, Vujicic, 2009; Vujicic *et al.*, 2009). To the extent that research has not yet evaluated the performance-for-pay policy-option (despite this being a commonly adopted strategy in many countries attempting to stem the brain drain), there is insufficient evidence to show either benefit or harm of fixed salary reform to enhance public servant motivation.

By logical extension, it might also be possible to strike an effective and socially just balance between performance-based pay and performance-for-pay, in one system. In higher education, for example, government performance management systems already allocate a proportion of institutional resources on the basis of quantity (research output), even though individual academics work largely for a fixed salary, with only some rewards, mostly indirect, for their own related outputs (Meyer and Evans, 2005). In the health sector, Chile has experimented with such a system at the school level (McMeekin, 2000), reportedly with little evidence that teachers focus too much of their energy on the rewards, to the detriment of other classes, activities or duties. Such ‘crowding out’ as a result of performance-based pay (e.g., all energy going into a health service for which performance is based on pay, to the detriment of other equally important services that do not use performance-based pay) has sometimes been reported in health (Kalk *et al.*, 2010). In China, randomised, controlled field experiments in primary health care are reportedly currently underway (Yip *et al.*, 2010). According to them, these studies ‘realign’ perverse incentive effects, e.g., over-prescription of drugs following earlier market reforms, by aggregating incentives at the organisation level (2010, p. 1127).

#### 4.4 Conclusion: research for development funders

The emphasis on evaluating quality in public service performance continues to grow (McNamara, 2005; Tillema, Mimba, and van Helden, 2010; Umar, Litaker and Terris, 2009). Against that backdrop, we found just one needle in the proverbial haystack, when evaluating performance-for-pay. We have seen above that potentially valuable opportunities to systematically track variations in work performance following naturalistic changes in pay in some lower-income countries, e.g., in Africa, may have been missed. The one study that was included was conducted in a middle-income country, Brazil.

What all of this means, in sum, is that the existing evidence base is inadequate to answer the research question asked at the very beginning of the systematic review: some theories of work motivation, specifically the more humanistic (such as motivation hygiene) as compared to behaviouristic theories (for example efficiency wages), suggest that salary is a necessary but not sufficient condition for work performance (Marchal and Kegels, 2007, p. 299). Indeed in the existing literature, salary variation is often just one element among (for example) training, career planning or mentoring (Ladd, 2007). Arguably there is often, as here, a sharp disconnect

between well (narrowly) focused academic research on the one hand, and highly complex contextual/cultural variations on the other. Yet if theory is right, then none of these interventions will work unless salary is at a minimum, decent (liveable, fair, just) level (UNDP, 2010, p. 12).

The finding that there was an extensive amount of existing research literature that was not sufficiently robust to answer the question for this review has resulted in the development of an outline for a study that would help to achieve such an answer. These ideas are based on the learning opportunities in Table 3.3, which highlights how some relatively obvious methodological improvements in the future would make the studies eligible for subsequent systematic reviews on the research question. Causality is perhaps the key issue. In keeping with advice on presenting the implications for research of systematic reviews more generally (Brown *et al.* 2006), we have set out the key features for such a study in Table 4.1. We hope to see such a study in the research landscape - soon.

**Table 4.1:** Some key design features to help answer the research question

Item	Operational definition
Establish and reduce risk of any harm (consequential validity)	Choose a code of ethics and ethical protocol. The latter must include all proposed measures on the generic checklist below. Methods themselves can be quantitative, qualitative or mixed, and preferably mixed, allowing for multiple perspective taking and possible triangulation of findings.
Population	<p>Representative sampling from countries (low- and middle-income); sectors (health and education); occupation (teachers at primary, secondary and tertiary levels; plus doctors, nursing staff and mid-level occupations, including community health workers and ‘para-teachers’); occupational ranks, including equal representation where possible from each gender; and organisations (schools and universities; urban and rural health facilities).</p> <p>The sample should be drawn from varying socioeconomic, geographical and cultural contexts to allow assessment of potential moderating factors (such as, relatively high- and low-income settings; existence of dual salary systems; cultural values for merit compared to need regarding distributive justice, gender equity, rural compared to urban settings and so on.</p> <p>We would recommend that such a study compares at least two sectors (perhaps health and education) and that it would be most useful to include a range of working groups in each of these sectors rather than limiting it to conventionally Western-trained professions.</p> <p>It would be important to explore remunerative issues broader than salary, but to build into the design the possibility of disaggregating effects.</p>
Establish a baseline (Time 1, pre-	Select and implement reliable (multi-item and triangulated) measures, either individual or group, of:

variation in salary)	<ul style="list-style-type: none"> <li>• Actual pay (converted to purchasing power parity in the case of cross-country comparisons).</li> <li>• Intervening variables, job satisfaction, work justice, organisational commitment, turnover and mobility intentions. These should be free of construct, item and method biases (verified before and after the study, i.e., in situ, including each country in cross-national studies). They can be unstructured, if demonstrably reliable, and sampled representatively from the focal population (for some potential examples, see Field, 2002).</li> <li>• Work performance, e.g., teacher attendance, student grades; or health worker attendance, can-do gaps, numbers of patients seen (Table 3.3). Subjective reports should be verified by objective measures, for example attendance records.</li> <li>• Control variables (e.g., human capital and demographic variables, including purchasing power, personal and cultural values such as belief in hierarchy, materialism and collective/individual responsibility).</li> <li>• Nesting factors such as country, region, district, school, clinic/hospital, occupation, job and sector).</li> </ul>
Pay variation introduced	<p>Either: a randomised trial comparing intervention with a non-intervention control (ethically challenging and potentially confounding with social inequity, given that the intervention is a pay increase); or a controlled before and after (CBA) study in the same population.</p> <p>All factors apart from payment held constant (no confounding with performance-based pay, although a comparison with performance-based pay would be possible by varying the system of payment, with the budget held constant); or other impact-laden variables, such as classroom visits by students' parents (Table 3.3).</p>
Re-measurement (Time 2, post-randomisation in a randomised trial or after variation in salary in CBA study)	<p>Measures:</p> <ul style="list-style-type: none"> <li>• actual pay</li> <li>• intervening variables (such as job satisfaction)</li> <li>• work performance (in the target job)</li> <li>• other work activity.</li> </ul> <p>We recommend multiple repeated measures, to enhance reliability through the analysis of covariance between predictor and criterion variables, over time. We suggest a five-year project period, with follow-ups, post-baseline and intervention, at two years and four years).</p>
Analyse	<p>Test using quantitative, qualitative or mixed methods to examine, for example:</p> <ul style="list-style-type: none"> <li>• levels of analysis (e.g., using intra-class correlation)</li> <li>• performance increments as a function of variation in pay</li> <li>• controlling for/modelling level for different levels in the data , such as (in education), classroom, school, district, and (in</li> </ul>

	<p>health), urban/rural, clinic/hospital, etc.</p> <ul style="list-style-type: none"> <li>• mediation by variations in intervening variables such as job satisfaction and work justice</li> <li>• moderation by local factors such as purchasing power and sector (education, healthcare, etc.).</li> </ul>
Synthesise	<p>Use a function/effect size correlation relating pay variation to work performance to estimate the utility of any particular salary increment. Utility = predicted performance gain per proposed increase in salary.</p> <p>Prediction: a curvilinear function: wage efficiency will be greater in lower-income settings, where pay increases can reduce demotivation more. As pay increases, asymptote will be reached, with intrinsic variables becoming comparatively salient. At that point, intervention packages involving non-pecuniary elements will be more efficacious than pecuniary incentives alone.</p>

## CHAPTER FIVE

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## Appendix 1.1: Authorship of this report

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## Appendix 2.1: Search strategy for electronic databases

### Initial search strategy for electronic databases

At the outset, we have no plans to apply publication year limits to our searches. However, this might be necessary for feasibility and efficiency. If we do apply time limits, our focus will be on the more recent literature (Jenkins *et al.*, 1998 reports that pre-1960 studies lacked rigor), with the post-1960 'year-of-study' recorded as a precautionary potential moderator. Our preliminary work, which informed the discussion provided above, has identified that although the question might appear to be narrowly focused on the surface, the literature itself is both complex and open. In systematic reviews of this nature, it is wise to rely on a combination of both formal (protocol-driven) and informal search strategies, such as 'snowballing,' i.e., backward reference tracking and forward citation tracking (Greenhalgh and Peacock, 2005). The starting point for the search, however, will be a structured search which will be undertaken by the UK Cochrane Centre.

Search terms: We will use the following elements to conduct abstract and full-text searches of Business Source Complete, and PsycINFO (below). This will be finalised in consultation with the information specialist at the UK Cochrane Centre, and will be adapted for other databases:

### Broad strategy for search terms

Antecedent terms (each block linked with OR)	Mediator terms (Post hoc coding only)	Performance terms (linked with OR)
Pay* Remuneration Salar* Benefits Incentive* Financial Money Monetary OR Reward* OR Wage*	Motivation Satisfaction Commitment Efficacy Engagement Citizenship Initiative	Task performance Work performance Performance
AND		
Change* Increase* Rise* Augmentation* Growth*		
AND		
Low* income		

Middle income Developing countr* Developing nation* Third World		
AND		
Teacher OR Doctor OR Nurse OR Cadre OR Judge		

Related thesaurus terms will also be used, e.g., ‘least developed countr\*’.

Meta-search term: Antecedents AND Performance terms, all possible combinations

### Final search strategy

Studies in this review were identified by searching a range of medical, nursing, psychological and sociological literature databases. The search strategies were not limited by language. Searches were undertaken for the date range 2000-2010, the last searches were carried out on December 17 2010.

A basic search strategy was designed to retrieve the following facets in combination:

Intervention (Pay/wage/incentive)

AND

Outcome (change in behaviour)

AND

Population (teacher/medical staff/judiciary)

AND

Population (developing countries)

### Terminology

The terms for the search strategies were identified through discussion between an information specialist and the research team, by scanning the background literature, and by browsing the MEDLINE thesaurus (MeSH).

Search strategies were developed specifically for each database. Details of the search strategies and results are listed below.

## The database searches

### CINAHL

Searched 17 November 2010

- 01 Income [word in major subject heading] (1317)
- 02 (Salar\* or wage\* or incentiv\* or pay\* or remunerat\* or money or monetary or reward\* or pecuniar\* or nonpecuniar\* or financ\* or bonus or bonuses or pension\* or retirement fund\* or fee or fees or capita\* or reimburs\*) [in all text] (109,703)
- 03 (financ\* and (incentive\* or perk\* or benefit\*)) [in all text] (5428)
- 04 per diem\* [in all text] (256)
- 05 (flexitime or over-time or flexi-time or overtime) [in all text] (15,149)
- 06 (Performance and (pay\* or bonus\* or award or awards) [in all text] (3228)
  
- 07 (Chang\* or increas\* or rise\* or rising or rose or rais\* or augment\* or growth\* or grow\* or grew or improv\* or gain\* or motivat\* or promot\* or encourag\* or enhanc\* or boost\* or achiev\* or success\* or succeed\* or accomplish\* or thrive\* or thriving or achiev\* or attain\*) [in all text] (641,723)
  
- 08 Faculty [word in major subject heading] (9124)
- 09 health personnel [word in major subject heading] (18,133)
- 10 Nursing [word in major subject heading] (252,724)
- 11 government [word in major subject heading] (9821)
- 12 (public and (sector\* or service\* or servant\* or employ\* or worker\* or job or jobs or personnel or staff\*)) [in all text] (77,555)
- 13 ((government\* or civil or council) and (sector\* or service\* or servant\* or employ\* or worker\* or job or jobs or personnel or staff\*)) [in all text] (34,346)
- 14 (profession\* and allied and medicine) [in all text] (7164)
- 15 (teacher\* or educator\* or tutor\* or lecturer\*) [in all text] (50,341)
- 16 (school\* and (worker\* or personnel or employ\* or job or jobs or staff\*)) [in all text] (33,301)
- 17 social worker\* [in all text] (9143)
- 18 (teach\* and (aide\* or assistant\*)) [in all text] (4110)
- 19 (classroom and (aide\* or assistant\* or personnel or staff\*)) [in all text] (1032)
- 20 (nursing or nurse or nurses or matron or matrons or auxillary or auxillaries or midwi\*) [in all text] (848,221)
- 21 (judge or judges or judicial\* or judiciary or cadre or cadres or magistrat\*) [in all text] (3613)
- 22 (doctor\* or physician\* or consultant\* or surgeon\* or registrar\* or medic or medics) [in all text] (179,548)

- 23 (specialist\* or paediatrician\* or pediatrician\* or anaesethetist\* or anesethetist\*) [in all text] (35,331)
- 24 GP [in all text] (7111)
- 25 ((general or family) and practit\*) [in all text] (14,972)
- 26 (Clinician\* or practitioner\* or Pharmacist\* or paramedic\*) [in all text] (103,127)
- 27 ((hospital\* or health or surg\* or medical) and (personnel\* or employ\* or worker\* or job or jobs or team\* or staff\*)) [in all text] (229,122)
- 28 Developing Countries [word in major subject heading] (2451)
- 29 Africa [word in major subject heading] (4757)
- 30 India [word in major subject heading] (2369)
- 31 South America [word in major subject heading] (47)
- 32 ((underdeveloped or under-developed or developing) and (econom\* or countr\* or nation\*)) [in all text] (17,449)
- 33 (less and developed and (econom\* or countr\* or nation\*)) [in all text] (2491)
- 34 (low\* income\* and (countr\* or nation\* or econom\*)) [in all text] (3614)
- 35 (middle\* income\* and (countr\* or nation\* or econom\*)) [in all text] (551)
- 36 third world [in all text] (361)
- 37 3rd world [in all text] (10)
- 38 emerg\* econom\* [in all text] (1555)
- 39 (lmic or lmics) [in all text] (17)
- 40 28 or 29 or 30 or 31 or 32 or 33 or 34 or 35 or 36 or 37 or 38 or 39 (30,760)
- 41 08 or 09 or 10 or 11 or 12 or 13 or 14 or 15 or 16 or 17 or 18 or 19 or 20 or 21 or 22 or 23 or 24 or 25 or 26 or 27 (1,164,747)
- 42 01 or 02 or 03 or 04 or 05 or 06 (124,623)
- 43 07 and 40 and 41 and 42 (3215)
- MEDLINE (OvidSP): 2000-2010/11/wk 3*
- Searched 2 December 2010
- 1 exp Income/ (43790)
- 2 Employee Incentive Plans/ (1437)
- 3 Physician Incentive Plans/ (1843)
- 4 exp Holidays/ (1838)

- 5 (Salar\$ or wage\$ or incentiv\$ or pay\$ or remunerat\$ or money or monetary or reward\$ or pecuniar\$ or nonpecuniar\$ or financ\$ or bonus or bonuses or pension\$ or retirement fund\$ or fee or fees or capita\$ or reimburs\$).ti,ab,ot,hw. (246844)
- 6 (financ\$ adj4 (incentive\$ or perk\$ or benefit\$)).ti,ab,ot,hw. (2797)
- 7 (PBP or per diem\$).ti,ab,ot. (2015)
- 8 ((work\$ or job or jobs or employ\$) adj3 life adj3 balanc\$).ti,ab,ot,hw. (214)
- 9 ((work\$ or job or jobs or employ\$) adj3 famil\$ adj3 balanc\$).ti,ab,ot,hw. (105)
- 10 ((work\$ or job or jobs or employ\$) adj3 home\$ adj3 balanc\$).ti,ab,ot,hw. (42)
- 11 (flexitime or over-time or flexi-time or overtime).ti,ab,ot,hw. (72591)
- 12 (session\$ adj4 payment\$).ti,ab,ot,hw. (2)
- 13 (Performance adj4 (pay\$ or bonus\$ or award or awards)).ti,ab,ot,hw. (1147)
- 14 (flexi\$ adj3 (employ\$ or job\$ or work\$ or leave\$ or time-off)).ti,ab,ot,hw. (1034)
- 15 (work\$ adj3 condition\$).ti,ab,ot,hw. (9839)
- 16 (sitting adj4 (allowance\$ or benefit\$ or pay\$ or expense\$)).ti,ab,ot,hw. (13)
- 17 (travel\$ adj4 (allowance\$ or benefit\$ or pay\$ or expense\$)).ti,ab,ot,hw. (242)
- 18 ((education\$ or development\$) adj4 (grant\$ or fund\$ or opportunit\$ or aid\$)).ti,ab,ot,hw. (14963)
- 19 CPD.ti,ab,ot. (2614)
- 20 (continu\$ adj3 professional adj3 develop\$).ti,ab,ot,hw. (848)
- 21 (career\$ adj4 (develop\$ or progress\$ or opportunit\$ or reward\$)).ti,ab,ot,hw. (2218)
- 22 ((Work\$ or employ\$ or job or jobs or staff\$ or profession\$) adj4 supervis\$).ti,ab,ot,hw. (2760)
- 23 ((financial\$ or pecuniary or nonpecuniary or staff\$ or work\$ or job or jobs or employ\$ or career\$ or profession\$ or educat\$ or organi?at\$) adj4 benefit\$).ti,ab,ot. (7328)
- 24 ((medical\$ or sick\$ or illness\$ or ill-health\$ or illhealth\$ or absen\$) adj4 (leav\$ or time-off)).ti,ab,ot,hw. (5112)
- 25 ((maternity or paternity or parent\$ or domestic\$ or famil\$) adj4 (leav\$ or time-off)).ti,ab,ot,hw. (1563)
- 26 ((annual or holiday\$ or vacation\$) adj4 (leav\$ or time-off)).ti,ab,ot,hw. (135)
- 27 holiday\$.ti,ab,ot,hw. (4004)
- 28 or/1-27 (379307)
- 29 ((Behav\$ or organi?ation\$) adj4 (modif\$ or motivat\$)).ti,ab,ot,hw. (11826)
- 30 (performance\$ adj4 (improv\$ or manag\$ or modif\$ or enhanc\$ or upgrad\$)).ti,ab,ot,hw. (34888)
- 31 (Chang\$ or increas\$ or rise\$ or rising or rose or rais\$ or augment\$ or growth\$ or grow\$ or grew or improv\$ or gain\$ or motivat\$ or promot\$ or encourag\$ or enhanc\$ or boost\$ or achiev\$ or

- success\$ or succeed\$ or accomplish\$ or thrive\$ or thriving or achiev\$ or attain\$).ti,ab,ot.  
(6347555)
- 32 or/29-31 (6351466)
- 33 Health Manpower/ (10570)
- 34 exp health personnel/ (318705)
- 35 Local Government/ (1875)
- 36 exp Patient Care Team/ (46708)
- 37 Government Agencies/ (11701)
- 38 (public adj3 (sector\$ or service\$ or servant\$ or employ\$ or worker\$ or job or jobs or personnel  
or staff\$ or workforce\$ or work force\$ or manpower\$)).ti,ab,ot,hw. (20474)
- 39 ((government\$ or civil or council) adj3 (sector\$ or service\$ or servant\$ or employ\$ or worker\$  
or job or jobs or personnel or staff\$ or workforce\$ or work force\$ or manpower\$)).ti,ab,ot,hw.  
(3940)
- 40 (pam or pams).ti,ab,ot. (3470)
- 41 (profession\$ adj3 allied adj3 medicine).ti,ab,ot,hw. (65)
- 42 (teacher\$ or educator\$ or tutor\$ or lecturer\$).ti,ab,ot,hw. (40803)
- 43 (school\$ adj3 (worker\$ or personnel or employ\$ or job or jobs or staff\$ or workforce\$ or work  
force\$ or manpower\$)).ti,ab,ot,hw. (2359)
- 44 social worker\$.ti,ab,ot,hw. (5656)
- 45 (teach\$ adj3 (aide\$ or assistant\$)).ti,ab,ot,hw. (236)
- 46 (classroom adj3 (aide\$ or assistant\$ or personnel or staff\$)).ti,ab,ot,hw. (46)
- 47 (nursing or nurse or nurses or matron or matrons or auxillary or auxillaries or  
midwi\$).ti,ab,ot,hw. (485952)
- 48 (judge or judges or judicial\$ or judiciary or cadre or cadres or magistrat\$).ti,ab,ot,hw. (17396)
- 49 (doctor\$ or physician\$ or consultant\$ or surgeon\$ or registrar\$ or medic or  
medics).ti,ab,ot,hw. (481375)
- 50 (specialist\$ or p?ediatrician\$ or an?sethetist\$).ti,ab,ot,hw. (56716)
- 51 GP.ti,ab,ot. (21260)
- 52 (general adj2 pract\$).ti,ab,ot,hw. (58661)
- 53 (Clinician\$ or practitioner\$ or Pharmacist\$ or paramedic\$).ti,ab,ot,hw. (197342)
- 54 ((hospital\$ or health or surg\$ or medical) adj4 (personnel\$ or employ\$ or worker\$ or job or  
jobs or team\$ or staff\$ or workforce\$ or work force\$ or manpower\$)).ti,ab,ot,hw. (241889)
- 55 or/33-54 (1372692)
- 56 Developing Countries/ (55319)
- 57 Medically Underserved Area/ (4712)
- 58 exp Africa/ (151188)

- 59 asia/ or exp asia, central/ or exp asia, southeastern/ or exp asia, western/ or exp far east/ or exp china/ or korea/ or mongolia/ or taiwan/ (386187)
- 60 exp South America/ (77051)
- 61 exp central america/ or latin america/ or mexico/ (37955)
- 62 exp 'Commonwealth of Independent States'/ (61647)
- 63 exp Pacific Islands/ (39061)
- 64 exp Indian Ocean Islands/ (3300)
- 65 (south america\$ or venezuela\$ or colombia\$ or ecuador\$ or peru or peruvian\$ or brazil\$).ti,ab,ot. (62606)
- 66 (bolivia\$ or paraguay\$ or chile or chilean\$ or uruguay\$ or argentin\$ or guyana\$ or french guiana\$).ti,ab,ot. (20123)
- 67 (suriname\$ or central america\$ or belize\$ or costa rica\$ or el salvador\$ or guatemala\$ or honduras or honduran\$).ti,ab,ot. (8484)
- 68 (nicaragua\$ or panama\$ or africa\$ or nigeria\$ or mozambique or somalia\$ or rwanda\$ or tanzania\$ or uganda\$ or zambia\$ or angola\$).ti,ab,ot. (136218)
- 69 (cameroon\$ or congo or congan or botswana\$ or lesotho\$ or zimbabwe\$ or namibia\$ or swaziland\$ or benin or burkino faso).ti,ab,ot. (15212)
- 70 (gambia\$ or ghana\$ or senegal\$ or liberia\$ or sierra leone).ti,ab,ot. (13827)
- 71 ((underdeveloped or under-developed or developing) adj4 (econom\$ or countr\$ or nation\$ or health system\$)).ti,ab,ot,hw. (73940)
- 72 (less adj1 developed adj4 (econom\$ or countr\$ or nation\$ or health system\$)).ti,ab,ot,hw. (948)
- 73 (low\$ income\$ adj3 (countr\$ or nation\$ or econom\$)).ti,ab,ot,hw. (1513)
- 74 (middle\$ income\$ adj3 (countr\$ or nation\$ or econom\$)).ti,ab,ot,hw. (1254)
- 75 third world.ti,ab,ot,hw. (2507)
- 76 3rd world.ti,ab,ot,hw. (203)
- 77 emerg\$ econom\$.ti,ab,ot,hw. (82)
- 78 (lmic or lmics).ti,ot,ab. (67)
- 79 (medically underserved adj3 (area\$ or region\$ or countr\$ or nation\$)).ti,ab,ot,hw. (4782)
- 80 ((doctor\$ or nurs\$ or medic\$ or physician\$ or midwi\$ or hospital\$) adj4 shortage adj2 (area\$ or region\$ or countr\$ or nation\$)).ti,ab,ot,hw. (150)
- 81 or/56-80 (854518)
- 82 28 and 32 and 55 and 81 (8236)
- 83 animals/ not (animals/ and humans/) (3521849)
- 84 82 not 83 (8225)
- 85 limit 84 to yr='2000 -Current' (4350)

*MEDLINE In-Process Citations and Daily Update (OvidSP): 2000-2010/11/24*

Searched 2 December 2010

1 exp Income/ (24)

2 Employee Incentive Plans/ (1)

3 Physician Incentive Plans/ (0)

4 exp Holidays/ (1)

5 (Salar\$ or wage\$ or incentiv\$ or pay\$ or remunerat\$ or money or monetary or reward\$ or pecuniar\$ or nonpecuniar\$ or financ\$ or bonus or bonuses or pension\$ or retirement fund\$ or fee or fees or capita\$ or reimburs\$).ti,ab,ot,hw. (8665)

6 (financ\$ adj4 (incentive\$ or perk\$ or benefit\$)).ti,ab,ot,hw. (143)

7 (PBP or per diem\$).ti,ab,ot. (44)

8 ((work\$ or job or jobs or employ\$) adj3 life adj3 balanc\$).ti,ab,ot,hw. (24)

9 ((work\$ or job or jobs or employ\$) adj3 famil\$ adj3 balanc\$).ti,ab,ot,hw. (8)

10 ((work\$ or job or jobs or employ\$) adj3 home\$ adj3 balanc\$).ti,ab,ot,hw. (3)

11 (flexitime or over-time or flexi-time or overtime).ti,ab,ot,hw. (4051)

12 (session\$ adj4 payment\$).ti,ab,ot,hw. (2)

13 (Performance adj4 (pay\$ or bonus\$ or award or awards)).ti,ab,ot,hw. (67)

14 (flexi\$ adj3 (employ\$ or job\$ or work\$ or leave\$ or time-off)).ti,ab,ot,hw. (94)

15 (work\$ adj3 condition\$).ti,ab,ot,hw. (618)

16 (sitting adj4 (allowance\$ or benefit\$ or pay\$ or expense\$)).ti,ab,ot,hw. (0)

17 (travel\$ adj4 (allowance\$ or benefit\$ or pay\$ or expense\$)).ti,ab,ot,hw. (14)

18 ((education\$ or development\$) adj4 (grant\$ or fund\$ or opportunit\$ or aid\$)).ti,ab,ot,hw. (845)

19 CPD.ti,ab,ot. (111)

20 (continu\$ adj3 professional adj3 develop\$).ti,ab,ot,hw. (63)

21 (career\$ adj4 (develop\$ or progress\$ or opportunit\$ or reward\$)).ti,ab,ot,hw. (95)

22 ((Work\$ or employ\$ or job or jobs or staff\$ or profession\$) adj4 supervis\$).ti,ab,ot,hw. (143)

23 ((financial\$ or pecuniary or nonpecuniary or staff\$ or work\$ or job or jobs or employ\$ or career\$ or profession\$ or educat\$ or organi?at\$) adj4 benefit\$).ti,ab,ot. (355)

24 ((medical\$ or sick\$ or illness\$ or ill-health\$ or illhealth\$ or absen\$) adj4 (leav\$ or time-off)).ti,ab,ot,hw. (159)

25 ((maternity or paternity or parent\$ or domestic\$ or famil\$) adj4 (leav\$ or time-off)).ti,ab,ot,hw. (47)

26 ((annual or holiday\$ or vacation\$) adj4 (leav\$ or time-off)).ti,ab,ot,hw. (9)

27 holiday\$.ti,ab,ot,hw. (100)

- 28 or/1-27 (14902)
- 29 ((Behav\$ or organi?ation\$) adj4 (modif\$ or motivat\$)).ti,ab,ot,hw. (630)
- 30 (performance\$ adj4 (improv\$ or manag\$ or modif\$ or enhanc\$ or upgrad\$)).ti,ab,ot,hw. (3705)
- 31 (Chang\$ or increas\$ or rise\$ or rising or rose or rais\$ or augment\$ or growth\$ or grow\$ or grew or improv\$ or gain\$ or motivat\$ or promot\$ or encourag\$ or enhanc\$ or boost\$ or achiev\$ or success\$ or succeed\$ or accomplish\$ or thrive\$ or thriving or achiev\$ or attain\$).ti,ab,ot. (355162)
- 32 or/29-31 (355371)
- 33 Health Manpower/ (6)
- 34 exp health personnel/ (230)
- 35 Local Government/ (2)
- 36 exp Patient Care Team/ (45)
- 37 Government Agencies/ (9)
- 38 (public adj3 (sector\$ or service\$ or servant\$ or employ\$ or worker\$ or job or jobs or personnel or staff\$ or workforce\$ or work force\$ or manpower\$)).ti,ab,ot,hw. (796)
- 39 ((government\$ or civil or council) adj3 (sector\$ or service\$ or servant\$ or employ\$ or worker\$ or job or jobs or personnel or staff\$ or workforce\$ or work force\$ or manpower\$)).ti,ab,ot,hw. (228)
- 40 (pam or pams).ti,ab,ot. (164)
- 41 (profession\$ adj3 allied adj3 medicine).ti,ab,ot,hw. (4)
- 42 (teacher\$ or educator\$ or tutor\$ or lecturer\$).ti,ab,ot,hw. (2427)
- 43 (school\$ adj3 (worker\$ or personnel or employ\$ or job or jobs or staff\$ or workforce\$ or work force\$ or manpower\$)).ti,ab,ot,hw. (98)
- 44 social worker\$.ti,ab,ot,hw. (184)
- 45 (teach\$ adj3 (aide\$ or assistant\$)).ti,ab,ot,hw. (16)
- 46 (classroom adj3 (aide\$ or assistant\$ or personnel or staff\$)).ti,ab,ot,hw. (1)
- 47 (nursing or nurse or nurses or matron or matrons or auxillary or auxillaries or midwi\$).ti,ab,ot,hw. (6827)
- 48 (judge or judges or judicial\$ or judiciary or cadre or cadres or magistrat\$).ti,ab,ot,hw. (615)
- 49 (doctor\$ or physician\$ or consultant\$ or surgeon\$ or registrar\$ or medic or medics).ti,ab,ot,hw. (16625)
- 50 (specialist\$ or p?ediatrician\$ or an?sethetist\$).ti,ab,ot,hw. (2634)
- 51 GP.ti,ab,ot. (867)
- 52 (general adj2 pract\$).ti,ab,ot,hw. (1807)
- 53 (Clinician\$ or practitioner\$ or Pharmacist\$ or paramedic\$).ti,ab,ot,hw. (8874)

- 54 ((hospital\$ or health or surg\$ or medical) adj4 (personnel\$ or employ\$ or worker\$ or job or jobs or team\$ or staff\$ or workforce\$ or work force\$ or manpower\$)).ti,ab,ot,hw. (3536)
- 55 or/33-54 (37090)
- 56 Developing Countries/ (36)
- 57 Medically Underserved Area/ (14)
- 58 exp Africa/ (182)
- 59 asia/ or exp asia, central/ or exp asia, southeastern/ or exp asia, western/ or exp far east/ or exp china/ or korea/ or mongolia/ or taiwan/ (539)
- 60 exp South America/ (188)
- 61 exp central america/ or latin america/ or mexico/ (59)
- 62 exp 'Commonwealth of Independent States'/ (26)
- 63 exp Pacific Islands/ (19)
- 64 exp Indian Ocean Islands/ (3)
- 65 (south america\$ or venezuela\$ or colombia\$ or ecuador\$ or peru or peruvian\$ or brazil\$).ti,ab,ot. (3683)
- 66 (bolivia\$ or paraguay\$ or chile or chilean\$ or uruguay\$ or argentin\$ or guayana\$ or french guiana\$).ti,ab,ot. (953)
- 67 (suriname\$ or central america\$ or belize\$ or costa rica\$ or el salvador\$ or guatemala\$ or honduras or honduran\$).ti,ab,ot. (388)
- 68 (nicaragua\$ or panama\$ or africa\$ or nigeria\$ or mozambique or somalia\$ or rwanda\$ or tanzania\$ or uganda\$ or zambia\$ or angola\$).ti,ab,ot. (6236)
- 69 (cameroon\$ or congo or congan or botswana\$ or lesotho\$ or zimbabwe\$ or namibia\$ or swaziland\$ or benin or burkino faso).ti,ab,ot. (643)
- 70 (gambia\$ or ghana\$ or senegal\$ or liberia\$ or sierra leone).ti,ab,ot. (515)
- 71 ((underdeveloped or under-developed or developing) adj4 (econom\$ or countr\$ or nation\$ or health system\$)).ti,ab,ot,hw. (1672)
- 72 (less adj1 developed adj4 (econom\$ or countr\$ or nation\$ or health system\$)).ti,ab,ot,hw. (47)
- 73 (low\$ income\$ adj3 (countr\$ or nation\$ or econom\$)).ti,ab,ot,hw. (158)
- 74 (middle\$ income\$ adj3 (countr\$ or nation\$ or econom\$)).ti,ab,ot,hw. (200)
- 75 third world.ti,ab,ot,hw. (82)
- 76 3rd world.ti,ab,ot,hw. (2)
- 77 emerg\$ econom\$.ti,ab,ot,hw. (14)
- 78 (lmic or lmics).ti,ot,ab. (28)
- 79 (medically underserved adj3 (area\$ or region\$ or countr\$ or nation\$)).ti,ab,ot,hw. (23)

80 ((doctor\$ or nurs\$ or medic\$ or physician\$ or midwi\$ or hospital\$) adj4 shortage adj2 (area\$ or region\$ or countr\$ or nation\$)).ti,ab,ot,hw. (0)

81 or/56-80 (13822)

82 28 and 32 and 55 and 81 (190)

83 animals/ not (animals/ and humans/) (2143)

84 82 not 83 (190)

85 limit 84 to yr='2000 -Current' (179)

*EMBASE(OvidSP): 2000-2010/wk 49*

Searched 15 December 2010

1 exp Income/ (44576)

2 (Salar\$ or wage\$ or incentiv\$ or pay\$ or remunerat\$ or money or monetary or reward\$ or pecuniar\$ or nonpecuniar\$ or financ\$ or bonus or bonuses or pension\$ or retirement fund\$ or fee or fees or capita\$ or reimburs\$).ti,ab,ot,hw. (328378)

3 (financ\$ adj4 (incentive\$ or perk\$ or benefit\$)).ti,ab,ot,hw. (3284)

4 (PBP or per diem\$).ti,ab,ot. (2188)

5 ((work\$ or job or jobs or employ\$) adj3 life adj3 balanc\$).ti,ab,ot,hw. (258)

6 ((work\$ or job or jobs or employ\$) adj3 famil\$ adj3 balanc\$).ti,ab,ot,hw. (133)

7 ((work\$ or job or jobs or employ\$) adj3 home\$ adj3 balanc\$).ti,ab,ot,hw. (58)

8 (flexitime or over-time or flexi-time or overtime).ti,ab,ot,hw. (84023)

9 (session\$ adj4 payment\$).ti,ab,ot,hw. (4)

10 (Performance adj4 (pay\$ or bonus\$ or award or awards)).ti,ab,ot,hw. (1339)

11 (flexi\$ adj3 (employ\$ or job\$ or work\$ or leave\$ or time-off)).ti,ab,ot,hw. (1263)

12 (work\$ adj3 condition\$).ti,ab,ot,hw. (11959)

13 (sitting adj4 (allowance\$ or benefit\$ or pay\$ or expense\$)).ti,ab,ot,hw. (14)

14 (travel\$ adj4 (allowance\$ or benefit\$ or pay\$ or expense\$)).ti,ab,ot,hw. (282)

15 ((education\$ or development\$) adj4 (grant\$ or fund\$ or opportunit\$ or aid\$)).ti,ab,ot,hw. (16459)

16 CPD.ti,ab,ot. (3232)

17 (continu\$ adj3 professional adj3 develop\$).ti,ab,ot,hw. (1269)

18 (career\$ adj4 (develop\$ or progress\$ or opportunit\$ or reward\$)).ti,ab,ot,hw. (2609)

19 ((Work\$ or employ\$ or job or jobs or staff\$ or profession\$) adj4 supervis\$).ti,ab,ot,hw. (3307)

20 ((financial\$ or pecuniary or nonpecuniary or staff\$ or work\$ or job or jobs or employ\$ or career\$ or profession\$ or educat\$ or organi?at\$) adj4 benefit\$).ti,ab,ot. (8532)

21 ((medical\$ or sick\$ or illness\$ or ill-health\$ or illhealth\$ or absen\$) adj4 (leav\$ or time-off)).ti,ab,ot,hw. (4935)

- 22 ((maternity or paternity or parent\$ or domestic\$ or famil\$) adj4 (leav\$ or time-off)).ti,ab,ot,hw. (1455)
- 23 ((annual or holiday\$ or vacation\$) adj4 (leav\$ or time-off)).ti,ab,ot,hw. (149)
- 24 holiday\$.ti,ab,ot,hw. (3467)
- 25 or/1-24 (477305)
- 26 ((Behav\$ or organi?ation\$) adj4 (modif\$ or motivat\$)).ti,ab,ot,hw. (18115)
- 27 (performance\$ adj4 (improv\$ or manag\$ or modif\$ or enhanc\$ or upgrad\$)).ti,ab,ot,hw. (41924)
- 28 (Chang\$ or increas\$ or rise\$ or rising or rose or rais\$ or augment\$ or growth\$ or grow\$ or grew or improv\$ or gain\$ or motivat\$ or promot\$ or encourag\$ or enhanc\$ or boost\$ or achiev\$ or success\$ or succeed\$ or accomplish\$ or thrive\$ or thriving or achiev\$ or attain\$).ti,ab,ot. (7174269)
- 29 or/26-28 (7180541)
- 30 health care manpower/ (9074)
- 31 exp health care personnel/ (609472)
- 32 government/ (89962)
- 33 (public adj3 (sector\$ or service\$ or servant\$ or employ\$ or worker\$ or job or jobs or personnel or staff\$ or workforce\$ or work force\$ or manpower\$)).ti,ab,ot,hw. (59366)
- 34 ((government\$ or civil or council) adj3 (sector\$ or service\$ or servant\$ or employ\$ or worker\$ or job or jobs or personnel or staff\$ or workforce\$ or work force\$ or manpower\$)).ti,ab,ot,hw. (4150)
- 35 (pam or pams).ti,ab,ot. (3677)
- 36 (profession\$ adj3 allied adj3 medicine).ti,ab,ot,hw. (95)
- 37 (teacher\$ or educator\$ or tutor\$ or lecturer\$).ti,ab,ot,hw. (52602)
- 38 (school\$ adj3 (worker\$ or personnel or employ\$ or job or jobs or staff\$ or workforce\$ or work force\$ or manpower\$)).ti,ab,ot,hw. (2662)
- 39 social worker\$.ti,ab,ot,hw. (7757)
- 40 (teach\$ adj3 (aide\$ or assistant\$)).ti,ab,ot,hw. (291)
- 41 (classroom adj3 (aide\$ or assistant\$ or personnel or staff\$)).ti,ab,ot,hw. (59)
- 42 (nursing or nurse or nurses or matron or matrons or auxillary or auxillaries or midwi\$).ti,ab,ot,hw. (519446)
- 43 (judge or judges or judicial\$ or judiciary or cadre or cadres or magistrat\$).ti,ab,ot,hw. (17535)
- 44 (doctor\$ or physician\$ or consultant\$ or surgeon\$ or registrar\$ or medic or medics).ti,ab,ot,hw. (591005)
- 45 (specialist\$ or p?ediatrician\$ or an?sethetist\$).ti,ab,ot,hw. (102788)
- 46 GP.ti,ab,ot. (26095)
- 47 (general adj2 pract\$).ti,ab,ot,hw. (120189)

- 48 (Clinician\$ or practitioner\$ or Pharmacist\$ or paramedic\$).ti,ab,ot,hw. (297994)
- 49 ((hospital\$ or health or surg\$ or medical) adj4 (personnel\$ or employ\$ or worker\$ or job or jobs or team\$ or staff\$ or workforce\$ or work force\$ or manpower\$)).ti,ab,ot,hw. (230750)
- 50 or/30-49 (1747901)
- 51 developing country/ (64384)
- 52 exp Africa/ (159642)
- 53 Asia/ or Far-East/ or China/ or exp Korea/ or exp Southeast-Asia/ or Taiwan/ or Kazakhstan/ or Kyrgyzstan/ or exp South-Asia/ or Tajikistan/ or Turkmenistan/ or Uzbekistan/ (266481)
- 54 exp South America/ (85669)
- 55 exp central america/ (12690)
- 56 exp Central America/ (12690)
- 57 Mexico/ (24385)
- 58 exp USSR/ (110725)
- 59 exp Pacific islands/ (22473)
- 60 exp Indian Ocean/ (1865)
- 61 (south america\$ or venezuela\$ or colombia\$ or ecuador\$ or peru or peruvian\$ or brazil\$).ti,ab,ot. (73565)
- 62 (bolivia\$ or paraguay\$ or chile or chilean\$ or uruguay\$ or argentin\$ or guyana\$ or french guiana\$).ti,ab,ot. (23056)
- 63 (suriname\$ or central america\$ or belize\$ or costa rica\$ or el salvador\$ or guatemala\$ or honduras or honduran\$).ti,ab,ot. (8645)
- 64 (nicaragua\$ or panama\$ or africa\$ or nigeria\$ or mozambique or somalia\$ or rwanda\$ or tanzania\$ or uganda\$ or zambia\$ or angola\$).ti,ab,ot. (148513)
- 65 (cameroon\$ or congo or congan or botswana\$ or lesotho\$ or zimbabwe\$ or namibia\$ or swaziland\$ or benin or burkino faso).ti,ab,ot. (16778)
- 66 (gambia\$ or ghana\$ or senegal\$ or liberia\$ or sierra leone).ti,ab,ot. (14402)
- 67 ((underdeveloped or under-developed or developing) adj4 (econom\$ or countr\$ or nation\$ or health system\$)).ti,ab,ot,hw. (83090)
- 68 (less adj1 developed adj4 (econom\$ or countr\$ or nation\$ or health system\$)).ti,ab,ot,hw. (917)
- 69 (low\$ income\$ adj3 (countr\$ or nation\$ or econom\$)).ti,ab,ot,hw. (1804)
- 70 (middle\$ income\$ adj3 (countr\$ or nation\$ or econom\$)).ti,ab,ot,hw. (1530)
- 71 third world.ti,ab,ot,hw. (2748)
- 72 3rd world.ti,ab,ot,hw. (75)
- 73 emerg\$ econom\$.ti,ab,ot,hw. (111)
- 74 (lmic or lmics).ti,ot,ab. (96)

75 (medically underserved adj3 (area\$ or region\$ or countr\$ or nation\$)).ti,ab,ot,hw. (179)

76 ((doctor\$ or nurs\$ or medic\$ or physician\$ or midwi\$ or hospital\$) adj4 shortage adj2 (area\$ or region\$ or countr\$ or nation\$)).ti,ab,ot,hw. (151)

77 or/51-76 (795002)

78 25 and 29 and 50 and 77 (7126)

79 animal/ or animal experiment/ (3032343)

80 (rat or rats or mouse or mice or murine or rodent or rodents or hamster or hamsters or pig or pigs or porcine or rabbit or rabbits or animal or animals or dogs or dog or cats or cow or bovine or sheep or ovine or monkey or monkeys).mp. (4638604)

81 or/79-80 (4638604)

82 exp human/ or human experiment/ (12132588)

83 81 not (81 and 82) (3727971)

84 78 not 83 (7096)

85 limit 84 to yr='2000 -Current' (5317)

*PsycINFO (OvidSP): 2000-2010/12/wk 1*

Searched 15 December 2010

1 exp 'income (economic)'/ (1036)

2 exp incentives/ (2228)

3 exp employee benefits/ (3180)

4 holidays/ (171)

5 working conditions/ or job enrichment/ or work rest cycles/ or work week length/ or workday shifts/ or working space/ (12344)

6 family work relationship/ or 'work (attitudes toward)'/ (5835)

7 'quality of work life'/ (840)

8 (Salar\$ or wage\$ or incentiv\$ or pay\$ or remunerat\$ or money or monetary or reward\$ or pecuniar\$ or nonpecuniar\$ or financ\$ or bonus or bonuses or pension\$ or retirement fund\$ or fee or fees or capita\$ or reimburs\$).ti,ab,ot,hw. (84483)

9 (financ\$ adj4 (incentive\$ or perk\$ or benefit\$)).ti,ab,ot,hw. (823)

10 (PBP or per diem\$).ti,ab,ot. (71)

11 ((work\$ or job or jobs or employ\$) adj3 life adj3 balanc\$).ti,ab,ot,hw. (469)

12 ((work\$ or job or jobs or employ\$) adj3 famil\$ adj3 balanc\$).ti,ab,ot,hw. (458)

13 ((work\$ or job or jobs or employ\$) adj3 home\$ adj3 balanc\$).ti,ab,ot,hw. (55)

14 (flexitime or over-time or flexi-time or overtime).ti,ab,ot,hw. (30711)

15 (session\$ adj4 payment\$).ti,ab,ot,hw. (9)

16 (Performance adj4 (pay\$ or bonus\$ or award or awards)).ti,ab,ot,hw. (527)

*The impact of increasing salaries on improving the performance of public servants*

- 17 (flexi\$ adj3 (employ\$ or job\$ or work\$ or leave\$ or time-off)).ti,ab,ot,hw. (1079)
- 18 (work\$ adj3 condition\$).ti,ab,ot,hw. (13343)
- 19 (sitting adj4 (allowance\$ or benefit\$ or pay\$ or expense\$)).ti,ab,ot,hw. (9)
- 20 (travel\$ adj4 (allowance\$ or benefit\$ or pay\$ or expense\$)).ti,ab,ot,hw. (45)
- 21 ((education\$ or development\$) adj4 (grant\$ or fund\$ or opportunit\$ or aid\$)).ti,ab,ot,hw. (7829)
- 22 CPD.ti,ab,ot. (378)
- 23 (continu\$ adj3 professional adj3 develop\$).ti,ab,ot,hw. (486)
- 24 (career\$ adj4 (develop\$ or progress\$ or opportunit\$ or reward\$)).ti,ab,ot,hw. (7947)
- 25 ((Work\$ or employ\$ or job or jobs or staff\$ or profession\$) adj4 supervis\$).ti,ab,ot,hw. (9170)
- 26 ((financial\$ or pecuniary or nonpecuniary or staff\$ or work\$ or job or jobs or employ\$ or career\$ or profession\$ or educat\$ or organi?at\$) adj4 benefit\$).ti,ab,ot. (5168)
- 27 ((medical\$ or sick\$ or illness\$ or ill-health\$ or illhealth\$ or absen\$) adj4 (leav\$ or time-off)).ti,ab,ot,hw. (874)
- 28 ((maternity or paternity or parent\$ or domestic\$ or famil\$) adj4 (leav\$ or time-off)).ti,ab,ot,hw. (862)
- 29 ((annual or holiday\$ or vacation\$) adj4 (leav\$ or time-off)).ti,ab,ot,hw. (35)
- 30 holiday\$.ti,ab,ot,hw. (839)
- 31 or/1-30 (160388)
- 32 ((Behav\$ or organi?ation\$) adj4 (modif\$ or motivat\$)).ti,ab,ot,hw. (13833)
- 33 (performance\$ adj4 (improv\$ or manag\$ or modif\$ or enhanc\$ or upgrad\$)).ti,ab,ot,hw. (16585)
- 34 (Chang\$ or increas\$ or rise\$ or rising or rose or rais\$ or augment\$ or growth\$ or grow\$ or grew or improv\$ or gain\$ or motivat\$ or promot\$ or encourag\$ or enhanc\$ or boost\$ or achiev\$ or success\$ or succeed\$ or accomplish\$ or thrive\$ or thriving or achiev\$ or attain\$).ti,ab,ot. (921020)
- 35 or/32-34 (925113)
- 36 exp personnel supply/ (285)
- 37 exp health personnel/ (64458)
- 38 exp legal personnel/ (7076)
- 39 government personnel/ (1279)
- 40 public sector/ (1786)
- 41 government agencies/ (1312)
- 42 (public adj3 (sector\$ or service\$ or servant\$ or employ\$ or worker\$ or job or jobs or personnel or staff\$ or workforce\$ or work force\$ or manpower\$)).ti,ab,ot,hw. (9008)

- 43 ((government\$ or civil or council) adj3 (sector\$ or service\$ or servant\$ or employ\$ or worker\$ or job or jobs or personnel or staff\$ or workforce\$ or work force\$ or manpower\$)).ti,ab,ot,hw. (4729)
- 44 (pam or pams).ti,ab,ot. (215)
- 45 (profession\$ adj3 allied adj3 medicine).ti,ab,ot,hw. (26)
- 46 (teacher\$ or educator\$ or tutor\$ or lecturer\$).ti,ab,ot,hw. (96272)
- 47 (school\$ adj3 (worker\$ or personnel or employ\$ or job or jobs or staff\$ or workforce\$ or work force\$ or manpower\$)).ti,ab,ot,hw. (5051)
- 48 social worker\$.ti,ab,ot,hw. (11878)
- 49 (teach\$ adj3 (aide\$ or assistant\$)).ti,ab,ot,hw. (717)
- 50 (classroom adj3 (aide\$ or assistant\$ or personnel or staff\$)).ti,ab,ot,hw. (167)
- 51 (nursing or nurse or nurses or matron or matrons or auxillary or auxillaries or midwi\$).ti,ab,ot,hw. (42155)
- 52 (judge or judges or judicial\$ or judiciary or cadre or cadres or magistrat\$).ti,ab,ot,hw. (11880)
- 53 (doctor\$ or physician\$ or consultant\$ or surgeon\$ or registrar\$ or medic or medics).ti,ab,ot,hw. (50229)
- 54 (specialist\$ or p?ediatrician\$ or an?sethetist\$).ti,ab,ot,hw. (13689)
- 55 GP.ti,ab,ot. (2105)
- 56 (general adj2 pract\$).ti,ab,ot,hw. (8133)
- 57 (Clinician\$ or practitioner\$ or Pharmacist\$ or paramedic\$).ti,ab,ot,hw. (78952)
- 58 ((hospital\$ or health or surg\$ or medical) adj4 (personnel\$ or employ\$ or worker\$ or job or jobs or team\$ or staff\$ or workforce\$ or work force\$ or manpower\$)).ti,ab,ot,hw. (38802)
- 59 or/36-58 (321331)
- 60 developing countries/ or emerging economies/ (2500)
- 61 (south america\$ or venezuela\$ or colombia\$ or ecuador\$ or peru or peruvian\$ or brazil\$).ti,ab,ot. (8670)
- 62 (bolivia\$ or paraguay\$ or chile or chilean\$ or uruguay\$ or argentin\$ or guyana\$ or french guiana\$).ti,ab,ot. (2818)
- 63 (suriname\$ or central america\$ or belize\$ or costa rica\$ or el salvador\$ or guatemala\$ or honduras or honduran\$).ti,ab,ot. (1705)
- 64 (nicaragua\$ or panama\$ or africa\$ or nigeria\$ or mozambique or somalia\$ or rwanda\$ or tanzania\$ or uganda\$ or zambia\$ or angola\$).ti,ab,ot. (40686)
- 65 (cameroon\$ or congo or congan or botswana\$ or lesotho\$ or zimbabwe\$ or namibia\$ or swaziland\$ or benin or burkino faso).ti,ab,ot. (1802)
- 66 (gambia\$ or ghana\$ or senegal\$ or liberia\$ or sierra leone).ti,ab,ot. (1174)
- 67 ((underdeveloped or under-developed or developing) adj4 (econom\$ or countr\$ or nation\$ or health system\$)).ti,ab,ot,hw. (4983)

- 68 (less adj1 developed adj4 (econom\$ or countr\$ or nation\$ or health system\$)).ti,ab,ot,hw. (177)
- 69 (low\$ income\$ adj3 (countr\$ or nation\$ or econom\$)).ti,ab,ot,hw. (377)
- 70 (middle\$ income\$ adj3 (countr\$ or nation\$ or econom\$)).ti,ab,ot,hw. (364)
- 71 third world.ti,ab,ot,hw. (512)
- 72 3rd world.ti,ab,ot,hw. (35)
- 73 emerg\$ econom\$.ti,ab,ot,hw. (261)
- 74 (lmic or lmics).ti,ot,ab. (18)
- 75 (medically underserved adj3 (area\$ or region\$ or countr\$ or nation\$)).ti,ab,ot,hw. (27)
- 76 or/60-75 (59249)
- 77 31 and 35 and 59 and 76 (1042)
- 78 animal.de,po. (166583)
- 79 (rat or rats or mouse or mice or murine or rodent or rodents or hamster or hamsters or pig or pigs or porcine or rabbit or rabbits or animal or animals or canine or feline or dogs or dog or cats or cow or bovine or sheep or ovine or monkey or monkeys).mp. (171204)
- 80 or/78-79 (188560)
- 81 human.po. (1784452)
- 82 80 not (80 and 81) (155398)
- 83 77 not 82 (1042)
- 84 limit 83 to yr='2000 -Current' (930)

*The Cochrane Library (Wiley)*

Cochrane Database of Systematic Reviews (CDSR) Issue 12, 2010

Cochrane Central Register of Controlled Trials (CENTRAL) Issue 4, 2010

NHS Economic Evaluation Database (NHS EED) Issue 4, 2010

Searched 15 December 2010

- |    |  |      |
|----|--|------|
| #1 | MeSH descriptor Income explode all trees   | 998  |
| #2 | MeSH descriptor Employee Incentive Plans, this term only   | 6    |
| #3 | MeSH descriptor Physician Incentive Plans, this term only  | 18   |
| #4 | MeSH descriptor Holidays explode all trees   | 8    |
| #5 | (Salar* or wage* or incentiv* or pay* or remunerat* or money or monetary or reward* or pecuniar* or nonpecuniar* or financ* or bonus or bonuses or pension* or retirement fund* or fee or fees or capita* or reimburs*):ti,ab,kw | 6787 |
| #6 | (PBP or 'per diem'):ti,ab  | 52   |
| #7 | ((work* or job or jobs or employ*) near/3 famil* near/3 balanc*):ti,ab,kw  | 0    |
| #8 | ((work* or job or jobs or employ*) near/3 home* near/3 balanc*):ti,ab,kw   | 2    |
- The impact of increasing salaries on improving the performance of public servants*

#9	(flexitime or over-time or flexi-time or overtime):ti,ab,kw	6074
#10	((work* or job or jobs or employ*) near/3 life near/3 balanc*):ti,ab,kw	4
#11	(session* near/4 payment*):ti,ab,kw	0
#12	(Performance near/4 (pay* or bonus* or award or awards)):ti,ab,kw	18
#13	(flexi* near/3 (employ* or job* or work* or leave* or time-off)):ti,ab,kw	27
#14	(work* near/3 condition*):ti,ab,kw	190
#15	(sitting near/4 (allowance* or benefit* or pay* or expense*)):ti,ab,kw	2
#16	(travel* near/4 (allowance* or benefit* or pay* or expense*)):ti,ab,kw	15
#17	((education* or development*) near/4 (grant* or fund* or opportunit* or aid*)):ti,ab,kw	481
#18	CPD:ti,ab	170
#19	(continu* near/3 professional near/3 develop*):ti,ab,kw	13
#20	(career* near/4 (develop* or progress* or opportunit* or reward*)):ti,ab,kw	24
#21	((Work* or employ* or job or jobs or staff* or profession*) near/4 supervis*):ti,ab,kw	139
#22	((financial* or pecuniary or nonpecuniary or staff* or work* or job or jobs or employ* or career* or profession* or educat* or organisat* or organisat*) near/4 benefit*):ti,ab	364
#23	((medical* or sick* or illness* or ill-health* or illhealth* or absen*) near/4 (leav* or time-off)):ti,ab,kw	736
#24	((maternity or paternity or parent* or domestic* or famil*) near/4 (leav* or time-off)):ti,ab,kw	21
#25	((annual or holiday* or vacation*) near/4 (leav* or time-off)):ti,ab,kw	2
#26	holiday*:ti,ab,kw	110
#27	(#1 OR #2 OR #3 OR #4 OR #5 OR #6 OR #7 OR #8 OR #9 OR #10 OR #11 OR #12 OR #13 OR #14 OR #15 OR #16 OR #17)	14155
#28	(#18 OR #19 OR #20 OR #21 OR #22 OR #23 OR #24 OR #25 OR #26 OR #27)	15073
#29	((Behav* or organisation* or organisation*) near/4 (modif* or motivat*)):ti,ab,kw	1345
#30	(performance* near/4 (improv* or manag* or modif* or enhanc* or upgrad*)):ti,ab,kw	4097
#31	(Chang* or increas* or rise* or rising or rose or rais* or augment* or growth* or grow* or grew or improv* or gain* or motivat* or promot* or encourag* or enhanc* or boost* or achiev* or success* or succeed* or accomplish* or thrive* or thriving or achiev* or attain*):ti,ab	297258
#32	(#29 OR #30 OR #31)	297630
#33	MeSH descriptor Health Manpower, this term only	22
#34	MeSH descriptor Health Personnel explode all trees	4673
#35	MeSH descriptor Local Government, this term only	10

#36	MeSH descriptor Patient Care Team explode all trees	1248
#37	MeSH descriptor Government Agencies, this term only	27
#38	(public near/3 (sector* or service* or servant* or employ* or worker* or job or jobs or personnel or staff* or workforce* or work force* or manpower*)):ti,ab,kw	522
#39	((government* or civil or council) near/3 (sector* or service* or servant* or employ* or worker* or job or jobs or personnel or staff* or workforce* or work force* or manpower*)):ti,ab,kw	83
#40	(pam or pams):ti,ab	145
#41	(profession* near/3 allied near/3 medicine):ti,ab,kw	6
#42	(teacher* or educator* or tutor* or lecturer*):ti,ab,kw	2214
#43	(school* near/3 (worker* or personnel or employ* or job or jobs or staff* or workforce* or work force* or manpower*)):ti,ab,kw	147
#44	social worker*:ti,ab,kw	554
#45	(teach* near/3 (aide* or assistant*)):ti,ab,kw	14
#46	(classroom near/3 (aide* or assistant* or personnel or staff*)):ti,ab,kw	3
#47	(nursing or nurse or nurses or matron or matrons or auxillary or auxillaries or midwi*):ti,ab,kw	13102
#48	(judge or judges or judicial* or judiciary or cadre or cadres or magistrat*):ti,ab,kw	3956
#49	(doctor* or physician* or consultant* or surgeon* or registrar* or medic or medics):ti,ab,kw	18559
#50	(specialist* or paediatrician* or anaesethetist* or pediatrician* or anesethetist*):ti,ab,kw	2156
#51	GP:ti,ab	1308
#52	(general near/2 pract*):ti,ab,kw	4887
#53	(Clinician* or practitioner* or Pharmacist* or paramedic*):ti,ab,kw	9637
#54	((hospital* or health or surg* or medical) near/4 (personnel* or employ* or worker* or job or jobs or team* or staff* or workforce* or work-force* or manpower*)):ti,ab,kw	5716
#55	(#33 OR #34 OR #35 OR #36 OR #37 OR #38 OR #39 OR #40 OR #41 OR #42 OR #43 OR #44)	9114
#56	(#45 OR #46 OR #47 OR #48 OR #49 OR #50 OR #51 OR #52 OR #53 OR #54 OR #55)	50013
#57	MeSH descriptor Developing Countries, this term only	708
#58	MeSH descriptor Medically Underserved Area, this term only	78
#59	MeSH descriptor Africa explode all trees	3263
#60	MeSH descriptor Asia, this term only	120
#61	MeSH descriptor Asia, Central explode all trees	15

#62	MeSH descriptor Asia, Southeastern explode all trees	1480
#63	MeSH descriptor Asia, Western explode all trees	2776
#64	MeSH descriptor Far East explode all trees	3560
#65	MeSH descriptor China explode all trees	1319
#66	MeSH descriptor Korea, this term only	371
#67	MeSH descriptor Mongolia, this term only	5
#68	MeSH descriptor Taiwan, this term only	507
#69	MeSH descriptor South America explode all trees	1128
#70	MeSH descriptor Central America explode all trees	165
#71	MeSH descriptor Latin America, this term only	74
#72	MeSH descriptor Mexico, this term only	377
#73	MeSH descriptor Commonwealth of Independent States explode all trees	250
#74	MeSH descriptor Pacific Islands explode all trees	495
#75	MeSH descriptor Indian Ocean Islands explode all trees	40
#76	((south near/1 america*) or venezuela* or colombia* or ecuador* or peru or peruvian* or brazil*):ti,ab	1578
#77	(bolivia* or paraguay* or chile or chilean* or uruguay* or argentin* or guyana* or (french near/1 guiana*)):ti,ab	522
#78	((central near/1 america*) or (el near/1 salvador*) or (costa near/1 rica*)):ti,ab	69
#79	(suriname* or belize* or guatemala* or honduras or honduran*):ti,ab	180
#80	(nicaragua* or panama* or africa* or nigeria* or mozambique or somalia* or rwanda* or tanzania* or uganda* or zambia* or angola*):ti,ab	4916
#81	(cameroon* or congo or congan or botswana* or lesotho* or zimbabwe* or namibia* or swaziland* or benin or (burkino near/1 faso)):ti,ab	352
#82	(gambia* or ghana* or senegal* or liberia* or (sierra near/1 leone)):ti,ab	592
#83	((underdeveloped or under-developed or developing) near/4 (econom* or countr* or nation* or health system*)):ti,ab,kw	2040
#84	(less near/2 developed near/4 (econom* or countr* or nation*)):ti,ab,kw	37
#85	(less near/2 developed near/4 (health near/1 system*)):ti,ab,kw	0
#86	((low* near/1 income*) near/3 (countr* or nation* or econom*)):ti,ab,kw	108
#87	((middle* near/1 income*) near/3 (countr* or nation* or econom*)):ti,ab,kw	118
#88	(3rd near/1 world):ti,ab,kw	35
#89	(third near/1 world):ti,ab,kw	42
#90	(emerg* near/1 econom*):ti,ab,kw	272
#91	(lmic or lmics):ti,ab	9

#92 (medically near/2 underserved near/3 (area\* or region\* or countr\* or nation\*)):ti,ab,kw  
83

#93 ((doctor\* or nurs\* or medic\* or physician\* or midwi\* or hospital\*) near/4 shortage near/2 (area\* or region\* or countr\* or nation\*)):ti,ab,kw 0

#94 (#57 OR #58 OR #59 OR #60 OR #61 OR #62 OR #63 OR #64 OR #65 OR #66 OR #67 OR #68 OR #69 OR #70) 12573

#95 (#71 OR #72 OR #73 OR #74 OR #75 OR #76 OR #77 OR #78 OR #79 OR #80 OR #81 OR #82 OR #83 OR #84 OR #85 OR #86 OR #87) 10625

#96 (#88 OR #89 OR #90 OR #91 OR #92 OR #93 OR #94 OR #95) 19710

#97 (#28 AND #32 AND #56 AND #96), from 2000 to 2010 137

CDSR search retrieved 10 records.

CENTRAL search retrieved 120 records.

NHS EED search retrieved 2 records.

*Health Management Information Consortium (HMIC) (OvidSP): 2000-2010/11*

Searched 15 December 2010

1 exp income/ (2126)

2 financial incentives/ or incentives/ or incentive systems/ (590)

3 exp incentive programmes/ (28)

4 exp wages/ (2379)

5 earnings/ (216)

6 exp employment/ (3643)

7 'contracts of employment'/ (485)

8 exp 'conditions of employment'/ (14170)

9 paid leave/ or exp holidays/ or exp leave/ (769)

10 (Salar\$ or wage\$ or incentiv\$ or pay\$ or remunerat\$ or money or monetary or reward\$ or pecuniar\$ or nonpecuniar\$ or financ\$ or bonus or bonuses or pension\$ or retirement fund\$ or fee or fees or capita\$ or reimburs\$).ti,ab,ot,hw. (39378)

11 (financ\$ adj4 (incentive\$ or perk\$ or benefit\$)).ti,ab,ot,hw. (685)

12 (PBP or per diem\$).ti,ab,ot. (26)

13 ((work\$ or job or jobs or employ\$) adj3 life adj3 balanc\$).ti,ab,ot,hw. (68)

14 ((work\$ or job or jobs or employ\$) adj3 famil\$ adj3 balanc\$).ti,ab,ot,hw. (12)

15 ((work\$ or job or jobs or employ\$) adj3 home\$ adj3 balanc\$).ti,ab,ot,hw. (15)

16 (flexitime or over-time or flexi-time or overtime).ti,ab,ot,hw. (1375)

17 (session\$ adj4 payment\$).ti,ab,ot,hw. (2)

18 (Performance adj4 (pay\$ or bonus\$ or award or awards)).ti,ab,ot,hw. (281)

*The impact of increasing salaries on improving the performance of public servants*

- 19 (flexi\$ adj3 (employ\$ or job\$ or work\$ or leave\$ or time-off)).ti,ab,ot,hw. (659)
- 20 (work\$ adj3 condition\$).ti,ab,ot,hw. (1077)
- 21 (sitting adj4 (allowance\$ or benefit\$ or pay\$ or expense\$)).ti,ab,ot,hw. (0)
- 22 (travel\$ adj4 (allowance\$ or benefit\$ or pay\$ or expense\$)).ti,ab,ot,hw. (197)
- 23 ((education\$ or development\$) adj4 (grant\$ or fund\$ or opportunit\$ or aid\$)).ti,ab,ot,hw. (2008)
- 24 CPD.ti,ab,ot. (126)
- 25 (continu\$ adj3 professional adj3 develop\$).ti,ab,ot,hw. (677)
- 26 (career\$ adj4 (develop\$ or progress\$ or opportunit\$ or reward\$)).ti,ab,ot,hw. (1226)
- 27 ((Work\$ or employ\$ or job or jobs or staff\$ or profession\$) adj4 supervis\$).ti,ab,ot,hw. (757)
- 28 ((financial\$ or pecuniary or nonpecuniary or staff\$ or work\$ or job or jobs or employ\$ or career\$ or profession\$ or educat\$ or organi?at\$) adj4 benefit\$).ti,ab,ot. (1998)
- 29 ((medical\$ or sick\$ or illness\$ or ill-health\$ or illhealth\$ or absen\$) adj4 (leav\$ or time-off)).ti,ab,ot,hw. (635)
- 30 ((maternity or paternity or parent\$ or domestic\$ or famil\$) adj4 (leav\$ or time-off)).ti,ab,ot,hw. (237)
- 31 ((annual or holiday\$ or vacation\$) adj4 (leav\$ or time-off)).ti,ab,ot,hw. (49)
- 32 holiday\$.ti,ab,ot,hw. (361)
- 33 or/1-32 (56902)
- 34 ((Behav\$ or organi?ation\$) adj4 (modif\$ or motivat\$)).ti,ab,ot,hw. (411)
- 35 (performance\$ adj4 (improv\$ or manag\$ or modif\$ or enhanc\$ or upgrad\$)).ti,ab,ot,hw. (2366)
- 36 (Chang\$ or increas\$ or rise\$ or rising or rose or rais\$ or augment\$ or growth\$ or grow\$ or grew or improv\$ or gain\$ or motivat\$ or promot\$ or encourag\$ or enhanc\$ or boost\$ or achiev\$ or success\$ or succeed\$ or accomplish\$ or thrive\$ or thriving or achiev\$ or attain\$).ti,ab,ot. (96390)
- 37 or/34-36 (97076)
- 38 workforce/ (2355)
- 39 exp health service staff/ (41953)
- 40 exp educational staff/ (691)
- 41 exp legal professionals/ (155)
- 42 judiciary/ (12)
- 43 public service employees/ or civil servants/ (357)
- 44 exp health care teams/ (1201)
- 45 exp executive agencies/ (584)
- 46 (public adj3 (sector\$ or service\$ or servant\$ or employ\$ or worker\$ or job or jobs or personnel or staff\$ or workforce\$ or work force\$ or manpower\$)).ti,ab,ot,hw. (5833)

- 47 ((government\$ or civil or council) adj3 (sector\$ or service\$ or servant\$ or employ\$ or worker\$ or job or jobs or personnel or staff\$ or workforce\$ or work force\$ or manpower\$)).ti,ab,ot,hw. (3304)
- 48 (pam or pams).ti,ab,ot. (77)
- 49 (profession\$ adj3 allied adj3 medicine).ti,ab,ot,hw. (650)
- 50 (teacher\$ or educator\$ or tutor\$ or lecturer\$).ti,ab,ot,hw. (2820)
- 51 (school\$ adj3 (worker\$ or personnel or employ\$ or job or jobs or staff\$ or workforce\$ or work force\$ or manpower\$)).ti,ab,ot,hw. (222)
- 52 social worker\$.ti,ab,ot,hw. (5347)
- 53 (teach\$ adj3 (aide\$ or assistant\$)).ti,ab,ot,hw. (8)
- 54 (classroom adj3 (aide\$ or assistant\$ or personnel or staff\$)).ti,ab,ot,hw. (7)
- 55 (nursing or nurse or nurses or matron or matrons or auxillary or auxillaries or midwi\$).ti,ab,ot,hw. (37800)
- 56 (judge or judges or judicial\$ or judiciary or cadre or cadres or magistrat\$).ti,ab,ot,hw. (818)
- 57 (doctor\$ or physician\$ or consultant\$ or surgeon\$ or registrar\$ or medic or medics).ti,ab,ot,hw. (19487)
- 58 (specialist\$ or p?ediatrician\$ or an?sethetist\$).ti,ab,ot,hw. (6410)
- 59 GP.ti,ab,ot. (5385)
- 60 (general adj2 pract\$).ti,ab,ot,hw. (20994)
- 61 (Clinician\$ or practitioner\$ or Pharmacist\$ or paramedic\$).ti,ab,ot,hw. (24519)
- 62 ((hospital\$ or health or surg\$ or medical) adj4 (personnel\$ or employ\$ or worker\$ or job or jobs or team\$ or staff\$ or workforce\$ or work force\$ or manpower\$)).ti,ab,ot,hw. (23501)
- 63 or/38-62 (107649)
- 64 developing countries/ (934)
- 65 exp africa/ (638)
- 66 exp asia/ (2039)
- 67 exp latin america/ (380)
- 68 soviet union/ (130)
- 69 oceania/ or melanesia/ or micronesia/ or polynesia/ (21)
- 70 exp indian ocean territories/ (8)
- 71 (south america\$ or venezuela\$ or colombia\$ or ecuador\$ or peru or peruvian\$ or brazil\$).ti,ab,ot. (148)
- 72 (bolivia\$ or paraguay\$ or chile or chilean\$ or uruguay\$ or argentin\$ or guyana\$ or french guiana\$).ti,ab,ot. (86)
- 73 (suriname\$ or central america\$ or belize\$ or costa rica\$ or el salvador\$ or guatemala\$ or honduras or honduran\$).ti,ab,ot. (29)

- 74 (nicaragua\$ or panama\$ or africa\$ or nigeria\$ or mozambique or somalia\$ or rwanada\$ or tanzania\$ or uganda\$ or zambia\$ or angola\$).ti,ab,ot. (1190)
- 75 (cameroon\$ or congo or congan or botswana\$ or lesotho\$ or zimbabwe\$ or namibia\$ or swaziland\$ or benin or burkino faso).ti,ab,ot. (78)
- 76 (gambia\$ or ghana\$ or senegal\$ or liberia\$ or sierra leone).ti,ab,ot. (53)
- 77 ((underdeveloped or under-developed or developing) adj4 (econom\$ or countr\$ or nation\$ or health system\$)).ti,ab,ot,hw. (2473)
- 78 (less adj1 developed adj4 (econom\$ or countr\$ or nation\$ or health system\$)).ti,ab,ot,hw. (55)
- 79 (low\$ income\$ adj3 (countr\$ or nation\$ or econom\$)).ti,ab,ot,hw. (110)
- 80 (middle\$ income\$ adj3 (countr\$ or nation\$ or econom\$)).ti,ab,ot,hw. (83)
- 81 third world.ti,ab,ot,hw. (95)
- 82 3rd world.ti,ab,ot,hw. (0)
- 83 emerg\$ econom\$.ti,ab,ot,hw. (1)
- 84 (lmic or lmics).ti,ot,ab. (2)
- 85 (medically underserved adj3 (area\$ or region\$ or countr\$ or nation\$)).ti,ab,ot,hw. (3)
- 86 ((doctor\$ or nurs\$ or medic\$ or physician\$ or midwi\$ or hospital\$) adj4 shortage adj2 (area\$ or region\$ or countr\$ or nation\$)).ti,ab,ot,hw. (22)
- 87 or/64-86 (6199)
- 88 33 and 37 and 63 and 87 (243)
- 89 limit 88 to yr='2000 -Current' (141)

*Education Resources Information Center (ERIC) (CSA Illumina): 2000-2010/11*

Searched 16 December 2010

Searched using Advanced search (all fields), Thesaurus and command search options. Note: search statements are listed in reverse chronological order.

Limited 2000-2010

#70 Search Query #70 ((DE=('employment patterns' or 'employment potential' or 'fringe benefits' or 'holidays' or 'income' or 'job layoff' or 'job security' or 'leaves of absence' or 'underemployment' or 'vacations' or 'working hours')) or (Salar\* or wage\* or incentiv\* or pay\* or remunerat\* or money or monetary or reward\* or pecuniar\* or nonpecuniar\* or financ\* or bonus or bonuses or pension\* or retirement fund\* or fee or fees or capita\* or reimburs\*) or (financ\* near (incentive\* or perk\* or benefit\*)) or (PBP or per diem\*) or ((work\* or job or jobs or employ\*) near life near balanc\*) or ((work\* or job or jobs or employ\*) near famil\* near balanc\*) or ((work\* or job or jobs or employ\*) near home\* near balanc\*) or (flexitime or over-time or flexi-time or overtime) or (session\* near payment\*) or (Performance near (pay\* or bonus\* or award or awards)) or (flexi\* near (employ\* or job\* or work\* or leave\* or time-off)) or (flexi\* near (employ\* or job\* or work\* or leave\* or time-off)) or (work\* near condition\*) or (sitting near (allowance\* or benefit\* or pay\* or expense\*)) or (travel\* near (allowance\* or benefit\* or pay\* or expense\*)) or ((education\* or

development\*) near (grant\* or fund\* or opportunit\* or aid\*) or (TI= CPD) or (AB= CPD) or (continu\* near professional near develop\*) or (career\* near (develop\* or progress\* or opportunit\* or reward\*)) or (career\* near (develop\* or progress\* or opportunit\* or reward\*)) or ((Work\* or employ\* or job or jobs or staff\* or profession\*) near supervis\*) or ((financial\* or pecuniary or nonpecuniary or staff\* or work\* or job or jobs or employ\* or career\* or profession\* or educat\* or organi?at\*) near benefit\*) or ((medical\* or sick\* or illness\* or ill-health\* or illhealth\* or absen\*) near (leav\* or time-off)) or ((maternity or paternity or parent\* or domestic\* or famil\*) near (leav\* or time-off)) or ((annual or holiday\* or vacation\*) near (leav\* or time-off)) or (holiday\*)) and (((Behav\* or organi?ation\*) near (modif\* or motivat\*)) or (performance\* near (improv\* or manag\* or modif\* or enhanc\* or upgrad\*)) or (Chang\* or increas\* or rise\* or rising or rose or rais\* or augment\* or growth\* or grow\* or grew or improv\* or gain\* or motivat\* or promot\* or encourag\* or enhanc\* or boost\* or achiev\* or success\* or succeed\* or accomplish\* or thrive\* or thriving or achiev\* or attain\*)) and ((DE=('labor force' or 'employees' or 'caseworkers' or 'clergy' or 'differentiated staffs' or 'dislocated workers' or 'health personnel' or 'allied health personnel' or 'emergency medical technicians' or 'home health aides' or 'physicians' or 'foreign medical graduates' or 'psychologists' or 'school psychologists' or 'mental health workers' or 'nurses' or 'school nurses' or 'indigenous personnel' or 'professional personnel' or 'athletic coaches' or 'faculty' or 'adjunct faculty' or 'college faculty' or 'college presidents' or 'student teacher supervisors' or 'teacher educators' or 'methods teachers' or 'counselor educators' or 'teaching assistants' or 'graduate school faculty' or 'medical school faculty' or 'deans' or 'department heads' or 'women faculty' or 'faculty advisers' or 'nontenured faculty' or 'part time faculty' or 'information scientists' or 'librarians' or 'lawyers' or 'researchers' or 'educational researchers' or 'teacher researchers' or 'social scientists' or 'historians' or 'teachers' or 'adult educators' or 'african american teachers' or 'art teachers' or 'beginning teachers' or 'bilingual teachers' or 'catholic educators' or 'cooperating teachers' or 'elementary school teachers' or 'home economics teachers' or 'industrial arts teachers' or 'instructor coordinators' or 'itinerant teachers' or 'language teachers' or 'english teachers' or 'lay teachers' or 'master teachers' or 'mathematics teachers' or 'middle school teachers' or 'minority group teachers' or 'music teachers' or 'physical education teachers' or 'preschool teachers' or 'public school teachers' or 'reading teachers' or 'remedial teachers' or 'resource teachers' or 'science teachers' or 'secondary school teachers' or 'special education teachers' or 'student teachers' or 'substitute teachers' or 'teacher interns' or 'television teachers' or 'tutors' or 'vocational education teachers' or 'business education teachers' or 'trade and industrial teachers' or 'writing teachers' or 'experienced teachers' or 'research directors' or 'scientists' or 'women scientists' or 'reentry workers' or 'research assistants' or 'library personnel' or 'resident advisers' or 'nonprofessional personnel' or 'clerical workers' or 'examiners' or 'unskilled workers' or 'laborers' or 'agricultural laborers' or 'migrant workers' or 'seasonal laborers' or 'semiskilled workers' or 'skilled workers' or 'resource staff' or 'older workers' or 'school personnel' or 'admissions officers' or 'assistant principals' or 'beginning principals' or 'foreign student advisers' or 'paraprofessional school personnel' or 'school aides' or 'teacher aides' or 'bilingual teacher aides' or 'principals' or 'pupil personnel workers' or 'registrars school' or 'school business officials' or 'school cadres' or 'school counselors' or 'student financial aid officers' or 'school social workers' or 'student personnel workers' or 'entry workers' or 'paraprofessional personnel' or 'scientific personnel' or 'foreign workers' or 'security personnel' or 'government employees' or 'extension agents' or 'military personnel' or 'police' or 'public officials' or 'legislators' or 'state officials' or 'state supervisors' or 'job applicants' or 'labor force nonparticipants')) or (public near (sector\* or service\* or servant\* or employ\* or worker\* or job or jobs or personnel or staff\* or workforce\* or work force\*

or manpower\*)) or ((government\* or civil or council) near (sector\* or service\* or servant\* or employ\* or worker\* or job or jobs or personnel or staff\* or workforce\* or work force\* or manpower\*)) or (pam or pams) or (profession\* near allied near medicine) or (profession\* near allied near medicine) or (teacher\* or educator\* or tutor\* or lecturer\*) or (school\* near (worker\* or personnel or employ\* or job or jobs or staff\* or workforce\* or work force\* or manpower\*)) or (social worker\*) or (teach\* near (aide\* or assistant\*)) or (classroom near (aide\* or assistant\* or personnel or staff\*)) or (nursing or nurse or nurses or matron or matrons or auxillary or auxillaries or midwi\*) or (judge or judges or judicial\* or judiciary or cadre or cadres or magistrat\*) or (doctor\* or physician\* or consultant\* or surgeon\* or registrar\* or medic or medics) or (specialist\* or p?ediatrician\* or an?sethetist\*) or (GP or (general near pract\*)) or (Clinician\* or practitioner\* or Pharmacist\* or paramedic\*) or ((hospital\* or health or surg\* or medical) near (personnel\* or employ\* or worker\* or job or jobs or team\* or staff\* or workforce\* or work force\* or manpower\*)) and ((south america\* or venezuela\* or colombia\* or ecuador\* or peru or peruvian\* or brazil\*) or (bolivia\* or paraguay\* or chile or chilean\* or uruguay\* or argentin\* or guyana\* or french guiana\*) or (suriname\* or central america\* or belize\* or costa rica\* or el salvador\* or guatemala\* or honduras or honduran\*) or (nicaragua\* or panama\* or africa\* or nigeria\* or mozambique or somalia\* or rwanda\* or tanzania\* or uganda\* or zambia\* or angola\*) or (cameroon\* or congo or congan or botswana\* or lesotho\* or zimbabwe\* or namibia\* or swaziland\* or benin or burkino faso) or (gambia\* or ghana\* or senegal\* or liberia\* or sierra leone) or ((underdeveloped or under-developed or developing) near (econom\* or countr\* or nation\* or health system\*)) or (less near developed near (econom\* or countr\* or nation\* or health system\*)) or (low\* income\* near (countr\* or nation\* or econom\*)) or (middle\* income\* near (countr\* or nation\* or econom\*)) or ((third world) or (3rd world) or (emerg\* econom\*)) or (TI=(lmic or lmics)) or (AB=(lmic or lmics)) or (medically underserved near (area\* or region\* or countr\* or nation\*)) or ((doctor\* or nurs\* or medic\* or physician\* or midwi\* or hospital\*) near shortage near (area\* or region\* or countr\* or nation\*))

2089 Published Works results found in ERIC

Date Range: 2000 to 2011

#69 Search Query #69 (south america\* or venezuela\* or colombia\* or ecuador\* or peru or peruvian\* or brazil\*) or (bolivia\* or paraguay\* or chile or chilean\* or uruguay\* or argentin\* or guyana\* or french guiana\*) or (suriname\* or central america\* or belize\* or costa rica\* or el salvador\* or guatemala\* or honduras or honduran\*) or (nicaragua\* or panama\* or africa\* or nigeria\* or mozambique or somalia\* or rwanda\* or tanzania\* or uganda\* or zambia\* or angola\*) or (cameroon\* or congo or congan or botswana\* or lesotho\* or zimbabwe\* or namibia\* or swaziland\* or benin or burkino faso) or (gambia\* or ghana\* or senegal\* or liberia\* or sierra leone) or ((underdeveloped or under-developed or developing) near (econom\* or countr\* or nation\* or health system\*)) or (less near developed near (econom\* or countr\* or nation\* or health system\*)) or (low\* income\* near (countr\* or nation\* or econom\*)) or (middle\* income\* near (countr\* or nation\* or econom\*)) or ((third world) or (3rd world) or (emerg\* econom\*)) or (TI=(lmic or lmics)) or (AB=(lmic or lmics)) or (medically underserved near (area\* or region\* or countr\* or nation\*)) or ((doctor\* or nurs\* or medic\* or physician\* or midwi\* or hospital\*) near shortage near (area\* or region\* or countr\* or nation\*))

50009 Published Works results found in ERIC

Date Range: Earliest to 2011

#68 Search Query #68 ((doctor\* or nurs\* or medic\* or physician\* or midwi\* or hospital\*) near shortage near (area\* or region\* or countr\* or nation\*))

52 Published Works results found in ERIC

Date Range: Earliest to 2011

#67 Search Query #67 (medically underserved near (area\* or region\* or countr\* or nation\*))

47 Published Works results found in ERIC

Date Range: Earliest to 2011

#66 Search Query #66 AB=(lmic or lmics)

1 Published Works result found in ERIC

Date Range: Earliest to 2011

#65 Search Query #65 TI=(lmic or lmics)

0 Published Works results found in ERIC

Date Range: Earliest to 2011

#64 Search Query #64 (third world) or (3rd world) or (emerg\* econom\*)

1623 Published Works results found in ERIC

Date Range: Earliest to 2011

#63 Search Query #63 (middle\* income\* near (countr\* or nation\* or econom\*))

83 Published Works results found in ERIC

Date Range: Earliest to 2011

#62 Search Query #62 (low\* income\* near (countr\* or nation\* or econom\*))

1784 Published Works results found in ERIC

Date Range: Earliest to 2011

#61 Search Query #61 (less near developed near (econom\* or countr\* or nation\* or health system\*))

291 Published Works results found in ERIC

Date Range: Earliest to 2011

#60 Search Query #60 ((underdeveloped or under-developed or developing) near (econom\* or countr\* or nation\* or health system\*))

16280 Published Works results found in ERIC

Date Range: Earliest to 2011

#59 Search Query #59 (gambia\* or ghana\* or senegal\* or liberia\* or sierra leone)

1299 Published Works results found in ERIC

Date Range: Earliest to 2011

#58 Search Query #58 (cameroon\* or congo or congan or botswana\* or lesotho\* or zimbabwe\* or namibia\* or swaziland\* or benin or burkino faso)

1751 Published Works results found in ERIC

Date Range: Earliest to 2011

#57 Search Query #57 (nicaragua\* or panama\* or africa\* or nigeria\* or mozambique or somalia\* or rwanda\* or tanzania\* or uganda\* or zambia\* or angola\*)

28863 Published Works results found in ERIC

Date Range: Earliest to 2011

#56 Search Query #56 (suriname\* or central america\* or belize\* or costa rica\* or el salvador\* or guatemala\* or honduras or honduran\*)

1650 Published Works results found in ERIC

Date Range: Earliest to 2011

#55 Search Query #55 (bolivia\* or paraguay\* or chile or chilean\* or uruguay\* or argentin\* or guyana\* or french guiana\*)

1919 Published Works results found in ERIC

Date Range: Earliest to 2011

#54 Search Query #54 (south america\* or venezuela\* or colombia\* or ecuador\* or peru or peruvian\* or brazil\*)

4624 Published Works results found in ERIC

Date Range: Earliest to 2011

#53 Search Query #53 (DE=('labor force' or 'employees' or 'caseworkers' or 'clergy' or 'differentiated staffs' or 'dislocated workers' or 'health personnel' or 'allied health personnel' or 'emergency medical technicians' or 'home health aides' or 'physicians' or 'foreign medical graduates' or 'psychologists' or 'school psychologists' or 'mental health workers' or 'nurses' or 'school nurses' or 'indigenous personnel' or 'professional personnel' or 'athletic coaches' or 'faculty' or 'adjunct faculty' or 'college faculty' or 'college presidents' or 'student teacher supervisors' or 'teacher educators' or 'methods teachers' or 'counselor educators' or 'teaching assistants' or 'graduate school faculty' or 'medical school faculty' or 'deans' or 'department

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heads' or 'women faculty' or 'faculty advisers' or 'nontenured faculty' or 'part time faculty' or 'information scientists' or 'librarians' or 'lawyers' or 'researchers' or 'educational researchers' or 'teacher researchers' or 'social scientists' or 'historians' or 'teachers' or 'adult educators' or 'african american teachers' or 'art teachers' or 'beginning teachers' or 'bilingual teachers' or 'catholic educators' or 'cooperating teachers' or 'elementary school teachers' or 'home economics teachers' or 'industrial arts teachers' or 'instructor coordinators' or 'itinerant teachers' or 'language teachers' or 'english teachers' or 'lay teachers' or 'master teachers' or 'mathematics teachers' or 'middle school teachers' or 'minority group teachers' or 'music teachers' or 'physical education teachers' or 'preschool teachers' or 'public school teachers' or 'reading teachers' or 'remedial teachers' or 'resource teachers' or 'science teachers' or 'secondary school teachers' or 'special education teachers' or 'student teachers' or 'substitute teachers' or 'teacher interns' or 'television teachers' or 'tutors' or 'vocational education teachers' or 'business education teachers' or 'trade and industrial teachers' or 'writing teachers' or 'experienced teachers' or 'research directors' or 'scientists' or 'women scientists' or 'reentry workers' or 'research assistants' or 'library personnel' or 'resident advisers' or 'nonprofessional personnel' or 'clerical workers' or 'examiners' or 'unskilled workers' or 'laborers' or 'agricultural laborers' or 'migrant workers' or 'seasonal laborers' or 'semiskilled workers' or 'skilled workers' or 'resource staff' or 'older workers' or 'school personnel' or 'admissions officers' or 'assistant principals' or 'beginning principals' or 'foreign student advisers' or 'paraprofessional school personnel' or 'school aides' or 'teacher aides' or 'bilingual teacher aides' or 'principals' or 'pupil personnel workers' or 'registrars school' or 'school business officials' or 'school cadres' or 'school counselors' or 'student financial aid officers' or 'school social workers' or 'student personnel workers' or 'entry workers' or 'paraprofessional personnel' or 'scientific personnel' or 'foreign workers' or 'security personnel' or 'government employees' or 'extension agents' or 'military personnel' or 'police' or 'public officials' or 'legislators' or 'state officials' or 'state supervisors' or 'job applicants' or 'labor force nonparticipants')) or (public near (sector\* or service\* or servant\* or employ\* or worker\* or job or jobs or personnel or staff\* or workforce\* or work force\* or manpower\*)) or ((government\* or civil or council) near (sector\* or service\* or servant\* or employ\* or worker\* or job or jobs or personnel or staff\* or workforce\* or work force\* or manpower\*)) or (pam or pams) or (profession\* near allied near medicine) or (profession\* near allied near medicine) or (teacher\* or educator\* or tutor\* or lecturer\*) or (school\* near (worker\* or personnel or employ\* or job or jobs or staff\* or workforce\* or work force\* or manpower\*)) or (social worker\*) or (teach\* near (aide\* or assistant\*)) or (classroom near (aide\* or assistant\* or personnel or staff\*)) or (nursing or nurse or nurses or matron or matrons or auxillary or auxillaries or midwi\*) or (judge or judges or judicial\* or judiciary or cadre or cadres or magistrat\*) or (doctor\* or physician\* or consultant\* or surgeon\* or registrar\* or medic or medics) or (specialist\* or p?ediatrician\* or an?sethetist\*) or (GP or (general near pract\*)) or (Clinician\* or practitioner\* or Pharmacist\* or paramedic\*) or ((hospital\* or health or surg\* or medical) near (personnel\* or employ\* or worker\* or job or jobs or team\* or staff\* or workforce\* or work force\* or manpower\*))

666303 Published Works results found in ERIC

Date Range: Earliest to 2011

#52 Search Query #52 ((hospital\* or health or surg\* or medical) near (personnel\* or employ\* or worker\* or job or jobs or team\* or staff\* or workforce\* or work force\* or manpower\*))

17304 Published Works results found in ERIC

Date Range: Earliest to 2011

#51 Search Query #51 (Clinician\* or practitioner\* or Pharmacist\* or paramedic\*)

137695 Published Works results found in ERIC

Date Range: Earliest to 2011

#50 Search Query #50 GP or (general near pract\*)

3212 Published Works results found in ERIC

Date Range: Earliest to 2011

#49 Search Query #49 (specialist\* or p?ediatrician\* or an?sethetist\*)

15893 Published Works results found in ERIC

Date Range: Earliest to 2011

#48 Search Query #48 (doctor\* or physician\* or consultant\* or surgeon\* or registrar\* or medic or medics)

33660 Published Works results found in ERIC

Date Range: Earliest to 2011

#47 Search Query #47 (judge or judges or judicial\* or judiciary or cadre or cadres or magistrat\*)

7952 Published Works results found in ERIC

Date Range: Earliest to 2011

#46 Search Query #46 (nursing or nurse or nurses or matron or matrons or auxillary or auxillaries or midwi\*)

11809 Published Works results found in ERIC

Date Range: Earliest to 2011

#45 Search Query #45 (classroom near (aide\* or assistant\* or personnel or staff\*))

2941 Published Works results found in ERIC

Date Range: Earliest to 2011

#44 Search Query #44 (teach\* near (aide\* or assistant\*))

6701 Published Works results found in ERIC

Date Range: Earliest to 2011

#43 Search Query #43 social worker\*

4447 Published Works results found in ERIC

Date Range: Earliest to 2011

#42 Search Query #42 (school\* near (worker\* or personnel or employ\* or job or jobs or staff\* or workforce\* or work force\* or manpower\*))

55868 Published Works results found in ERIC

Date Range: Earliest to 2011

#41 Search Query #41 (teacher\* or educator\* or tutor\* or lecturer\*)

469234 Published Works results found in ERIC

Date Range: Earliest to 2011

#40 Search Query #40 (profession\* near allied near medicine)

23 Published Works results found in ERIC

Date Range: Earliest to 2011

#39 Search Query #39 (profession\* near allied near medicine)

23 Published Works results found in ERIC

Date Range: Earliest to 2011

#38 Search Query #38 (pam or pams)

1470 Published Works results found in ERIC

Date Range: Earliest to 2011

#37 Search Query #37 ((government\* or civil or council) near (sector\* or service\* or servant\* or employ\* or worker\* or job or jobs or personnel or staff\* or workforce\* or work force\* or manpower\*))

17924 Published Works results found in ERIC

Date Range: Earliest to 2011

#36 Search Query #36 (public near (sector\* or service\* or servant\* or employ\* or worker\* or job or jobs or personnel or staff\* or workforce\* or work force\* or manpower\*))

33689 Published Works results found in ERIC

Date Range: Earliest to 2011

#34 Search Query #34 DE=('labor force' or 'employees' or 'caseworkers' or 'clergy' or 'differentiated staffs' or 'dislocated workers' or 'health personnel' or 'allied health personnel' or 'emergency medical technicians' or 'home health aides' or 'physicians' or 'foreign medical

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graduates' or 'psychologists' or 'school psychologists' or 'mental health workers' or 'nurses' or 'school nurses' or 'indigenous personnel' or 'professional personnel' or 'athletic coaches' or 'faculty' or 'adjunct faculty' or 'college faculty' or 'college presidents' or 'student teacher supervisors' or 'teacher educators' or 'methods teachers' or 'counselor educators' or 'teaching assistants' or 'graduate school faculty' or 'medical school faculty' or 'deans' or 'department heads' or 'women faculty' or 'faculty advisers' or 'nontenured faculty' or 'part time faculty' or 'information scientists' or 'librarians' or 'lawyers' or 'researchers' or 'educational researchers' or 'teacher researchers' or 'social scientists' or 'historians' or 'teachers' or 'adult educators' or 'african american teachers' or 'art teachers' or 'beginning teachers' or 'bilingual teachers' or 'catholic educators' or 'cooperating teachers' or 'elementary school teachers' or 'home economics teachers' or 'industrial arts teachers' or 'instructor coordinators' or 'itinerant teachers' or 'language teachers' or 'english teachers' or 'lay teachers' or 'master teachers' or 'mathematics teachers' or 'middle school teachers' or 'minority group teachers' or 'music teachers' or 'physical education teachers' or 'preschool teachers' or 'public school teachers' or 'reading teachers' or 'remedial teachers' or 'resource teachers' or 'science teachers' or 'secondary school teachers' or 'special education teachers' or 'student teachers' or 'substitute teachers' or 'teacher interns' or 'television teachers' or 'tutors' or 'vocational education teachers' or 'business education teachers' or 'trade and industrial teachers' or 'writing teachers' or 'experienced teachers' or 'research directors' or 'scientists' or 'women scientists' or 'reentry workers' or 'research assistants' or 'library personnel' or 'resident advisers' or 'nonprofessional personnel' or 'clerical workers' or 'examiners' or 'unskilled workers' or 'laborers' or 'agricultural laborers' or 'migrant workers' or 'seasonal laborers' or 'semiskilled workers' or 'skilled workers' or 'resource staff' or 'older workers' or 'school personnel' or 'admissions officers' or 'assistant principals' or 'beginning principals' or 'foreign student advisers' or 'paraprofessional school personnel' or 'school aides' or 'teacher aides' or 'bilingual teacher aides' or 'principals' or 'pupil personnel workers' or 'registrars school' or 'school business officials' or 'school cadres' or 'school counselors' or 'student financial aid officers' or 'school social workers' or 'student personnel workers' or 'entry workers' or 'paraprofessional personnel' or 'scientific personnel' or 'foreign workers' or 'security personnel' or 'government employees' or 'extension agents' or 'military personnel' or 'police' or 'public officials' or 'legislators' or 'state officials' or 'state supervisors' or 'job applicants' or 'labor force nonparticipants')

206306 Published Works results found in ERIC

Date Range: Earliest to 2011

#33 Search Query #33 ((Behav\* or organi?ation\*) near (modif\* or motivat\*)) or (performance\* near (improv\* or manag\* or modif\* or enhanc\* or upgrad\*)) or (Chang\* or increas\* or rise\* or rising or rose or rais\* or augment\* or growth\* or grow\* or grew or improv\* or gain\* or motivat\* or promot\* or encourag\* or enhanc\* or boost\* or achiev\* or success\* or succeed\* or accomplish\* or thrive\* or thriving or achiev\* or attain\*)

668530 Published Works results found in ERIC

Date Range: Earliest to 2011

#32 Search Query #32 (Chang\* or increas\* or rise\* or rising or rose or rais\* or augment\* or growth\* or grow\* or grew or improv\* or gain\* or motivat\* or promot\* or encourag\* or enhanc\* or boost\* or

achiev\* or success\* or succeed\* or accomplish\* or thrive\* or thriving or achiev\* or attain\*)  
664263 Published Works results found in ERIC

Date Range: Earliest to 2011

#31 Search Query #31 (performance\* near (improv\* or manag\* or modif\* or enhanc\* or upgrad\*))  
14835 Published Works results found in ERIC

Date Range: Earliest to 2011

#30 Search Query #30 ((Behav\* or organi?ation\*) near (modif\* or motivat\*))  
14872 Published Works results found in ERIC

Date Range: Earliest to 2011

#29 Search Query #29 (DE=('employment patterns' or 'employment potential' or 'fringe benefits' or 'holidays' or 'income' or 'job layoff' or 'job security' or 'leaves of absence' or 'underemployment' or 'vacations' or 'working hours')) or (Salar\* or wage\* or incentiv\* or pay\* or remunerat\* or money or monetary or reward\* or pecuniar\* or nonpecuniar\* or financ\* or bonus or bonuses or pension\* or retirement fund\* or fee or fees or capita\* or reimburs\*) or (financ\* near (incentive\* or perk\* or benefit\*)) or (PBP or per diem\*) or ((work\* or job or jobs or employ\*) near life near balanc\*) or ((work\* or job or jobs or employ\*) near famil\* near balanc\*) or ((work\* or job or jobs or employ\*) near home\* near balanc\*) or (flexitime or over-time or flexi-time or overtime) or (session\* near payment\*) or (Performance near (pay\* or bonus\* or award or awards)) or (flexi\* near (employ\* or job\* or work\* or leave\* or time-off)) or (flexi\* near (employ\* or job\* or work\* or leave\* or time-off)) or (work\* near condition\*) or (sitting near (allowance\* or benefit\* or pay\* or expense\*)) or (travel\* near (allowance\* or benefit\* or pay\* or expense\*)) or ((education\* or development\*) near (grant\* or fund\* or opportunit\* or aid\*)) or (TI= CPD) or (AB= CPD) or (continu\* near professional near develop\*) or (career\* near (develop\* or progress\* or opportunit\* or reward\*)) or (career\* near (develop\* or progress\* or opportunit\* or reward\*)) or ((Work\* or employ\* or job or jobs or staff\* or profession\*) near supervis\*) or ((financial\* or pecuniary or nonpecuniary or staff\* or work\* or job or jobs or employ\* or career\* or profession\* or educat\* or organi?at\*) near benefit\*) or ((medical\* or sick\* or illness\* or ill-health\* or illhealth\* or absen\*) near (leav\* or time-off)) or ((maternity or paternity or parent\* or domestic\* or famil\*) near (leav\* or time-off)) or ((annual or holiday\* or vacation\*) near (leav\* or time-off)) or (holiday\*)  
261635 Published Works results found in ERIC

Date Range: Earliest to 2011

#27 Search Query #27 holiday\*  
1374 Published Works results found in ERIC

Date Range: Earliest to 2011

#26 Search Query #26 ((annual or holiday\* or vacation\*) near (leav\* or time-off))  
207 Published Works results found in ERIC

*The impact of increasing salaries on improving the performance of public servants*

Date Range: Earliest to 2011

#25 Search Query #25 ((maternity or paternity or parent\* or domestic\* or famil\*) near (leav\* or time-off))

1106 Published Works results found in ERIC

Date Range: Earliest to 2011

#24 Search Query #24 ((medical\* or sick\* or illness\* or ill-health\* or illhealth\* or absen\*) near (leav\* or time-off))

1184 Published Works results found in ERIC

Date Range: Earliest to 2011

#23 Search Query #23 ((financial\* or pecuniary or nonpecuniary or staff\* or work\* or job or jobs or employ\* or career\* or profession\* or educat\* or organi?at\*) near benefit\*)

19235 Published Works results found in ERIC

Date Range: Earliest to 2011

#22 Search Query #22 ((Work\* or employ\* or job or jobs or staff\* or profession\*) near supervis\*)

8302 Published Works results found in ERIC

Date Range: Earliest to 2011

#21 Search Query #21 (career\* near (develop\* or progress\* or opportunit\* or reward\*))

27396 Published Works results found in ERIC

Date Range: Earliest to 2011

#20 Search Query #20 (career\* near (develop\* or progress\* or opportunit\* or reward\*))

27396 Published Works results found in ERIC

Date Range: Earliest to 2011

#19 Search Query #19 (continu\* near professional near develop\*)

2707 Published Works results found in ERIC

Date Range: Earliest to 2011

#18 Search Query #18 AB= CPD

163 Published Works results found in ERIC

Date Range: Earliest to 2011

#17 Search Query #17 TI= CPD  
23 Published Works results found in ERIC  
Date Range: Earliest to 2011

#16 Search Query #16 ((education\* or development\*) near (grant\* or fund\* or opportunit\* or aid\*))  
100209 Published Works results found in ERIC  
Date Range: Earliest to 2011

#15 Search Query #15 (travel\* near (allowance\* or benefit\* or pay\* or expense\*))  
273 Published Works results found in ERIC  
Date Range: Earliest to 2011

#14 Search Query #14 (sitting near (allowance\* or benefit\* or pay\* or expense\*))  
7 Published Works results found in ERIC  
Date Range: Earliest to 2011

#13 Search Query #13 (work\* near condition\*)  
4468 Published Works results found in ERIC  
Date Range: Earliest to 2011

#12 Search Query #12 (flexi\* near (employ\* or job\* or work\* or leave\* or time-off))  
2229 Published Works results found in ERIC  
Date Range: Earliest to 2011

#11 Search Query #11 (flexi\* near (employ\* or job\* or work\* or leave\* or time-off))  
2229 Published Works results found in ERIC  
Date Range: Earliest to 2011

#10 Search Query #10 (Performance near (pay\* or bonus\* or award or awards))  
787 Published Works results found in ERIC  
Date Range: Earliest to 2011

#9 Search Query #9 (session\* near payment\*)  
3 Published Works results found in ERIC  
Date Range: Earliest to 2011

#8 Search Query #8 (flexitime or over-time or flexi-time or overtime)

8773 Published Works results found in ERIC

Date Range: Earliest to 2011

#7 Search Query #7 ((work\* or job or jobs or employ\*) near home\* near balanc\*)

51 Published Works results found in ERIC

Date Range: Earliest to 2011

#6 Search Query #6 ((work\* or job or jobs or employ\*) near famil\* near balanc\*)

281 Published Works results found in ERIC

Date Range: Earliest to 2011

#5 Search Query #5 ((work\* or job or jobs or employ\*) near life near balanc\*)

180 Published Works results found in ERIC

Date Range: Earliest to 2011

#4 Search Query #4 (PBP or per diem\*)

53 Published Works results found in ERIC

Date Range: Earliest to 2011

#3 Search Query #3 (financ\* near (incentive\* or perk\* or benefit\*))

2351 Published Works results found in ERIC

Date Range: Earliest to 2011

#2 Search Query #2 (Salar\* or wage\* or incentiv\* or pay\* or remunerat\* or money or monetary or reward\* or pecuniar\* or nonpecuniar\* or financ\* or bonus or bonuses or pension\* or retirement fund\* or fee or fees or capita\* or reimburs\*)

132220 Published Works results found in ERIC

Date Range: Earliest to 2011

#1 Search Query #1 DE=('employment patterns' or 'employment potential' or 'fringe benefits' or 'holidays' or 'income' or 'job layoff' or 'job security' or 'leaves of absence' or 'underemployment' or 'vacations' or 'working hours')

30692 Published Works results found in ERIC

Date Range: Earliest to 2011

Social Services Abstracts (CSA Illumina): 2000-2010/12/16

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Searched December 16 2010

Searched using Advanced search (all fields), Thesaurus and command search options

Limited 2000-2010

#16 Search Query #16 (((Salar\* or wage\* or incentiv\* or pay\* or remunerat\* or money or monetary or reward\* or pecuniar\* or nonpecuniar\* or financ\* or bonus or bonuses or pension\* or retirement fund\* or fee or fees or capita\* or reimburs\*) or (financ\* near (incentive\* or perk\* or benefit\*)) or (PBP or per diem\*)) or (((work\* or job or jobs or employ\*) near life near balanc\*) or ((work\* or job or jobs or employ\*) near famil\* near balanc\*) or ((work\* or job or jobs or employ\*) near home\* near balanc\*)) or ((flexitime or over-time or flexi-time or overtime) or (session\* near payment\*) or (Performance near (pay\* or bonus\* or award or awards)))) or(((flexi\* near (employ\* or job\* or work\* or leave\* or time-off)) or (flexi\* near (employ\* or job\* or work\* or leave\* or time-off)) or (work\* near condition\*)) or ((sitting near (allowance\* or benefit\* or pay\* or expense\*)) or (travel\* near (allowance\* or benefit\* or pay\* or expense\*)) or ((education\* or development\*) near (grant\* or fund\* or opportunit\* or aid\*)) or ((continu\* near professional near develop\*) or (career\* near (develop\* or progress\* or opportunit\* or reward\*)) or (career\* near (develop\* or progress\* or opportunit\* or reward\*)))) or(TI=cpd or AB=cpd) or(((Work\* or employ\* or job or jobs or staff\* or profession\*) near supervis\*) or ((financial\* or pecuniary or nonpecuniary or staff\* or work\* or job or jobs or employ\* or career\* or profession\* or educat\* or organi?at\*) near benefit\*) or ((medical\* or sick\* or illness\* or ill-health\* or illhealth\* or absen\*) near (leav\* or time-off))) or (((maternity or paternity or parent\* or domestic\* or famil\*) near (leav\* or time-off)) or ((annual or holiday\* or vacation\*) near (leav\* or time-off)) or holiday\*)) and (((Behav\* or organi?ation\*) near (modif\* or motivat\*)) or (performance\* near (improv\* or manag\* or modif\* or enhanc\* or upgrad\*)) or (Chang\* or increas\* or rise\* or rising or rose or rais\* or augment\* or growth\* or grow\* or grew or improv\* or gain\* or motivat\* or promot\* or encourag\* or enhanc\* or boost\* or achiev\* or success\* or succeed\* or accomplish\* or thrive\* or thriving or achiev\* or attain\*)) and (((public near (sector\* or service\* or servant\* or employ\* or worker\* or job or jobs or personnel or staff\* or workforce\* or work force\* or manpower\*)) or ((government\* or civil or council) near (sector\* or service\* or servant\* or employ\* or worker\* or job or jobs or personnel or staff\* or workforce\* or work force\* or manpower\*)) or (pam or pams)) or ((profession\* near allied near medicine) or (profession\* near allied near medicine) or (teacher\* or educator\* or tutor\* or lecturer\*)) or ((school\* near (worker\* or personnel or employ\* or job or jobs or staff\* or workforce\* or work force\* or manpower\*)) or (social worker\*) or (teach\* near (aide\* or assistant\*)))) or(((public near (sector\* or service\* or servant\* or employ\* or worker\* or job or jobs or personnel or staff\* or workforce\* or work force\* or manpower\*)) or ((government\* or civil or council) near (sector\* or service\* or servant\* or employ\* or worker\* or job or jobs or personnel or staff\* or workforce\* or work force\* or manpower\*)) or (pam or pams)) or ((profession\* near allied near medicine) or (profession\* near allied near medicine) or (teacher\* or educator\* or tutor\* or lecturer\*)) or ((school\* near (worker\* or personnel or employ\* or job or jobs or staff\* or workforce\* or work force\* or manpower\*)) or (social worker\*) or (teach\* near (aide\* or assistant\*)))) or(((classroom near (aide\* or assistant\* or personnel or staff\*)) or (nursing or nurse or nurses or matron or matrons or auxillary or auxillaries or midwi\*) or (judge or judges or judicial\* or judiciary or cadre or cadres or magistrat\*)) or ((doctor\* or physician\* or consultant\* or surgeon\* or registrar\* or medic or medics) or (specialist\* or p?ediatrician\* or an?sethetist\*) or (GP or (general near pract\*))) or ((Clinician\* or practitioner\*

or Pharmacist\* or paramedic\*) or ((hospital\* or health or surg\* or medical) near (personnel\* or employ\* or worker\* or job or jobs or team\* or staff\* or workforce\* or work force\* or manpower\*)))) and (((south america\* or venezuela\* or colombia\* or ecuador\* or peru or peruvian\* or brazil\*) or (bolivia\* or paraguay\* or chile or chilean\* or uruguay\* or argentin\* or guyana\* or french guiana\*) or (suriname\* or central america\* or belize\* or costa rica\* or el salvador\* or guatemala\* or honduras or honduran\*)) or ((nicaragua\* or panama\* or africa\* or nigeria\* or mozambique or somalia\* or rwanda\* or tanzania\* or uganda\* or zambia\* or angola\*) or (cameroon\* or congo or congan or botswana\* or lesotho\* or zimbabwe\* or namibia\* or swaziland\* or benin or burkino faso) or (gambia\* or ghana\* or senegal\* or liberia\* or sierra leone)) or (((underdeveloped or under-developed or developing) near (econom\* or countr\* or nation\* or health system\*)) or (less near developed near (econom\* or countr\* or nation\* or health system\*)) or (low\* income\* near (countr\* or nation\* or econom\*)))) or(((middle\* income\* near (countr\* or nation\* or econom\*)) or ((third world) or (3rd world) or (emerg\* econom\*)) or (medically underserved near (area\* or region\* or countr\* or nation\*))) or ((doctor\* or nurs\* or medic\* or physician\* or midwi\* or hospital\*) near shortage near (area\* or region\* or countr\* or nation\*)) or TI=(lmic or lmics) or(AB=(lmic or lmics))

2823 Published Works results found in Multiple Databases +

Date Range: 2000 to 2011

#15 Search Query #15 (((south america\* or venezuela\* or colombia\* or ecuador\* or peru or peruvian\* or brazil\*) or (bolivia\* or paraguay\* or chile or chilean\* or uruguay\* or argentin\* or guyana\* or french guiana\*) or (suriname\* or central america\* or belize\* or costa rica\* or el salvador\* or guatemala\* or honduras or honduran\*)) or ((nicaragua\* or panama\* or africa\* or nigeria\* or mozambique or somalia\* or rwanda\* or tanzania\* or uganda\* or zambia\* or angola\*) or (cameroon\* or congo or congan or botswana\* or lesotho\* or zimbabwe\* or namibia\* or swaziland\* or benin or burkino faso) or (gambia\* or ghana\* or senegal\* or liberia\* or sierra leone)) or (((underdeveloped or under-developed or developing) near (econom\* or countr\* or nation\* or health system\*)) or (less near developed near (econom\* or countr\* or nation\* or health system\*)) or (low\* income\* near (countr\* or nation\* or econom\*)))) or(((middle\* income\* near (countr\* or nation\* or econom\*)) or ((third world) or (3rd world) or (emerg\* econom\*)) or (medically underserved near (area\* or region\* or countr\* or nation\*))) or ((doctor\* or nurs\* or medic\* or physician\* or midwi\* or hospital\*) near shortage near (area\* or region\* or countr\* or nation\*)) or TI=(lmic or lmics) or(AB=(lmic or lmics))

23986 Published Works results found in Multiple Databases +

Date Range: Earliest to Current

#14 Search Query #14 AB=(lmic or lmics)

3 Published Works results found in Multiple Databases +

Date Range: 2000 to 2011

#13 Search Query #13 ((middle\* income\* near (countr\* or nation\* or econom\*)) or ((third world) or (3rd world) or (emerg\* econom\*)) or (medically underserved near (area\* or region\* or countr\* or nation\*))) or ((doctor\* or nurs\* or medic\* or physician\* or midwi\* or hospital\*) near shortage near

(area\* or region\* or countr\* or nation\*)) or TI=(lmic or lmics)

506 Published Works results found in Multiple Databases +

Date Range: 2000 to 2011

#12 Search Query #12 ((south america\* or venezuela\* or colombia\* or ecuador\* or peru or peruvian\* or brazil\*) or (bolivia\* or paraguay\* or chile or chilean\* or uruguay\* or argentin\* or guyana\* or french guiana\*) or (suriname\* or central america\* or belize\* or costa rica\* or el salvador\* or guatemala\* or honduras or honduran\*)) or ((nicaragua\* or panama\* or africa\* or nigeria\* or mozambique or somalia\* or rwanda\* or tanzania\* or uganda\* or zambia\* or angola\*) or (cameroon\* or congo or congan or botswana\* or lesotho\* or zimbabwe\* or namibia\* or swaziland\* or benin or burkino faso) or (gambia\* or ghana\* or senegal\* or liberia\* or sierra leone)) or (((underdeveloped or under-developed or developing) near (econom\* or countr\* or nation\* or health system\*)) or (less near developed near (econom\* or countr\* or nation\* or health system\*)) or (low\* income\* near (countr\* or nation\* or econom\*)))

11610 Published Works results found in Multiple Databases +

Date Range: 2000 to 2011

#10 Search Query #10 (((public near (sector\* or service\* or servant\* or employ\* or worker\* or job or jobs or personnel or staff\* or workforce\* or work force\* or manpower\*)) or ((government\* or civil or council) near (sector\* or service\* or servant\* or employ\* or worker\* or job or jobs or personnel or staff\* or workforce\* or work force\* or manpower\*)) or (pam or pams)) or ((profession\* near allied near medicine) or (profession\* near allied near medicine) or (teacher\* or educator\* or tutor\* or lecturer\*)) or ((school\* near (worker\* or personnel or employ\* or job or jobs or staff\* or workforce\* or work force\* or manpower\*)) or (social worker\*)) or (teach\* near (aide\* or assistant\*))) or (((public near (sector\* or service\* or servant\* or employ\* or worker\* or job or jobs or personnel or staff\* or workforce\* or work force\* or manpower\*)) or ((government\* or civil or council) near (sector\* or service\* or servant\* or employ\* or worker\* or job or jobs or personnel or staff\* or workforce\* or work force\* or manpower\*)) or (pam or pams)) or ((profession\* near allied near medicine) or (profession\* near allied near medicine) or (teacher\* or educator\* or tutor\* or lecturer\*)) or ((school\* near (worker\* or personnel or employ\* or job or jobs or staff\* or workforce\* or work force\* or manpower\*)) or (social worker\*)) or (teach\* near (aide\* or assistant\*))) or (((classroom near (aide\* or assistant\* or personnel or staff\*)) or (nursing or nurse or nurses or matron or matrons or auxillary or auxillaries or midwi\*) or (judge or judges or judicial\* or judiciary or cadre or cadres or magistrat\*)) or ((doctor\* or physician\* or consultant\* or surgeon\* or registrar\* or medic or medics) or (specialist\* or p?ediatrician\* or an?sethetist\*) or (GP or (general near pract\*))) or ((Clinician\* or practitioner\* or Pharmacist\* or paramedic\*) or ((hospital\* or health or surg\* or medical) near (personnel\* or employ\* or worker\* or job or jobs or team\* or staff\* or workforce\* or work force\* or manpower\*))))

49717 Published Works results found in Multiple Databases +

Date Range: Earliest to Current

#9 Search Query #9 ((classroom near (aide\* or assistant\* or personnel or staff\*)) or (nursing or nurse or nurses or matron or matrons or auxillary or auxillaries or midwi\*) or (judge or judges or

judicial\* or judiciary or cadre or cadres or magistrat\*) or ((doctor\* or physician\* or consultant\* or surgeon\* or registrar\* or medic or medics) or (specialist\* or p?ediatrician\* or an?sethetist\*) or (GP or (general near pract\*))) or ((Clinician\* or practitioner\* or Pharmacist\* or paramedic\*) or ((hospital\* or health or surg\* or medical) near (personnel\* or employ\* or worker\* or job or jobs or team\* or staff\* or workforce\* or work force\* or manpower\*)))

21128 Published Works results found in Multiple Databases +

Date Range: 2000 to 2011

#8 Search Query #8 ((public near (sector\* or service\* or servant\* or employ\* or worker\* or job or jobs or personnel or staff\* or workforce\* or work force\* or manpower\*)) or ((government\* or civil or council) near (sector\* or service\* or servant\* or employ\* or worker\* or job or jobs or personnel or staff\* or workforce\* or work force\* or manpower\*)) or (pam or pams)) or ((profession\* near allied near medicine) or (profession\* near allied near medicine) or (teacher\* or educator\* or tutor\* or lecturer\*)) or ((school\* near (worker\* or personnel or employ\* or job or jobs or staff\* or workforce\* or work force\* or manpower\*)) or (social worker\*) or (teach\* near (aide\* or assistant\*)))

18426 Published Works results found in Multiple Databases +

Date Range: 2000 to 2011

#7 Search Query #7 ((public near (sector\* or service\* or servant\* or employ\* or worker\* or job or jobs or personnel or staff\* or workforce\* or work force\* or manpower\*)) or ((government\* or civil or council) near (sector\* or service\* or servant\* or employ\* or worker\* or job or jobs or personnel or staff\* or workforce\* or work force\* or manpower\*)) or (pam or pams)) or ((profession\* near allied near medicine) or (profession\* near allied near medicine) or (teacher\* or educator\* or tutor\* or lecturer\*)) or ((school\* near (worker\* or personnel or employ\* or job or jobs or staff\* or workforce\* or work force\* or manpower\*)) or (social worker\*) or (teach\* near (aide\* or assistant\*)))

18426 Published Works results found in Multiple Databases +

Date Range: 2000 to 2011

#6 Search Query #6 ((Behav\* or organi?ation\*) near (modif\* or motivat\*)) or (performance\* near (improv\* or manag\* or modif\* or enhanc\* or upgrad\*)) or (Chang\* or increas\* or rise\* or rising or rose or rais\* or augment\* or growth\* or grow\* or grew or improv\* or gain\* or motivat\* or promot\* or encourag\* or enhanc\* or boost\* or achiev\* or success\* or succeed\* or accomplish\* or thrive\* or thriving or achiev\* or attain\*)

81512 Published Works results found in Multiple Databases +

Date Range: Earliest to 2011

#5 Search Query #5 (((Salar\* or wage\* or incentiv\* or pay\* or remunerat\* or money or monetary or reward\* or pecuniar\* or nonpecuniar\* or financ\* or bonus or bonuses or pension\* or retirement fund\* or fee or fees or capita\* or reimburs\*) or (financ\* near (incentive\* or perk\* or benefit\*)) or (PBP or per diem\*)) or (((work\* or job or jobs or employ\*) near life near balanc\*) or ((work\* or job

or jobs or employ\*) near famil\* near balanc\*) or ((work\* or job or jobs or employ\*) near home\* near balanc\*)) or ((flexitime or over-time or flexi-time or overtime) or (session\* near payment\*) or (Performance near (pay\* or bonus\* or award or awards))) or(((flexi\* near (employ\* or job\* or work\* or leave\* or time-off)) or (flexi\* near (employ\* or job\* or work\* or leave\* or time-off)) or (work\* near condition\*)) or ((sitting near (allowance\* or benefit\* or pay\* or expense\*)) or (travel\* near (allowance\* or benefit\* or pay\* or expense\*)) or ((education\* or development\*) near (grant\* or fund\* or opportunit\* or aid\*))) or ((continu\* near professional near develop\*) or (career\* near (develop\* or progress\* or opportunit\* or reward\*)) or (career\* near (develop\* or progress\* or opportunit\* or reward\*))) or(TI=cpd or AB=cpd) or(((Work\* or employ\* or job or jobs or staff\* or profession\*) near supervis\*) or ((financial\* or pecuniary or nonpecuniary or staff\* or work\* or job or jobs or employ\* or career\* or profession\* or educat\* or organi?at\*) near benefit\*) or ((medical\* or sick\* or illness\* or ill-health\* or illhealth\* or absen\*) near (leav\* or time-off))) or (((maternity or paternity or parent\* or domestic\* or famil\*) near (leav\* or time-off)) or ((annual or holiday\* or vacation\*) near (leav\* or time-off)) or holiday\*))

42660 Published Works results found in Multiple Databases +

Date Range: Earliest to Current

#4 Search Query #4 (((Work\* or employ\* or job or jobs or staff\* or profession\*) near supervis\*) or ((financial\* or pecuniary or nonpecuniary or staff\* or work\* or job or jobs or employ\* or career\* or profession\* or educat\* or organi?at\*) near benefit\*) or ((medical\* or sick\* or illness\* or ill-health\* or illhealth\* or absen\*) near (leav\* or time-off))) or (((maternity or paternity or parent\* or domestic\* or famil\*) near (leav\* or time-off)) or ((annual or holiday\* or vacation\*) near (leav\* or time-off)) or holiday\*))

3391 Published Works results found in Multiple Databases +

Date Range: 2000 to 2011

#3 Search Query #3 TI=cpd or AB=cpd

4 Published Works results found in Multiple Databases +

Date Range: 2000 to 2011

#2 Search Query #2 ((flexi\* near (employ\* or job\* or work\* or leave\* or time-off)) or (flexi\* near (employ\* or job\* or work\* or leave\* or time-off)) or (work\* near condition\*)) or ((sitting near (allowance\* or benefit\* or pay\* or expense\*)) or (travel\* near (allowance\* or benefit\* or pay\* or expense\*)) or ((education\* or development\*) near (grant\* or fund\* or opportunit\* or aid\*))) or ((continu\* near professional near develop\*) or (career\* near (develop\* or progress\* or opportunit\* or reward\*)) or (career\* near (develop\* or progress\* or opportunit\* or reward\*)))

5255 Published Works results found in Multiple Databases +

Date Range: 2000 to 2011

#1 Search Query #1 ((Salar\* or wage\* or incentiv\* or pay\* or remunerat\* or money or monetary or reward\* or pecuniar\* or nonpecuniar\* or financ\* or bonus or bonuses or pension\* or retirement fund\* or fee or fees or capita\* or reimburs\*) or (financ\* near (incentive\* or perk\* or benefit\*)) or

(PBP or per diem\*) or (((work\* or job or jobs or employ\*) near life near balanc\*) or ((work\* or job or jobs or employ\*) near famil\* near balanc\*) or ((work\* or job or jobs or employ\*) near home\* near balanc\*)) or ((flexitime or over-time or flexi-time or overtime) or (session\* near payment\*) or (Performance near (pay\* or bonus\* or award or awards)))

23508 Published Works results found in Multiple Databases +

Date Range: 2000 to 2011

*International Bibliography of the Social Sciences (IBSS) (CSA Illumina): 2000-2010/ 12/ 16*

Searched 16 December 2010

Searched using Advanced search (all fields), Thesaurus and command search options

Limited 2000-2010

Search Query #17 (((Salar\* or wage\* or incentiv\* or pay\* or remunerat\* or money or monetary or reward\* or pecuniar\* or nonpecuniar\* or financ\* or bonus or bonuses or pension\* or retirement fund\* or fee or fees or capita\* or reimburs\*) or (financ\* near (incentive\* or perk\* or benefit\*)) or (PBP or per diem\*)) or (((work\* or job or jobs or employ\*) near life near balanc\*) or ((work\* or job or jobs or employ\*) near famil\* near balanc\*) or ((work\* or job or jobs or employ\*) near home\* near balanc\*)) or ((flexitime or over-time or flexi-time or overtime) or (session\* near payment\*) or (Performance near (pay\* or bonus\* or award or awards)))) or(((flexi\* near (employ\* or job\* or work\* or leave\* or time-off)) or (flexi\* near (employ\* or job\* or work\* or leave\* or time-off)) or (work\* near condition\*)) or ((sitting near (allowance\* or benefit\* or pay\* or expense\*)) or (travel\* near (allowance\* or benefit\* or pay\* or expense\*)) or ((education\* or development\*) near (grant\* or fund\* or opportunit\* or aid\*)) or ((continu\* near professional near develop\*) or (career\* near (develop\* or progress\* or opportunit\* or reward\*)) or (career\* near (develop\* or progress\* or opportunit\* or reward\*)))) or(TI=cpd or AB=cpd) or(((Work\* or employ\* or job or jobs or staff\* or profession\*) near supervis\*) or ((financial\* or pecuniary or nonpecuniary or staff\* or work\* or job or jobs or employ\* or career\* or profession\* or educat\* or organi?at\*) near benefit\*) or ((medical\* or sick\* or illness\* or ill-health\* or illhealth\* or absen\*) near (leav\* or time-off))) or (((maternity or paternity or parent\* or domestic\* or famil\*) near (leav\* or time-off)) or ((annual or holiday\* or vacation\*) near (leav\* or time-off)) or holiday\*)) and (((Behav\* or organi?ation\*) near (modif\* or motivat\*)) or (performance\* near (improv\* or manag\* or modif\* or enhanc\* or upgrad\*)) or (Chang\* or increas\* or rise\* or rising or rose or rais\* or augment\* or growth\* or grow\* or grew or improv\* or gain\* or motivat\* or promot\* or encourag\* or enhanc\* or boost\* or achiev\* or success\* or succeed\* or accomplish\* or thrive\* or thriving or achiev\* or attain\*)) and (((public near (sector\* or service\* or servant\* or employ\* or worker\* or job or jobs or personnel or staff\* or workforce\* or work force\* or manpower\*)) or ((government\* or civil or council) near (sector\* or service\* or servant\* or employ\* or worker\* or job or jobs or personnel or staff\* or workforce\* or work force\* or manpower\*)) or (pam or pams)) or ((profession\* near allied near medicine) or (profession\* near allied near medicine) or (teacher\* or educator\* or tutor\* or lecturer\*)) or ((school\* near (worker\* or personnel or employ\* or job or jobs or staff\* or workforce\* or work force\* or manpower\*)) or (social worker\*)) or (teach\* near (aide\* or assistant\*)))) or(((public near (sector\* or service\* or servant\* or employ\* or worker\* or job or jobs or personnel or staff\* or workforce\* or work force\* or manpower\*)) or ((government\* or civil or council) near (sector\* or service\* or servant\* or employ\* or worker\* or job or jobs or personnel or staff\* or workforce\* or work force\* or manpower\*)) or (pam or pams)) or ((profession\* near allied near medicine) or (profession\* near allied near medicine) or (teacher\* or educator\* or tutor\* or lecturer\*)) or ((school\* near (worker\*

or personnel or employ\* or job or jobs or staff\* or workforce\* or work force\* or manpower\*)) or (social worker\*) or (teach\* near (aide\* or assistant\*))) or(((classroom near (aide\* or assistant\* or personnel or staff\*)) or (nursing or nurse or nurses or matron or matrons or auxillary or auxillaries or midwi\*) or (judge or judges or judicial\* or judiciary or cadre or cadres or magistrat\*)) or ((doctor\* or physician\* or consultant\* or surgeon\* or registrar\* or medic or medics) or (specialist\* or p?ediatrician\* or an?sethetist\*) or (GP or (general near pract\*))) or ((Clinician\* or practitioner\* or Pharmacist\* or paramedic\*) or ((hospital\* or health or surg\* or medical) near (personnel\* or employ\* or worker\* or job or jobs or team\* or staff\* or workforce\* or work force\* or manpower\*)))) and (((south america\* or venezuela\* or colombia\* or ecuador\* or peru or peruvian\* or brazil\*) or (bolivia\* or paraguay\* or chile or chilean\* or uruguay\* or argentin\* or guyana\* or french guiana\*) or (suriname\* or central america\* or belize\* or costa rica\* or el salvador\* or guatemala\* or honduras or honduran\*)) or ((nicaragua\* or panama\* or africa\* or nigeria\* or mozambique or somalia\* or rwanda\* or tanzania\* or uganda\* or zambia\* or angola\*) or (cameroon\* or congo or congan or botswana\* or lesotho\* or zimbabwe\* or namibia\* or swaziland\* or benin or burkino faso) or (gambia\* or ghana\* or senegal\* or liberia\* or sierra leone)) or (((underdeveloped or under-developed or developing) near (econom\* or countr\* or nation\* or health system\*)) or (less near developed near (econom\* or countr\* or nation\* or health system\*)) or (low\* income\* near (countr\* or nation\* or econom\*))) or(((middle\* income\* near (countr\* or nation\* or econom\*)) or ((third world) or (3rd world) or (emerg\* econom\*)) or (medically underserved near (area\* or region\* or countr\* or nation\*)) or ((doctor\* or nurs\* or medic\* or physician\* or midwi\* or hospital\*) near shortage near (area\* or region\* or countr\* or nation\*)) or TI=(lmic or lmics)) or(AB=(lmic or lmics)))

1322 Published Works results found in Multiple Databases +

Date Range: 2000 to 2011

*Sociological Abstracts (CSA Illumina): 2000-2010/ 12/ 16*

Searched 16 December 2010

Searched using Advanced search (all fields), Thesaurus and command search options

Limited 2000-2010

Search Query #22 (TI=(((Salar\* or wage\* or incentiv\* or pay\* or remunerat\* or money or monetary or reward\* or pecuniar\* or nonpecuniar\* or financ\* or bonus or bonuses or pension\* or retirement fund\* or fee or fees or capita\* or reimburs\*) or (financ\* near (incentive\* or perk\* or benefit\*)) or (PBP or per diem\*)) or (((work\* or job or jobs or employ\*) near life near balanc\*) or ((work\* or job or jobs or employ\*) near famil\* near balanc\*) or ((work\* or job or jobs or employ\*) near home\* near balanc\*)) or ((flexitime or over-time or flexi-time or overtime) or (session\* near payment\*) or (Performance near (pay\* or bonus\* or award or awards)))) or(((flexi\* near (employ\* or job\* or work\* or leave\* or time-off)) or (flexi\* near (employ\* or job\* or work\* or leave\* or time-off)) or (work\* near condition\*)) or ((sitting near (allowance\* or benefit\* or pay\* or expense\*)) or (travel\* near (allowance\* or benefit\* or pay\* or expense\*)) or ((education\* or development\*) near (grant\* or fund\* or opportunit\* or aid\*))) or ((continu\* near professional near develop\*) or (career\* near (develop\* or progress\* or opportunit\* or reward\*)) or (career\* near (develop\* or progress\* or opportunit\* or reward\*))) or(TI=cpd or AB=cpd) or(((Work\* or employ\* or job or jobs or staff\* or profession\*) near supervis\*) or ((financial\* or pecuniary or nonpecuniary or staff\* or work\* or job or jobs or employ\* or career\* or profession\* or educat\* or organi?at\*) near benefit\*) or ((medical\* or sick\* or illness\* or ill-health\* or illhealth\* or absen\*) near (leav\* or time-off))) or (((maternity or

*The impact of increasing salaries on improving the performance of public servants*

paternity or parent\* or domestic\* or famil\*) near (leav\* or time-off)) or ((annual or holiday\* or vacation\*) near (leav\* or time-off)) or holiday\*)) and (((Behav\* or organi?ation\*) near (modif\* or motivat\*)) or (performance\* near (improv\* or manag\* or modif\* or enhanc\* or upgrad\*)) or (Chang\* or increas\* or rise\* or rising or rose or rais\* or augment\* or growth\* or grow\* or grew or improv\* or gain\* or motivat\* or promot\* or encourag\* or enhanc\* or boost\* or achiev\* or success\* or succeed\* or accomplish\* or thrive\* or thriving or achiev\* or attain\*)) and (((public near (sector\* or service\* or servant\* or employ\* or worker\* or job or jobs or personnel or staff\* or workforce\* or work force\* or manpower\*)) or ((government\* or civil or council) near (sector\* or service\* or servant\* or employ\* or worker\* or job or jobs or personnel or staff\* or workforce\* or work force\* or manpower\*)) or (pam or pams)) or ((profession\* near allied near medicine) or (profession\* near allied near medicine) or (teacher\* or educator\* or tutor\* or lecturer\*)) or ((school\* near (worker\* or personnel or employ\* or job or jobs or staff\* or workforce\* or work force\* or manpower\*)) or (social worker\*) or (teach\* near (aide\* or assistant\*)))) or(((public near (sector\* or service\* or servant\* or employ\* or worker\* or job or jobs or personnel or staff\* or workforce\* or work force\* or manpower\*)) or ((government\* or civil or council) near (sector\* or service\* or servant\* or employ\* or worker\* or job or jobs or personnel or staff\* or workforce\* or work force\* or manpower\*)) or (pam or pams)) or ((profession\* near allied near medicine) or (profession\* near allied near medicine) or (teacher\* or educator\* or tutor\* or lecturer\*)) or ((school\* near (worker\* or personnel or employ\* or job or jobs or staff\* or workforce\* or work force\* or manpower\*)) or (social worker\*) or (teach\* near (aide\* or assistant\*)))) or(((classroom near (aide\* or assistant\* or personnel or staff\*)) or (nursing or nurse or nurses or matron or matrons or auxillary or auxillaries or midwi\*) or (judge or judges or judicial\* or judiciary or cadre or cadres or magistrat\*)) or ((doctor\* or physician\* or consultant\* or surgeon\* or registrar\* or medic or medics) or (specialist\* or p?ediatrician\* or an?sethetist\*) or (GP or (general near pract\*)) or ((Clinician\* or practitioner\* or Pharmacist\* or paramedic\*) or ((hospital\* or health or surg\* or medical) near (personnel\* or employ\* or worker\* or job or jobs or team\* or staff\* or workforce\* or work force\* or manpower\*)))) and (((south america\* or venezuela\* or colombia\* or ecuador\* or peru or peruvian\* or brazil\*) or (bolivia\* or paraguay\* or chile or chilean\* or uruguay\* or argentin\* or guyana\* or french guiana\*) or (suriname\* or central america\* or belize\* or costa rica\* or el salvador\* or guatemala\* or honduras or honduran\*)) or ((nicaragua\* or panama\* or africa\* or nigeria\* or mozambique or somalia\* or rwanda\* or tanzania\* or uganda\* or zambia\* or angola\*) or (cameroon\* or congo or congan or botswana\* or lesotho\* or zimbabwe\* or namibia\* or swaziland\* or benin or burkino faso) or (gambia\* or ghana\* or senegal\* or liberia\* or sierra leone)) or (((underdeveloped or under-developed or developing) near (econom\* or countr\* or nation\* or health system\*)) or (less near developed near (econom\* or countr\* or nation\* or health system\*)) or (low\* income\* near (countr\* or nation\* or econom\*))) or(((middle\* income\* near (countr\* or nation\* or econom\*)) or ((third world) or (3rd world) or (emerg\* econom\*)) or (medically underserved near (area\* or region\* or countr\* or nation\*)) or ((doctor\* or nurs\* or medic\* or physician\* or midwi\* or hospital\*) near shortage near (area\* or region\* or countr\* or nation\*)) or TI=(lmic or lmics)) or(AB=(lmic or lmics)))) or(AB=(((Salar\* or wage\* or incentiv\* or pay\* or remunerat\* or money or monetary or reward\* or pecuniar\* or nonpecuniar\* or financ\* or bonus or bonuses or pension\* or retirement fund\* or fee or fees or capita\* or reimburs\*) or (financ\* near (incentive\* or perk\* or benefit\*)) or (PBP or per diem\*)) or (((work\* or job or jobs or employ\*) near life near balanc\*) or ((work\* or job or jobs or employ\*) near famil\* near balanc\*) or ((work\* or job or jobs or employ\*) near home\* near balanc\*)) or ((flexitime or over-time or flexi-time or overtime) or (session\* near payment\*) or (Performance near (pay\* or bonus\* or award or awards)))) or(((flexi\* near (employ\* or job\* or work\* or leave\* or time-off)) or (flexi\* near

(employ\* or job\* or work\* or leave\* or time-off)) or (work\* near condition\*) or ((sitting near allowance\* or benefit\* or pay\* or expense\*)) or (travel\* near (allowance\* or benefit\* or pay\* or expense\*)) or ((education\* or development\*) near (grant\* or fund\* or opportunit\* or aid\*)) or ((continu\* near professional near develop\*) or (career\* near (develop\* or progress\* or opportunit\* or reward\*)) or (career\* near (develop\* or progress\* or opportunit\* or reward\*))) or (TI=cpd or AB=cpd) or (((Work\* or employ\* or job or jobs or staff\* or profession\*) near supervis\*) or ((financial\* or pecuniary or nonpecuniary or staff\* or work\* or job or jobs or employ\* or career\* or profession\* or educat\* or organi?at\*) near benefit\*) or ((medical\* or sick\* or illness\* or ill-health\* or illhealth\* or absen\*) near (leav\* or time-off))) or (((maternity or paternity or parent\* or domestic\* or famil\*) near (leav\* or time-off)) or ((annual or holiday\* or vacation\*) near (leav\* or time-off)) or holiday\*)) and (((Behav\* or organi?ation\*) near (modif\* or motivat\*)) or (performance\* near (improv\* or manag\* or modif\* or enhanc\* or upgrad\*)) or (Chang\* or increas\* or rise\* or rising or rose or rais\* or augment\* or growth\* or grow\* or grew or improv\* or gain\* or motivat\* or promot\* or encourag\* or enhanc\* or boost\* or achiev\* or success\* or succeed\* or accomplish\* or thrive\* or thriving or achiev\* or attain\*)) and (((public near (sector\* or service\* or servant\* or employ\* or worker\* or job or jobs or personnel or staff\* or workforce\* or work force\* or manpower\*)) or ((government\* or civil or council) near (sector\* or service\* or servant\* or employ\* or worker\* or job or jobs or personnel or staff\* or workforce\* or work force\* or manpower\*)) or (pam or pams)) or ((profession\* near allied near medicine) or (profession\* near allied near medicine) or (teacher\* or educator\* or tutor\* or lecturer\*)) or ((school\* near (worker\* or personnel or employ\* or job or jobs or staff\* or workforce\* or work force\* or manpower\*)) or (social worker\*) or (teach\* near (aide\* or assistant\*)))) or (((public near (sector\* or service\* or servant\* or employ\* or worker\* or job or jobs or personnel or staff\* or workforce\* or work force\* or manpower\*)) or ((government\* or civil or council) near (sector\* or service\* or servant\* or employ\* or worker\* or job or jobs or personnel or staff\* or workforce\* or work force\* or manpower\*)) or (pam or pams)) or ((profession\* near allied near medicine) or (profession\* near allied near medicine) or (teacher\* or educator\* or tutor\* or lecturer\*)) or ((school\* near (worker\* or personnel or employ\* or job or jobs or staff\* or workforce\* or work force\* or manpower\*)) or (social worker\*) or (teach\* near (aide\* or assistant\*)))) or (((classroom near (aide\* or assistant\* or personnel or staff\*)) or (nursing or nurse or nurses or matron or matrons or auxillary or auxillaries or midwi\*) or (judge or judges or judicial\* or judiciary or cadre or cadres or magistrat\*)) or ((doctor\* or physician\* or consultant\* or surgeon\* or registrar\* or medic or medics) or (specialist\* or p?ediatrician\* or an?sethetist\*) or (GP or (general near pract\*)) or ((Clinician\* or practitioner\* or Pharmacist\* or paramedic\*) or ((hospital\* or health or surg\* or medical) near (personnel\* or employ\* or worker\* or job or jobs or team\* or staff\* or workforce\* or work force\* or manpower\*)))) and (((south america\* or venezuela\* or colombia\* or ecuador\* or peru or peruvian\* or brazil\*) or (bolivia\* or paraguay\* or chile or chilean\* or uruguay\* or argentin\* or guyana\* or french guiana\*) or (suriname\* or central america\* or belize\* or costa rica\* or el salvador\* or guatemala\* or honduras or honduran\*)) or ((nicaragua\* or panama\* or africa\* or nigeria\* or mozambique or somalia\* or rwanda\* or tanzania\* or uganda\* or zambia\* or angola\*) or (cameroon\* or congo or congan or botswana\* or lesotho\* or zimbabwe\* or namibia\* or swaziland\* or benin or burkino faso) or (gambia\* or ghana\* or senegal\* or liberia\* or sierra leone)) or (((underdeveloped or under-developed or developing) near (econom\* or countr\* or nation\* or health system\*)) or (less near developed near (econom\* or countr\* or nation\* or health system\*)) or (low\* income\* near (countr\* or nation\* or econom\*))) or (((middle\* income\* near (countr\* or nation\* or econom\*)) or ((third world) or (3rd world) or (emerg\* econom\*)) or (medically underserved near (area\* or region\* or countr\* or nation\*))) or ((doctor\* or nurs\* or medic\* or

physician\* or midwi\* or hospital\*) near shortage near (area\* or region\* or countr\* or nation\*)) or TI=(lmic or lmics)) or(AB=(lmic or lmics))))

3921 Published Works results found in Multiple Databases

*EconLit (EBSCO): 2000-2010/11/01*

Searched 16 December 2010

S10 TX s3 and s8 and s9 Search modes - Boolean/Phrase

(0)

S9 TX (doctor\* or nurs\* or medic\* or physician\* or midwi\* or (civil N2 servant\*) or teacher\* or judge or judges or judiciary or cadre or cadres) Search modes - Boolean/Phrase

(19934)

S8 s4 or s5 or s6 or s7 Search modes - Boolean/Phrase

(86034)

S7 TX ( (doctor\* N2 shortage) or (nurs\* N2 shortage) or (medic\* N2 shortage) or (physician\* N2 shortage) or (midwi\* N2 shortage) or (hospital\* N2 shortage) ) and (S4 or S5 or S6) Search modes - Boolean/Phrase

(52)

S6 TX (doctor\* N2 shortage) or (nurs\* N2 shortage) or (medic\* N2 shortage) or (physician\* N2 shortage) or (midwi\* N2 shortage) or (hospital\* N2 shortage) Search modes - Boolean/Phrase

(52)

S5 TX ( (underdeveloped N2 econom\*) or (underdeveloped N2 countr\*) or (underdeveloped N2 nation\*) or (underdeveloped N2 health N2 system\*) ) or TX ( (low\* N2 income\* N2 countr\*) or (low\* N2 income\* N2 nation\*) or (low\* N2 income\* N2 econom\*) or (third N2 world) or (3rd N2 world) or (emerg\* N2 econom\*) ) or TX (medically N2 underserved) Search modes - Boolean/Phrase

(8450)

S4 TX ( gambia\* or ghana\* or senegal\* or liberia\* or venezuela\* or colombia\* or ecuador\* or peru or peruvian\* or brazil\* or bolivia\* or paraguay\* or chile or chilean\* or uruguay\* or argentin\* or guyana\* or uriname\* or belize\* or guatemala\* or honduras or honduran\* or nicaragua\* or panama\* or africa\* or nigeria\* or mozambique or somalia\* or rwanda\* or tanzania\* or uganda\* or zambia\* or angola\* or cameroon\* or congo or congan or botswana\* or lesotho\* or zimbabwe\* or namibia\* or swaziland\* or benin ) or TX ( (sierra N2 leone) or (south N2 america\*) or (french N2 guiana\*) or (central N2 america\*) or (el N2 salvador\*) or (costa N2 rica\*) or (burkino N2 faso) ) or TX ( (developing N2 econom\*) or (developing N2 countr\*) or (developing N2 nation\*) or (developing N2 health system\*) )TX ( gambia\* or ghana\* or senegal\* or liberia\* or venezuela\* or colombia\* or ecuador\* or peru or peruvian\* or brazil\* or bolivia\* or paraguay\* or chile or chilean\* or uruguay\* or argentin\* or guyana\* or uriname\* or belize\* or guatemala\* or honduras or honduran\* or nicaragua\* or panama\* or africa\* or nigeria\* or mozambique or somalia\* or rwanda\* or tanzania\* or uganda\* or zambia\* or angola\* or cameroon\* or congo or congan or botswana\* or lesotho\* or zimbabwe\* or namibia\* or swaziland\* or benin ) Search modes - Boolean/Phrase

(79985)

S3 S1 or S2 Search modes - Boolean/Phrase

(429114)

S2 TX (financ\* N3 incentive\*) or (financ\* N3 perk\*) or (financ\* N3 benefit\*) or PBP or (per N2 diem\*) Search modes - Boolean/Phrase

(1828)

S1 TX ( Salar\* or wage\* or incentiv\* or pay\* or remunerat\* or money or monetary or reward\* or pecuniar\* or nonpecuniar\* or financ\* or bonus or bonuses or pension\* ) or TX ( fee or fees or capita\* or reimburs\* ) or TX retirement N2 fund\*

*Social Science Citation Index (Web of Science): 2000-2010/ 12/ 16*

Searched 16 December 2010

# 13 1,561 #11 not #12

Databases=SSCI Timespan=2000-2010

# 12 27,728 TS=(cat or cats or dog or dogs or animal or animals or rat or rats or hamster or hamster or feline or ovine or canine or bovine or sheep)

Databases=SSCI Timespan=2000-2010

# 11 1,565 #10 AND #9 AND #8

Databases=SSCI Timespan=2000-2010

# 10 >100,000 #7 OR #6 OR #5 OR #4 OR #3

Databases=SSCI Timespan=2000-2010

# 9 >100,000 #2 OR #1

Databases=SSCI Timespan=2000-2010

# 8 >100,000 TS=(doctor\* or nurs\* or medic\* or physician\* or midwi\* or (civil SAME servant\*) or teacher\* or judge or judges or judiciary or cadre or cadres)

Databases=SSCI Timespan=2000-2010

# 7 150 TS=((doctor\* or nurs\* or medic\* or physician\* or midwi\* or hospital\*) SAME shortage SAME (area\* or region\* or countr\* or nation\*))

Databases=SSCI Timespan=2000-2010

# 6 89 TS=(medically SAME underserved SAME (area\* or region\* or countr\* or nation\*))

Databases=SSCI Timespan=2000-2010

# 5 8,553 TS=((less SAME developed SAME (econom\* or countr\* or nation\*)) or (less SAME developed SAME (health SAME system\*)) or ((low\* SAME income\*) SAME (countr\* or nation\* or econom\*)) or ((middle\* SAME income\*) SAME (countr\* or nation\* or econom\*)) or (third SAME world) or (3rd SAME world) or (emerg\* SAME econom\*))

Databases=SSCI Timespan=2000-2010

# 4 26,945 TS=(gambia\* or ghana\* or senegal\* or liberia\* or (sierra SAME leone) or ((underdeveloped or under-developed or developing) SAME (econom\* or countr\* or nation\* or health system\*)))

Databases=SSCI Timespan=2000-2010

# 3 78,741 TS=((south SAME america\*) or venezuela\* or colombia\* or ecuador\* or peru or peruvian\* or brazil\* or bolivia\* or paraguay\* or chile or chilean\* or uruguay\* or argentin\* or guyana\* or (french SAME guiana\*) or (central SAME america\*) or (el SAME salvador\*) or (costa SAME rica\*) or suriname\* or belize\* or guatemala\* or honduras or honduran\* or nicaragua\* or panama\* or africa\* or nigeria\* or mozambique or somalia\* or rwanda\* or tanzania\* or uganda\* or zambia\* or angola\* or cameroon\* or congo or congan or botswana\* or lesotho\* or zimbabwe\* or namibia\* or swaziland\* or benin or (burkino SAME faso))

Databases=SSCI Timespan=2000-2010

# 2 3,026 TS=((financ\* SAME (incentive\* or perk\* or benefit\*)) or PBP or (per SAME diem\*))

Databases=SSCI Timespan=2000-2010

# 1 >100,000 TS=((Salar\* or wage\* or incentiv\* or pay\* or remunerat\* or money or monetary or reward\* or pecuniar\* or nonpecuniar\* or financ\* or bonus or bonuses or pension\* or retirement fund\* or fee or fees or capita\* or reimburs\*))

Databases=SSCI Timespan=2000-2010

*Science Citation Index (Web of Science): 2000-2010/ 12/ 16*

Searched 16 December 2010

# 20 1,987 #18 not #19

Databases=SCI-EXPANDED Timespan=2000-2010

# 19 >100,000 TS=(cat or cats or dog or dogs or animal or animals or rat or rats or hamster or hamster or feline or ovine or canine or bovine or sheep)

Databases=SCI-EXPANDED Timespan=2000-2010

# 18 2,043 #17 OR #15 OR #13 OR #12 OR #11 OR #10

Databases=SCI-EXPANDED Timespan=2000-2010

# 17 51 #16 AND #9

Databases=SCI-EXPANDED Timespan=2000-2010

# 16 28,122 TS=((south SAME america\*) or (french SAME guiana\*) or (central SAME america\*) or (el SAME salvador\*) or (costa SAME rica\*) or (burkino SAME faso))

Databases=SCI-EXPANDED Timespan=2000-2010

# 15 1,109 #14 AND #9

Databases=SCI-EXPANDED Timespan=2000-2010

# 14 >100,000 TS=(venezuela\* or colombia\* or ecuador\* or peru or peruvian\* or brazil\* or bolivia\* or paraguay\* or chile or chilean\* or uruguay\* or argentin\* or guyana\* or uriname\* or belize\* or guatemala\* or honduras or honduran\* or nicaragua\* or panama\* or africa\* or nigeria\* or

mozambique or somalia\* or rwanda\* or tanzania\* or uganda\* or zambia\* or angola\* or cameroon\* or congo or congan or botswana\* or lesotho\* or zimbabwe\* or namibia\* or swaziland\* or benin)

Databases=SCI-EXPANDED Timespan=2000-2010

# 13 217 #9 AND #4

Databases=SCI-EXPANDED Timespan=2000-2010

# 12 16 #9 AND #5

Databases=SCI-EXPANDED Timespan=2000-2010

# 11 34 #9 AND #6

Databases=SCI-EXPANDED Timespan=2000-2010

# 10 965 #9 AND #3

Databases=SCI-EXPANDED Timespan=2000-2010

# 9 23,248 #8 AND #7

Databases=SCI-EXPANDED Timespan=2000-2010

# 8 >100,000 #2 OR #1

Databases=SCI-EXPANDED Timespan=2000-2010

# 7 >100,000 TS=(doctor\* or nurs\* or medic\* or physician\* or midwi\* or (civil SAME servant\*) or teacher\* or judge or judges or judiciary or cadre or cadres)

Databases=SCI-EXPANDED Timespan=2000-2010

# 6 177 TS=((doctor\* or nurs\* or medic\* or physician\* or midwi\* or hospital\*) SAME shortage SAME (area\* or region\* or countr\* or nation\*))

Databases=SCI-EXPANDED Timespan=2000-2010

# 5 118 TS=(medically SAME underserved SAME (area\* or region\* or countr\* or nation\*))

Databases=SCI-EXPANDED Timespan=2000-2010

# 4 6,819 TS=((less SAME developed SAME (econom\* or countr\* or nation\*)) or (less SAME developed SAME (health SAME system\*)) or ((low\* SAME income\*) SAME (countr\* or nation\* or econom\*)) or ((middle\* SAME income\*) SAME (countr\* or nation\* or econom\*)) or (third SAME world) or (3rd SAME world) or (emerg\* SAME econom\*))

Databases=SCI-EXPANDED Timespan=2000-2010

# 3 55,478 TS=(gambia\* or ghana\* or senegal\* or liberia\* or (sierra SAME leone) or ((underdeveloped or under-developed or developing) SAME (econom\* or countr\* or nation\* or health system\*)))

Databases=SCI-EXPANDED Timespan=2000-2010

# 2 3,643 TS=((financ\* SAME (incentive\* or perk\* or benefit\*)) or PBP or (per SAME diem\*))

Databases=SCI-EXPANDED Timespan=2000-2010

# 1 >100,000 TS=((Salar\* or wage\* or incentiv\* or pay\* or remunerat\* or money or monetary or reward\* or pecuniar\* or nonpecuniar\* or financ\* or bonus or bonuses or pension\* or retirement fund\* or fee or fees or capita\* or reimburs\*))

Databases=SCI-EXPANDED Timespan=2000-2010

*The Campbell Library: 2002-2010/ 12/ 17*

<http://www.campbellcollaboration.org/library.php>

Searched 17 December 2010

1. (Salar\* or wage\* or incentiv\* or pay\* or remunerat\* or money or monetary or reward\* or pecuniar\* or nonpecuniar\* or financ\* or bonus or bonuses or pension\* or retirement fund\* or fee or fees or capita\* or reimburs\*) in All text or ((financ\* AND (incentive\* or perk\* or benefit\*)) or PBP or (per AND diem\*)) in All text or (((work\* or job or jobs or employ\*) AND life AND balanc\*) OR ((work\* or job or jobs or employ\*) AND famil\* AND balanc\*)) in All text or (((work\* or job or jobs or employ\*) AND home\* AND balanc\*) or (flexitime or over-time or flexi-time or overtime)) in All text or ((session\* AND payment\*) or (Performance AND (pay\* or bonus\* or award or awards))) in All text or ((flexi\* AND (employ\* or job\* or work\* or leave\* or time-off)) or (work\* AND condition\*) or (sitting AND (allowance\* or benefit\* or pay\* or expense\*))) in All text or ((travel\* AND (allowance\* or benefit\* or pay\* or expense\*)) or ((education\* or development\*) AND (grant\* or fund\* or opportunit\* or aid\*))) in All text or CPD in Title Published from: 2002 Published to: 2010 163

2. ((continu\* AND professional AND develop\*) or (career\* AND (develop\* or progress\* or opportunit\* or reward\*)) or ((Work\* or employ\* or job or jobs or staff\* or profession\*) AND supervis\*) in All text or (((financial\* or pecuniary or nonpecuniary or staff\* or work\* or job or jobs or employ\* or career\* or profession\* or educat\* or organisat\* or organisat\*) AND benefit\*) or ((medical\* or sick\* or illness\* or ill-health\* or illhealth\* or absen\*) AND (leav\* or time-off))) in All text or (((maternity or paternity or parent\* or domestic\* or famil\*) AND (leav\* or time-off)) or ((annual or holiday\* or vacation\*) AND (leav\* or time-off)) or holiday\*) in All text Published from: 2002 Published to: 2010 171

3. 1 or 2 171

4. (((Behav\* or organisation\* or organisation\*) AND (modif\* or motivat\*)) or (performance\* AND (improv\* or manag\* or modif\* or enhanc\* or upgrad\*)) or (Chang\* or increas\* or rise\* or rising or rose or rais\* or augment\* or growth\* or grow\* or grew or improv\* or gain\* or motivat\* or promot\* or encourag\* or enhanc\* or boost\* or achiev\* or success\* or succeed\* or accomplish\* or thrive\* or thriving or achiev\* or attain\*)) in All text Published from: 2002 Published to: 2010 170

5. ((public AND (sector\* or service\* or servant\* or employ\* or worker\* or job or jobs or personnel or staff\* or workforce\* or work force\* or manpower\*)) or ((government\* or civil or council) AND (sector\* or service\* or servant\* or employ\* or worker\* or job or jobs or personnel or staff\* or workforce\* or work force\* or manpower\*)) or (pam or pams)) in All text or ((profession\* AND allied AND medicine) or (teacher\* or educator\* or tutor\* or lecturer\*) or (school\* AND (worker\* or personnel or employ\* or job or jobs or staff\* or workforce\* or work force\* or manpower\*)) or (social AND worker\*)) in All text or ((teach\* AND (aide\* or assistant\*)) or (classroom AND (aide\* or assistant\* or personnel or staff\*)) or (nursing or nurse or nurses or matron or matrons or auxillary or auxillaries or midwi\*) or (judge or judges or judicial\* or judiciary or cadre or cadres or magistrat\*)) in All text or ((doctor\* or physician\* or consultant\* or surgeon\* or registrar\* or medic or medics) or (specialist\* or paediatrician\* or anaesethetist\* or pediatrician\* or anesethetist\*) or

(general AND pract\*) in All text or ((Clinician\* or practitioner\* or Pharmacist\* or paramedic\*) or ((hospital\* or health or surg\* or medical) AND (personnel\* or employ\* or worker\* or job or jobs or team\* or staff\* or workforce\* or work-force\* or manpower\*))) in All text or gp in Title Published from: 2002 Published to: 2010 166

6. ((south AND america\*) or venezuela\* or colombia\* or ecuador\* or peru or peruvian\* or brazil\* or bolivia\* or paraguay\* or chile or chilean\* or uruguay\* or argentin\* or guyana\* or (french AND guiana\*) or (central AND america\*) or (el AND salvador\*) or (costa AND rica\*) or suriname\* or belize\* or guatemala\* or honduras or honduran\* or nicaragua\* or panama\* or africa\* or nigeria\* or mozambique or somalia\* or rwanada\* or tanzania\* or uganda\* or zambia\* or angola\* or cameroon\* or congo or congan or botswana\* or lesotho\* or zimbabwe\* or namibia\* or swaziland\* or benin or (burkino AND faso)) in All text or (gambia\* or ghana\* or senegal\* or liberia\* or (sierra AND leone) or ((underdeveloped or under-developed or developing) AND (econom\* or countr\* or nation\* or health system\*))) in All text or ((less AND developed AND (econom\* or countr\* or nation\*)) or (less AND developed AND (health AND system\*)) or ((low\* AND income\*) AND (countr\* or nation\* or econom\*)) or ((middle\* AND income\*) AND (countr\* or nation\* or econom\*)) or (third AND world) or (3rd AND world) or (emerg\* AND econom\*)) in All text or (lmic or lmic) in Title or (medically AND underserved AND (area\* or region\* or countr\* or nation\*)) in All text or ((doctor\* or nurs\* or medic\* or physician\* or midwi\* or hospital\*) AND shortage AND (area\* or region\* or countr\* or nation\*)) in All text Published from: 2002 Published to: 2010 165

7. 3 and 4 and 5 and 6 161

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