

Appendix 2. The protocol of the Health Care Provider Performance Review

Protocol for a systematic review of the effectiveness and costs of interventions to improve health care provider performance and related health outcomes in low- and middle-income countries

Final

I. PROJECT TITLE

A systematic review of the effectiveness and costs of interventions to improve health care provider performance and related health outcomes in low- and middle-income countries

II. ABBREVIATIONS

BASICS	Basic Support for Institutionalizing Child Survival
CDC	Centers for Disease Control and Prevention
DANIDA	Danish International Development Agency
DFID	U.K. Department for International Development
EPOC	Effective Practice and Organization of care
GAVI	Global Alliance for Vaccines and Immunization
HCP	Health care provider
JHPIEGO	John Hopkins International Education for Reproductive Health
LMICs	Low- and middle-income countries
MSH	Management Sciences for Health
OECD	Organization for Economic Cooperation and Development
PSSMC	Partnership for Social Science in Malaria Control
QAP	Quality Assurance Project
QUORUM	Quality of Reporting of Meta-analyses
UNICEF	United Nations Children's Fund
USAID	U.S. Agency for International Development
WHO	World Health Organization

III. BACKGROUND AND JUSTIFICATION

Each year in low- and middle-income countries (LMICs) millions of children and adults die prematurely [Black, 2003; WHO, 2003] when many interventions exist that can prevent such deaths [Jones, 2003; Travis, 2004]. Low coverage of these interventions has been identified as a critical public health problem [Jones, 2003] and a major obstacle to achieving Millennium Development Goals [Travis, 2004].

Health care providers (HCPs)¹ are a key part of almost any strategy for increasing coverage of health interventions, however performance¹ is often inadequate, as documented in studies of child health [Bryce, 2003; Naimoli, 2001; Rowe, 2001], sexually transmitted diseases [Bitera, 2002], family planning, obstetrics [Goldman, 2003], mental disorders [Abas, 2003], injuries [Bickler, 2002], diabetes [Whiting, 2002], malaria [Ofori-Adjei, 1996; Rowe, 2000; Rowe, 2003; Zurovac, 2004], illnesses managed by private sector health workers [Brugha, 1998; Mills, 2002], and medicine use [Hogerzeil, 1993; Ross-Degnan, 1997; WHO, 2001]. Notably, inadequate care occurs despite substantial efforts by governments, donors, and other partners.

¹ See Annex 1 for definitions.

Improving performance is not only important to prevent errors of omission (e.g., a patient needing a medicine does not receive it), but also to avoid harmful practices (e.g., giving sedatives to children with pneumonia [Rowe, 2001]). Furthermore, some research suggests that improving performance may increase utilization of health services [Arifeen, 2004].

Hundreds of studies in LMICs have evaluated a wide variety of strategies to improve HCP performance; and a systematic review that distills the evidence on the effectiveness and costs can be invaluable for guiding policy to reduce medical errors, focusing programmatic efforts on strategies that are effective, and avoiding those that are not. Perhaps the largest published systematic review [Grimshaw, 2004], which did not intend to exclude studies from LMICs, identified only 3 studies from LMICs—although other studies from LMICs exist. Two systematic reviews focused exclusively on interventions to improve medicine use in LMICs [Ross-Degnan, 1997; WHO, 2001]. Two systematic reviews were descriptive, non-quantitative summaries [Siddiqi, 2005; Amaral, 2008]. Several others focused on specific strategies, such as job aids [Knebel, 2000a; Grace, 2008], self-assessment [Bose, 2001], computer-based training [Knebel, 2000b], distance learning [Knebel, 2001], integration of services [Briggs, 2001], telemedicine [Wootton, 2001], and essential drug programs [Ratanawijitrasin, 2001]; however, some of these reviews included a mix of studies from LMICs and industrialized countries. Furthermore, a key limitation of single-strategy reviews is that most studies have evaluated strategies with multiple components (e.g., training and supervision and job aids); and in such studies, one cannot generally tease apart the individual effectiveness of just one of the components.

Although these reviews represent important contributions, an updated review is needed that includes new research and incorporates methodological advances (e.g., quantitative methods for identifying intervention and study characteristics associated with effectiveness [e.g., to answer questions such as: Which types of training interventions are more successful?]).

On a closely related topic, a need exists for a model or theory that describes (and ideally predicts) HCP practices. Several experts have referred to behavioral theories that might apply to HCP practices [Grol, 1997; Grol & Grimshaw, 2003; Ross-Degnan, 1997; Woodward, 2000]; however, this multiplicity of theories leads to a rather fragmented picture, as no single theory seems to describe HCP practices very comprehensively. Furthermore, these theories have not been validated with empirical evidence from studies of HCPs. The justification for developing a theory to describe HCP practices is that it could be used to develop (or refine) interventions that are more likely to be effective in promoting desirable practices. Stated the opposite way, without a reasonably good model, the only way effective interventions will be developed is via intuition or luck. Even a rough “first generation” theory might be useful for stimulating further research and consequent improvement.

Increased funding for disease-specific initiatives (e.g., via the Global Fund to Fight AIDS, Tuberculosis, and Malaria) provides an enormous opportunity to improve health in LMICs, and strengthening HCP performance has the potential to increase the efficiency and effectiveness of such initiatives. More generally, research on improving HCP performance fits within the larger public health priorities of conducting research to strengthen human resources

for health [Chen, 2004; Narasimhan, 2004] and health systems [Alliance for Health Policy and Systems Research, 2004; Task Force on Health Systems Research, 2004].

IV. OBJECTIVES

Conduct a systematic review of the effectiveness and costs of interventions to improve HCP performance and related health outcomes in LMICs, and produce the following.

- A. A database of studies on improving HCP performance, which could be used by policy-makers and other researchers
- B. A detailed report with fully transparent methods, input data, and results
- C. A list of evidence-based policy recommendations (i.e., guidance on how to implement clinical guidelines in LMICs)
- D. A summary article for publication in a peer-reviewed journal
- E. A research agenda (or a refinement of an existing research agenda) to identify and fill critical knowledge gaps on how to implement clinical guidelines in LMICs
- F. A theory describing HCP practices, which combines existing theories (where appropriate) and emphasizes the empirical evidence that supports the theory (where available)

V. INVESTIGATORS AND CONTRIBUTORS

- A. Names (in alphabetical order)
 1. Charity Akpala, Johns Hopkins Univ. [abstractor]
 2. Sushama Acharya, CDC [abstractor]
 3. Dinorah Calles, CDC [abstractor]
 4. Tashana Carty, CDC [title screener]
 5. John Chalker, Management Sciences for Health (MSH)
 6. Adrijana Corluka, Johns Hopkins Univ. [abstractor]
 7. Di (Didi) Cross, CDC [abstractor]
 8. Bhavya Doshi, CDC [title screener]
 9. Margaret (Meg) Griffith, CDC [abstractor]
 10. Atsumi Hirose, CDC [abstractor]
 11. Kathy Holloway, WHO [co-investigator]
 12. Qing Li, CDC [abstractor]
 13. Connie Liu, Case Western Reserve Univ. [abstractor]
 14. Earl Long, CDC [title screener]
 15. Jason McKnight, CDC [abstractor]
 16. Dawn Osterholt, Cincinnati Children's Hospital [abstractor]
 17. Amy Patterson, Emory Univ. [abstractor]
 18. David Peters, World Bank [co-investigator]
 19. Gabriel Ponce-de-Léon, CDC [title screener]
 20. SM Atiqur (Atiq) Rahman, CDC [abstractor]
 21. Dennis Ross-Degnan, Harvard University [co-investigator]
 22. Alexander Rowe, CDC [primary investigator]
 23. Samantha Rowe, CDC [co-investigator]

24. Nirali Shah, Johns Hopkins Univ. [abstractor]
25. Banafsheh Siadat, World Bank [administrative coordinator]
26. Savitha Subramanian, World Bank [administrative coordinator and title screener]
27. Anilkrishna (Anil) Thota, CDC [abstractor]
28. Jeff Willis, Johns Hopkins Univ. [abstractor]
29. Shannon Wood, CDC [title screener]
30. Karen Wosje, Cincinnati Children's Hospital [abstractor]
31. Chunying Xie, CDC [title screener]

B. Publication and authorship

1. Decisions on who will be an author will be based on Harvard University guidelines (Annex 5). To be a co-author, the individual needs to have: 1) made a substantial intellectual contribution to the conception, design, analysis, and/or interpretation of data; and 2) participated in writing a manuscript. Individuals who have only assisted with data management or data abstraction and individuals who have only provided informal input (e.g., providing comments on a protocol or manuscript) will be a contributor; all such contributors will be named in the Acknowledgment section.
2. There are several potential publications from this project (e.g., summary of the entire review, policy implications, framework/theory of HCP practices, reviews of specific interventions)

C. Responsibilities

1. Drs. Chalker, Holloway, Peters, Ross-Degnan, A. Rowe, and S. Rowe will all help plan, review, and edit the protocol, reports, and manuscripts. Other individuals will assist with these tasks, according to their time and interest.
2. Dr. A. Rowe will document meetings; ensure that group decisions are reflected in the protocol; oversee the literature search, data abstraction, data management, and analysis; and write initial drafts of a report or manuscript. Dr. A. Rowe will be the first author of the main review paper. Other individuals will assist with these tasks, according to their time and interest.

VI. METHODS

- A. General description. This project will be a systematic review of published and unpublished studies meeting minimum study design criteria. Where appropriate, sensitivity analyses will be conducted in which studies that satisfy a slightly less rigorous set of inclusion criteria are added to the main group of included studies. Results will be stratified by a variety of factors (e.g., intervention type, study design characteristics, adequacy of statistical analysis, and study outcome). The methods are based on those used by Ross-Degnan and colleagues [Ross-Degnan, 1997], WHO [WHO, 2001], and Grimshaw and colleagues [Grimshaw, 2004]. The review will adhere to the Quality of Reporting of Meta-analyses (QUORUM) guidelines [Moher, 1999] and guidelines for reporting economic studies [Drummond & Jefferson, 1996]. Development of the theory to explain HCP practices will involve drafting an initial theoretical framework based on existing theories, searching for evidence while conducting the systematic review that

supports or refutes aspects of the initial framework, and refining the initial framework based on evidence gathered during the review.

B. Scope of the review/inclusion & exclusion criteria for studies

1. Timing. For studies identified through the search of electronic databases, studies were included if they were published by May 31, 2006. For studies identified through other methods (personal libraries and search of gray literature), studies were included if they were found by September 15, 2010.
2. Setting. LMICs were defined as either a “low-income” country, “lower-middle-income” country, or an “upper-middle-income” country, according to the World Bank [World Bank website, <http://web.worldbank.org/WBSITE/EXTERNAL/DATASTATISTICS/0,.contentMDK:20421402~menuPK:64133156~pagePK:64133150~piPK:64133175~theSitePK:239419,00.html> accessed October 14, 2005]. See Annex 2 for search strategy.
3. Type of health condition. No exclusions. Performance related to any health condition is acceptable.
4. Type of HCP. Any health facility-based health worker, community health workers (any person who is part of a recognized community health worker program), pharmacists, and shopkeepers who sell medicines. Private sector health workers with at least some medical or para-medical training will also be included. Household-based providers (e.g., a patient’s family or neighbors) are excluded.
5. Type of intervention. Any intervention with at least 1 component that aims to influence HCP performance.
 - a) Note. There are rare situations in which a study should be split into different records (i.e., sub-studies), such that the effect sizes in each record perfectly correspond with the intervention components coded in the record. The Data Coordinator will be consulted to confirm whether and how a study should be split. The situations in which a study should be split into different sub-studies are:
 1. Distinct intervention components in a single study group are implemented far apart in time, not intended to be implemented as a package, with observations between components’ implementation (e.g., 1 “sub-study” [record 1] examines the effect of training only, and another sub-study [record 2] examines the combined effect of training and supervision)
 2. Two intervention groups have different timing of strategies and with observations between components’ implementation, allowing the opportunity for both medium and high priority effect sizes (e.g., one record examines the effect of training only, and another record examines the marginal effect of supervision over training)
 3. An intervention involves facility- and community-level components, with outcomes measured at facility and community levels (e.g., one record examines the effect of facility-level components on facility-level outcomes, and another record examines the effect of both facility- and community-level components on community-level outcomes)

6. Study design.

- a) Studies with at least one “primary” outcome and with one of the following study designs are considered to be of “adequate” design and will be included in the primary analysis:
 - 1. Randomized controlled before-and-after trials
 - 2. Non-randomized controlled before-and-after trials
 - 3. Randomized controlled post-only trials
 - 4. Interrupted time series designs with at least 3 data points before and after the intervention
 - 5. Replicated trials that individually lack an “adequate” design in which replications show consistent results. That is, the same strategies are implemented in 2 or more different places, and each of these replications is evaluated with a before-and-after trial without controls, or a non-randomized post-only trial with controls. A potential example is the study by Chalker [Chalker, 2001]. Results from all replications will be pooled (weighted by the sample size of the replication) to derive a single effect size.
- b) The following will be collected, but analyzed separately, as part of a sensitivity analysis:
 - 1. Interrupted time series designs with <3 data points before and after the intervention (this design includes before-and-after trials without controls—e.g., simple program evaluations). Such studies might have greater validity if there is compelling evidence that the intervention was the only major influence on performance. For example, if the pre- and post-intervention performance measurements are close together in time, there might not be enough time for potentially confounding factors to change (thus, they cannot confound intervention-outcome relationships). We acknowledge that it might be difficult to judge whether there is “compelling evidence that the intervention was the only major influence on performance.”
 - 2. Non-randomized post-only trials with controls. Such studies might have greater validity if there is compelling evidence that the control group was similar to the intervention group. We acknowledge that it might be difficult to judge whether this “compelling” evidence exists.

7. Type of outcomes.

- a) Objective or “direct” measures of HCP behavior, including tasks related to patient assessment, diagnosis and diagnostic testing, medicine use for specific conditions (medicines prescribed; medicines dispensed), general medicine use (medicines prescribed; medicines dispensed), injection practices, counseling (content of counseling; interpersonal quality of communication), referral (recommended referrals; completed referrals), and prevention activities
- b) Patient outcomes, including health outcomes (morbidity, mortality), patient knowledge, patient adherence to therapy, patient satisfaction, and

health care utilization (e.g., number of outpatient, emergency department, or inpatient visits). Note that there needs to be some evidence that HCPs were in the chain of events leading to the health outcome.

- c) Economic outcomes, including cost of medicines, and costs of outpatient, emergency department, or inpatient visits
 - d) “Intermediate” outcomes, including HCP knowledge, HCP skills, and drug supply
 - e) Note 1. Results from studies that only report on health outcomes (e.g., community health worker studies that only report the impact on child mortality) might be analyzed separately from studies that include process indicators of HCP performance.
 - f) Note 2. Results from studies that only report on performance indicators that are not based on a specific guideline (e.g., “% of all patients receiving an antibiotic” when the study did not assess whether or not patients needed an antibiotic) might be analyzed separately from studies in which performance outcomes are based on a specific guideline.
 - g) Note 3. Results from studies that only report on “intermediate” outcomes (e.g., HCP knowledge) might be analyzed separately from studies that include more direct indicators of HCP performance.
 - h) Note 4. Outcomes that are excluded: 1) outcomes that are not compared between ≥ 2 study groups or are not compared over time in one study group (e.g., outcomes that are reported as the combined result of all study groups and thus no effect size can be calculated); 2) outcomes that involve < 20 observations per study group and time point in all comparisons; 3) outcomes that are similar to another outcome that was already abstracted (e.g., exclude the complement or subgroup-specific results of an already-abstracted outcome)²; 4) outcomes whose results were extrapolated from a model (e.g., simulation study) and not actually observed data; and 5) outcomes with methodological problems such that their measures are not interpretable³.
8. Outcome measures: Generally, all outcome measures are abstracted. However, when the abstraction of all measures seems onerous (e.g., a randomized controlled post-only trial that involves > 5 measures per outcome), the Data Coordinator will be consulted to consider whether fewer measures per outcome might be abstracted (e.g., only abstract first, median, and final post-intervention measures). Note that for interrupted time series studies, all outcome measures are abstracted.
9. Sample size. No exclusion criteria, but sample size of studies will be examined at the time of analysis to determine if any need to be excluded. Note that all

² If the subgroup-specific indicators are well-accepted indicators of impact or are indicators that reflect the different standard treatment guidelines for each subgroup, these subgroup-specific outcomes should be included. For example, in a study of febrile patients, “% of patients aged < 5 years treated correctly” and “% of patients aged 5+ years treated correctly” should be included because fever treatment guidelines differ for children and older patients.

³ For example, in a study in which pregnant women are recommended to receive both antenatal and postnatal care, exclude “% of women who had only antenatal care visits” because a decrease in this outcome could be due to an increase in good behavior (% of women who had both antenatal and postnatal care visits) or an increase in bad behavior (% of women who had neither antenatal nor postnatal visits).

comparisons (e.g., study group 1 vs. study group 2) must have ≥ 20 observations per study group and time point.

10. Adequacy of statistical analysis. No exclusion criteria, but results of studies with inadequate analyses (especially “unit of analysis error,” e.g., ignoring correlation when there are multiple consultations per HCP) might be: displayed differently from studies with adequate analyses, adjusted (e.g., given a lower relative weight), or removed in a sensitivity analysis.
11. Language. No restriction on language of the studies.

C. Search strategy⁴

1. Search 15 electronic databases, including: Campbell Collaboration, CINAHL (Cumulative Index to Nursing & Allied Health Literature), Cochrane Library (which includes Database of Abstracts of Review of Effects (DARE) and the Cochrane Central Register of Controlled Trials (CENTRAL)), Dissertation Abstracts (for theses and dissertations), EconLit, Eldis, EMBASE, the Effective Practice and Organization of Care (EPOC) specialized register, ERIC (Education Resources Information Center), Global Health, HMIC (The Healthcare Management Information Consortium), MEDLINE, SCI (Science Citation Index), Sociological Abstracts, and SSCI (Social Sciences Citation Index). Use an iterative approach (see Annex 2 for details). [Note: we intentionally did not search Healthline (because it is a consumer health website and we did not expect to find many relevant results), Healthstar (by the time of our search, its data had been merged into MEDLINE, which we were already searching), and SIGLE (because its primarily contained gray literature on studies from high-income countries)]
 - a) Perform initial electronic search based on the INRUD strategy (after modification to expand outcomes beyond drug use)
 - b) Compare results against a list of known studies that meet the inclusion criteria
 - c) Revise and implement the search strategy to increase sensitivity
 - d) Add additional search terms from World Bank staff and re-ran the search
2. Bibliographies of previous systematic reviews and other related papers. See Annex 2 for details.
3. Hand search of the INRUD bibliography (as of February 12, 2007) and Kathy Holloway’s database (as of June 27, 2007).
4. Searches of document inventories and websites of organizations involved in implementing interventions to improve HCP performance. See Annex 2 for details.
5. Contact colleagues and ask for references and unpublished studies (Annex 2).

⁴ In addition to the five methods described in this section, the investigators had planned to perform a hand-search of 30 key journals (i.e., the 15 journals that are most and the 15 journals that are least commonly represented among studies that are known to meet the inclusion criteria). However, as this method would have required searching 158,000 titles (for journal issues published from 1980 to 2008) and staff time was limited, the investigators decided to drop this method.

D. Data abstraction (see Annex 3 for details)

1. Basic descriptive aspects of studies
2. “Contextual” factors (see Annex 4)
3. Quality criteria (see Annex 3)
4. Details on analysis: estimate of the effect in each group, standard error of the estimate of effect, significance level, appropriateness of analysis method (correct or incorrect), description of any analysis problem
5. Data from each study will be abstracted twice (by 2 different investigators) onto forms. Data abstracted by the 2 investigators will be compared and discrepancies will be reconciled (with consultation with a third investigator, if necessary). Data from the final version of the completed abstraction form will be stored as a Microsoft Access file (Microsoft Inc. Redmond, Washington).

E. Data collection from study investigators

1. Contextual factors. See bullet VI.D.2. Contextual factors may not be in published articles or unpublished reports, and an attempt will be made to obtain this information from study investigators.
2. Qualitative data collection on factors that influenced intervention effectiveness. Study investigators may have well-informed and reasonably valid opinions about the factors that influenced the effectiveness of the intervention they examined, and such factors may not have been included (or were only briefly mentioned) in a published article or unpublished report. An attempt will be made to obtain this information from study investigators. (See Annex 4 for details.)

F. Analysis

1. Descriptive analysis

a) Definition of effect size for dichotomous outcomes

1. $\text{Effect size} = (\%POST - \%PRE)_{\text{intervention}} - (\%POST - \%PRE)_{\text{reference}}$
2. If there is no reference study group, but there is a pre- and post-intervention measurement, $\text{effect size} = (\%POST - \%PRE)_{\text{intervention}}$
3. If there are no baseline measurements, but there is a reference group, $\text{effect size} = (\%POST)_{\text{intervention}} - (\%POST)_{\text{reference}}$

b) Definition of effect size for outcomes that are a percentage for each patient or subject

1. Summarize multiple observations as a mean percentage. $\text{Effect size} = (\%POST - \%PRE)_{\text{intervention}} - (\%POST - \%PRE)_{\text{reference}}$
2. If there is no reference study group, but there is a pre- and post-intervention measurement, $\text{effect size} = (\%POST - \%PRE)_{\text{intervention}}$
3. If there are no baseline measurements, but there is a reference group, $\text{effect size} = (\%POST)_{\text{intervention}} - (\%POST)_{\text{reference}}$

c) Definition of effect size for outcomes that are continuous, but obviously bounded (e.g., knowledge score from 0 to 50) and summarized as a mean score

1. Convert the mean score to a percentage by dividing the mean score by the maximum possible score. Effect size = $(\%POST - \%PRE)_{intervention} - (\%POST - \%PRE)_{reference}$
 2. If there is no reference study group, but there is a pre- and post-intervention measurement, then convert the mean score to a percentage by dividing the mean score by the maximum possible score. Effect size = $(\%POST - \%PRE)_{intervention}$
 3. If there are no baseline measurements, but there is a reference group, then convert the mean score to a percentage by dividing the mean score by the maximum possible score. Effect size = $(\%POST)_{intervention} - (\%POST)_{reference}$
 4. Note 1. The maximum possible score must be the same for all subjects.
 5. Note 2. If minimum possible score is not zero, then shift mean scores so minimum = zero (e.g., if score ranges from -10 to +10, then add 10 to all results, so the range is shifted to 0 to +20).
- d) Definition of effect size for outcomes that are continuous, but not obviously bounded (e.g., mortality rate)
1. Effect size = $100\% * \{ ([POST - PRE] / PRE)_{intervention} - ([POST - PRE] / PRE)_{reference} \}$
 2. If there is no reference study group, but there is a pre- and post-intervention measurement, effect size = $100\% * ([POST - PRE] / PRE)_{intervention}$
 3. If there are no baseline measurements, but there is a reference group, effect size = $100\% * (POST_{intervention} - POST_{reference}) / POST_{reference}$
- e) For the analysis of interrupted time series studies, see Annex 6
- f) Other possible methods, as appropriate
1. Relative differences
 2. $[(POST - PRE)_{intervention} - (POST - PRE)_{reference}] / \text{standard deviations of pre-intervention measurements (i.e., average of intervention and control groups)}$
 3. Standardized mean difference (SMD), from Grimshaw et al. (page 75) where $SMD = (POST_{intervention} - POST_{reference}) / \text{standard deviation of } PRE_{reference}$
- g) Note 1. Studies often have multiple outcomes and multiple potential effect sizes. This review will analyze only one “best” effect size per study. To identify a study’s “best” effect size, outcomes will be categorized as “primary” or other; and effect sizes will be categorized as high, medium, or low.
1. Categorizing outcomes. Analyses will be conducted on the “primary” outcome of the study (i.e., as identified by investigators, or as clearly indicated by the subject of the study). If more than one primary outcome is described, then a median of primary outcomes will be calculated. If no primary outcomes can be

identified, then median will be calculated of all relevant outcomes that are reported.

2. Categorizing effect sizes. Effect sizes will be categorized as high, medium, or low priority. For each study, the highest category effect size (or median of effects sizes, if more than one) will be included in the final analysis.
 - a. High priority means the effect size compares an intervention and non-intervention control group and is from an adequate design study and the post-intervention measurement taken furthest from the time of intervention.
 - b. Medium priority means the effect size compares 2 intervention groups (rather than between an intervention group and control group) and is from an adequate design study and the post-intervention measurement taken furthest from the time of intervention.
 - c. Low priority means all other types of effect sizes.
- h) Note 2. Regarding sample size, all comparisons (e.g., study group 1 vs. study group 2) must have ≥ 20 observations per study group and time point.
- i) Note 3. The effect size expression (arithmetic difference of differences—see section VI.F.1.a) can lead to problematic results when the outcome worsens in the control group. Here are two examples.
 1. Effect sizes can have values ranging from -200 percentage points (if $PRE_{\text{control}} = 0\%$, $POST_{\text{control}} = 100\%$, $PRE_{\text{intervention}} = 100\%$, and $POST_{\text{intervention}} = 0\%$) to $+200$ percentage points (if $PRE_{\text{control}} = 100\%$, $POST_{\text{control}} = 0\%$, $PRE_{\text{intervention}} = 0\%$, and $POST_{\text{intervention}} = 100\%$). Effect sizes that are greater than 100 percentage points or substantially less than zero can be difficult to interpret. Such results generally require that the outcome worsened in the control group over time. In these instances, the plausibility of such worsening should be carefully explored.
 2. Positive effect sizes of a “reasonable” magnitude (e.g., $+25$ percentage points) could result from no change in the intervention group (e.g., $PRE_{\text{intervention}} = 55\%$ and $POST_{\text{intervention}} = 55\%$), but a worsening in the control group (e.g., $PRE_{\text{control}} = 60\%$ and $POST_{\text{control}} = 35\%$). As above, in these instances, the plausibility of such worsening should be carefully explored.
- j) Note 4. Some studies report results separately for replications of the same basic study (i.e., same strategies implemented in the same setting). For example, Weinberg et al. (2001) studies the effect of a continuous quality improvement strategy in two similar hospitals in Bogotá, Colombia. Reporting results separately can be useful for showing how the same strategy can have different effects in different facilities (or for different HCPs). However, for this review, an effort will be made to combine such results. The justification is that results for larger groups of health facilities or HCPs are more generalizable than results for an

individual health facility or HCP. One could argue that the effect of a strategy will always vary at least somewhat among facilities or HCPs, and thus results should be presented separately. However, it is because results will vary that combining results can improve generalizability.

- k) Note 5: If the baseline measurement of a continuous, unbounded outcome (e.g., number of IUDs inserted per month) for a study group is zero, the effect size is $[\text{POST} - \text{PRE}]_{\text{intervention}} - [\text{POST} - \text{PRE}]_{\text{reference}}$, rather than $100\% * \{ ([\text{POST} - \text{PRE}] / \text{PRE})_{\text{intervention}} - ([\text{POST} - \text{PRE}] / \text{PRE})_{\text{reference}} \}$. For example, if $\text{PRE}_{\text{intervention}} = 0$, $\text{POST}_{\text{intervention}} = 21$, $\text{PRE}_{\text{reference}} = 1$, and $\text{POST}_{\text{reference}} = 10$; then effect size = $(21-0) - (10-1) = 12$. Note that these effect sizes will be analyzed separately from others because their units will be different.
- l) Note 6: For continuous, unbounded outcomes in which only the before-and-after differences in each study group are available (i.e., individual baseline and follow-up measures are not available), the effect size is $100\% * ([\text{POST} - \text{PRE}]_{\text{intervention}} - [\text{POST} - \text{PRE}]_{\text{reference}}) / ([\text{POST} - \text{PRE}]_{\text{reference}})$. For example, if $[\text{POST} - \text{PRE}]_{\text{intervention}} = 20$ and $[\text{POST} - \text{PRE}]_{\text{reference}} = 10$, then effect size = $100\% * (20-10)/10 = 100\%$ -points. In essence, the before-and-after difference is the “outcome”.
- m) Note 7: Since May 17, 2010, only high- or medium-priority effect sizes are abstracted. However, the database will include all outcome measures, even those that contribute to low-priority effect sizes. Thus, database users will have the data needed to calculate the low-priority effect sizes.

2. Other analyses

- a) Analyze strength of study design and adequacy of statistical analyses over time (e.g., studies from 1980s vs. 1990s vs. 2000s)
- b) Meta-analysis, if studies are combinable
- c) Identification of study and intervention characteristics (including contextual factors) associated with cost or effectiveness
- d) Analyses of “positive deviance” case studies—i.e., studies that managed to increase outcomes to close to 100% (e.g., Chalker, 2001; and Weinberg et al., 2001) or studies with effect sizes >50 percentage points.

VII. REFERENCES

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ANNEX 1. Definitions

Determinants of HCP performance include interventions designed to improve performance (e.g., training) and any other factor that could influence performance (e.g., HCP's age, cadre, or severity of a patient's illness).

Health care providers (HCPs) include any health facility-based health worker, community health workers (any person who is part of a recognized community health worker program), pharmacists, and shopkeepers and informal vendors who sell medicines. Private sector health workers with at least some medical or para-medical training will also be included.

Health facility means any building in which health services are delivered, from small health posts to large, tertiary care hospitals.

Managers are all health facility staff and their supervisors (at any level of the health system, and including professional staff, non-professional staff, and administrators) who perform managerial or supervisory functions for health workers, regardless of whether or not the functions are part of the person's official duties.

Medical errors are deviations from an accepted standard of practice, recognizing that some errors are clearly more serious than others (e.g., major versus minor treatment errors [Rowe, 2003]).

Performance includes both clinical competence (e.g., adherence to a policy, standard, or clinical practice guideline) and interpersonal skills (i.e., HCPs treat patients and clients with kindness and respect, and HCPs motivate patients and clients to follow the HCP's instructions). For the purposes of this review, performance includes both adherence to a policy or guideline as well as more general performance indicators that are not necessarily linked to a specific policy or guideline (e.g., "% of all patients receiving an antibiotic" when the study did not assess whether or not patients needed an antibiotic).

Private health workers or *workers in the private health sector* are "all providers who exist outside the public sector, whether their aim is philanthropic or commercial, and whose aim is to treat illness or prevent disease." [Mills, 2002]

ANNEX 2. Details of the search strategy

We developed a strategy to maximize our ability to identify articles that were relevant to our review. This appendix describes the development of this search strategy.

A.1. Development of a gold standard list of studies

First, we created a list of “gold standard” studies, studies we considered to meet the inclusion criteria for this review. Our gold standard list comprised of studies on health care provider behavior change strategies cited in the bibliographies of the following 4 reviews:

Loevinsohn B, Harding A. Buying results? Contracting for health service delivery in developing countries. *Lancet* 2005; 366: 676–681.

Ross-Degnan D, Laing R, Santoso B, Ofori-Adjei D, Lamoureux C, Hogerzeil H. Improving pharmaceutical use in primary care in developing counties: a critical review of experience and lack of experience. Presented at the International Conference on Improving Use of Medicines, Chiang Mai, Thailand, April 1997.

Siddiqi K, Newell J, Robinson M. Getting evidence into practice: what works in developing countries? *International Journal for Quality in Health Care* 2005; 17(5): 447–453.

WHO. Interventions and strategies to improve the use of antimicrobials in developing countries: a review. World Health Organization 2001, WHO/CDS/CSR/DRS/2001.9.

Our gold standard set contained 118 references, 84 of which were contained in electronic databases (the remaining gold standard articles were book chapters or unpublished reports).

A.2. Development of an electronic search strategy

Next, we developed an electronic search strategy to maximize the search’s ability to retrieve gold standard articles that were contained in electronic databases.

We conducted electronic searches of 3 databases:

- 1) Medical Literature Analysis and Retrieval System Online (MEDLINE [1951 – November 4, 2005])
- 2) Excerpta Medica Database (EMBASE [1980 – November 4, 2005])
- 3) Cumulative Index to Nursing and Allied Health Literature (CINAHL [1982 – November 4, 2005])

To link with and search the MEDLINE database, we used PubMed. To link with and search the EMBASE and CINAHL databases, we used OVID.

As a baseline test, we used the strategy developed by Ross-Degnan et al. to search MEDLINE, EMBASE, and CINAHL. This test identified only 12% of the gold standard articles contained in

the electronic databases. To improve the search's sensitivity, we modified the strategy by Ross-Degnan et al. by: 1) eliminating the steps that searched specifically for drug studies and certain types of common illnesses, and 2) revising the terms to identify developing countries. We also reviewed the Medical Subject Heading (MeSH) terms and keywords of the gold standard articles that had not been retrieved to identify words to be added to the search term list. Several iterations of electronic searching, reviewing MeSH terms and keywords, and revising the search terms resulted in a strategy that identified 63 of the 84 gold standard articles contained in electronic databases, giving a **sensitivity of 75%**. This strategy retrieved a total of **19,648 articles**.

We used this strategy as a basis for the strategies for the Cochrane Library/EPOC, Dissertation Abstracts, EconLit, Eldis, and SCI/Web of Science databases. The strategies for searching CINAHL, Cochrane Library/EPOC, Dissertation Abstracts, EconLit, Eldis, ERIC, EMBASE, MEDLINE (via PubMed), and SCI/Web of Science without additional World Bank terms are listed below.

CINAHL and EMBASE (via OVID)

(Community Care/ or Health Care Personnel/ or Health Care Facility/ or health worker(s).ti)
AND
(Continuing Education or Medical Education or Paramedical Education or Medical Audit or Practice Guidelines or intervention.ti or audit.ti or training.ti)

Cochrane Library and EPOC

(community health services / health personnel / health services research / pharmaceutical services / pharmacy services, hospital)
AND
(education, continuing / health care costs / health education / health knowledge, attitudes, practice / inservice training / quality assurance, health care / audit / impact / training / intervention)

Dissertation Abstracts

(Health care or Health education)
AND
(education or treatment guidelines or training or educational or standard treatment or treatment practices or audit or compliance or continuing education or evaluation or program evaluation or quality assurance or health care quality)

EconLit

(health facilities or community health or medical student(s) or health workers or public services or public physicians or primary medical care or family physicians or public health facilities or rural health or primary health care or medical auxiliaries or health staff or medical assistants or health systems or pharmacists or hospital or health aides or health services or family practice or health personnel or physician(s) or health centres or private practice or voluntary workers or

health care providers or health post(s))

AND

(treatment or guidelines or training or educational or workshops or standard management or structured care or seminar or assessment or audit or compliance or evaluation or program evaluation or quality assurance or quality health care)

AND

(Asia or West Indies or Polynesia or Micronesia or Middle East or Africa or Latin America or Central America or South America or Caribbean or West Indies region or Hispaniola or Southeast Asia or Sub-Saharan Africa or Eastern Europe or the Balkans)

Eldis

(hospital / aides / health services / practice / personnel / facilities / workers / physicians)

AND

(intervention / education / training / implementation / standard care / standard treatment / guidelines)

ERIC

(hospital(s) or health or family practice or personnel or physician(s) or medical student(s) or medical or medicine)

AND

(intervention or education or training or implementation or guidelines or educational Practices or workshop(s) or seminar(s))

MEDLINE (via PubMed)

1. (children's hospital[ti] or community health services[majr:noexp] or doctor(s)[tiab] or health personnel[mesh] or health posts[tiab] or health services research[mesh:noexp] or health workers[tiab] or hospital(s)[tiab] or medical students[ti] or obstetric care[ti] or pharmaceutical services[majr:noexp] or pharmacy service, hospital[majr:noexp] or physicians[tiab] or primary health care[tiab] or primary health centres[tiab] or providers[ti])

2. (audit[ti] or education, continuing[mesh] or health care costs[mesh] or health education[mesh] or health knowledge, attitudes, practice[mesh] or impact[ti] or inservice training[mesh] or intervention[tiab] or quality assurance, health care[mesh] or training[ti])

3. ((Afghanistan or Bangladesh or Benin or Bhutan or Burkina Faso or Burundi or Cambodia or Cameroon or Central African Republic or Chad or Comoros or Congo or the Democratic Republic of Congo or Cote d'Ivoire or Eritrea or Ethiopia or The Gambia or Ghana or Guinea or Guinea-Bissau or Haiti or India or Kenya or Democratic Republic of Korea or Kyrgyzstan Republic or Lao PDR or Lesotho or Liberia or Madagascar or Malawi or Mali or Mauritania or Moldova or Mongolia or Mozambique or Myanmar or Nepal or Nicaragua or Niger or Nigeria or North Korea or Pakistan or Papua New Guinea or Rwanda or Sao Tome and Principe or Senegal or Sierra Leone or Solomon Islands or Somalia or Sudan or Tajikistan or Tanzania or Timor-Leste or Togo or Uganda or Uzbekistan or Vietnam or Yemen or Republic of Yemen or Zaire or

Zambia or Zimbabwe) or (Albania or Algeria or Angola or Armenia or Azerbaijan or Belarus or Bolivia or Bosnia and Herzegovina or Brazil or Bulgaria or Cape Verde or China or Colombia or Cuba or Djibouti or Dominican Republic or Ecuador or Egypt or Arab Republic of Egypt or El Salvador or Fiji or Georgia or Guatemala or Guyana or Honduras or Indonesia or Iran or Islamic Republic of Iran or Iraq or Jamaica or Jordan or Kazakhstan or Kiribati or Macedonia or FYR of Macedonia or Former Yugoslav Republic of Macedonia or Maldives or Marshall Islands or Micronesia or Federated States of Micronesia or Morocco or Namibia or Paraguay or Peru or Philippines or Romania or Samoa or Serbia and Montenegro or Sri Lanka or Suriname or Swaziland or Syrian Arab Republic or Syria or Thailand or Tonga or Tunisia or Turkmenistan or Ukraine or Vanuatu or West Bank and Gaza) or (American Samoa or Antigua and Barbuda or Argentina or Barbados or Belize or Botswana or Chile or Costa Rica or Croatia or Czech Republic or Dominica or Equatorial Guinea or Estonia or Gabon or Grenada or Hungary or Latvia or Lebanon or Libya or Lithuania or Malaysia or Mauritius or Mayotte or Mexico or Northern Mariana Islands or Oman or Palau or Panama or Poland or Russian Federation or Seychelles or Slovak Republic or South Africa or St. Kitts and Nevis or St. Lucia or St. Vincent and the Grenadines or Trinidad and Tobago or Turkey or Uruguay or Venezuela or Bolivarian Republic of Venezuela))

4. (developing countries or less developed countries or third-world countries or under-developed countries or poor countries or less developed countries or under developed countries or less developed nations or third world nations or under developed nations or developing nations or poor nations or poor economies or third world economies or developing economies or under developed economies or less developed economies)

5. (Burma or Czechoslovakia or Democratic Republic of Congo or French Guiana or East Timor or Laos or North Korea or Ivory Coast or Republic of Georgia or Republic of Yemen or Republic of Zaire or Slovakia or Soviet Union or Surinam or USSR or West Samoa or Yugoslavia or Zaire)

6. (Asia or West Indies or Polynesia or Micronesia or Middle East or Africa or Latin America or Central America or South America or Caribbean or West Indies region or Hispanola or Southeast Asia or Sub-Saharan Africa or Eastern Europe or the Balkans)

7. #3 or #4 or #5 or #6

8. #1 and #2 and #7

SCI/Web of Science

(community health or community-based or family physicians or family practice or health aides or health centers or health centres or health facilities or health personnel or health posts or health provider(s) or health services or health staff or health systems or health workers or hospital or medical assistants or medical auxiliaries or medical student(s) or pharmacists or physician(s) or primary health care or primary medical care or private practitioner or public health facilities or public physicians or public services or regional hospitals or rural health or teaching hospitals or voluntary workers)

AND

(health care quality or health education or impact or implementation or intervention or participatory action or practice guidelines or program evaluation or quality assurance or seminar or standard management or standard treatment or standards or structured care or training or treatment guidelines or treatment practices or utilization or workshops)

AND

((Afghanistan or Bangladesh or Benin or Bhutan or Burkina Faso or Burundi or Cambodia or Cameroon or Central African Republic or Chad or Comoros or Congo or the Democratic Republic of Congo or Cote d'Ivoire or Eritrea or Ethiopia or The Gambia or Ghana or Guinea or Guinea-Bissau or Haiti or India or Kenya or Democratic Republic of Korea or Kyrgyzstan or Lao PDR or Lesotho or Liberia or Madagascar or Malawi or Mali or Mauritania or Moldova or Mongolia or Mozambique or Myanmar or Nepal or Nicaragua or Niger or Nigeria or North Korea or Pakistan or Papua New Guinea or Rwanda or Sao Tome and Principe or Senegal or Sierra Leone or Solomon Islands or Somalia or Sudan or Tajikistan or Tanzania or Timor-Leste or Togo or Uganda or Uzbekistan or Vietnam or Yemen or Republic of Yemen or Zaire or Zambia or Zimbabwe) or (Albania or Algeria or Angola or Armenia or Azerbaijan or Belarus or Bolivia or Bosnia and Herzegovina or Brazil or Bulgaria or Cape Verde or China or Colombia or Cuba or Djibouti or Dominican Republic or Ecuador or Egypt or Arab Republic of Egypt or El Salvador or Fiji or Georgia or Guatemala or Guyana or Honduras or Indonesia or Iran or Islamic Republic of Iran or Iraq or Jamaica or Jordan or Kazakhstan or Kiribati or Macedonia or FYR of Macedonia or Former Yugoslav Republic of Macedonia or Maldives or Marshall Islands or Micronesia or Federated States of Micronesia or Morocco or Namibia or Paraguay or Peru or Philippines or Romania or Samoa or Serbia and Montenegro or Sri Lanka or Suriname or Swaziland or Syrian Arab Republic or Syria or Thailand or Tonga or Tunisia or Turkmenistan or Ukraine or Vanuatu or West Bank and Gaza) or (American Samoa or Antigua and Barbuda or Argentina or Barbados or Belize or Botswana or Chile or Costa Rica or Croatia or Czech Republic or Dominica or Equatorial Guinea or Estonia or Gabon or Grenada or Hungary or Latvia or Lebanon or Libya or Lithuania or Malaysia or Mauritius or Mayotte or Mexico or Northern Mariana Islands or Oman or Palau or Panama or Poland or Russian Federation or Seychelles or Slovak Republic or South Africa or St. Kitts and Nevis or St. Lucia or St. Vincent and the Grenadines or Trinidad and Tobago or Turkey or Uruguay or Venezuela or Bolivarian Republic of Venezuela))

We added search terms recommended by World Bank colleagues and re-ran the electronic search. The strategy retrieved 68 of the gold standard articles, resulting in a final sensitivity of 81% (68/84).

With the World Bank terms added, the strategies for searching Campbell Collaboration, CINAHL, Cochrane Library, Dissertation Abstracts, EconLit, Eldis, EMBASE, ERIC, HMIC, MEDLINE (via PubMed), Science Citation Index/Web of Science/SSCI/Global Health, and Sociological Abstracts are listed below:

Campbell Collaboration

AFGHANISTAN OR BANGLADESH OR BENIN OR BHUTAN OR BURKINAFASO OR BURUNDI OR
CAMBODIA OR CAMEROON OR CENTRAL AFRICAN REPUBLIC OR CHAD OR COMOROS OR
CONGO OR COTE D'IVOIRE OR ERITREA OR COTE D'IVOIRE OR ETHIOPIA OR
GAMBIA OR GHANA OR GUINEA OR HAITI OR INDIA OR KENYA OR KOREA
OR KYRGYSZSTAN OR LAO OR LAOS OR LESOTHO OR LIBERIA OR
MADAGASCAR OR MALAWI OR MALI OR MAURITANIA OR MOLDOVA OR
MONGOLIA OR MOZAMBIQUE OR MYANMAR OR NEPAL OR NICARAGUA OR
NIGER OR NIGERIA OR PAKISTAN OR RWANDA OR SAO TOME OR SENEGAL OR
SIERRA LEONE OR SOLOMON ISLANDS OR SOMALIA OR SUDAN OR
TAJIKISTAN OR TANZANIA OR TIMOR OR TOGO OR UGANDA OR UZBEKISTAN OR VIETNAM OR
YEMEN OR ZAIRE OR ZAMBIA OR ZIMBABWE OR
ALBANIA OR ALGERIA OR ANGOLA OR ARMENIA OR AZERBAIJAN OR
BELARUS OR BOLIVIA OR BOSNIA OR HERZEGOVINA OR BRAZIL OR
BULGARIA OR CAPE VERDE OR CHINA OR COLOMBIA OR CUBA OR
DJIBOUTI OR DOMINICAN REPUBLIC OR ECUADOR OR EGYPT OR
EL SALVADOR OR FIJI OR GEORGIA OR GUATEMALA OR GUYANA OR HONDURAS OR
INDONESIA OR IRAN OR IRAQ OR JAMAICA OR JORDAN OR
KAZAKHSTAN OR KIRIBATI OR MACEDONIA OR MALDIVES OR MARSHALL
ISLANDS OR MICRONESIA OR MOROCCO OR NAMIBIA OR PARAGUAY OR
PERU OR PHILIPPINES OR ROMANIA OR SAMOA OR SERBIA OR MONTENEGRO OR
SRI LANKA OR SURINAME OR SWAZILAND OR SYRIA OR
THAILAND OR TONGA OR TUNISIA OR TURKMENISTAN OR UKRAINE OR
VANUATU OR WEST BANK OR GAZA OR
ANTIGUA OR BARBUDA OR ARGENTINA OR BARBADOS OR BELIZE OR
BOTSWANA OR CHILE OR COSTA RICA OR CROATIA OR CZECH REPUBLIC
OR DOMINICA OR EQUATORIAL GUINEA OR ESTONIA OR GABON OR
GRENADA OR HUNGARY OR LATVIA OR LEBANON OR LIBYA OR LITHUANIA OR
MALAYSIA OR MAURITIUS OR MAYOTTE OR MEXICO OR MARIANA ISLANDS OR OMAN OR PALAU
OR PANAMA OR POLAND OR RUSSIAN FEDERATION OR SEYCHELLES OR SLOVAK REPUBLIC OR
SOUTH AFRICA OR ST. KITTS OR ST KITTS OR NEVIS OR ST. LUCIA OR ST LUCIA OR
ST. VINCENT OR ST VINCENT OR GRENADINES OR TRINIDAD OR TOBAGO OR TURKEY
OR URUGUAY OR VENEZUELA OR
ASIA OR WEST INDIES OR POLYNESIA OR MICRONESIA OR MIDDLE
EAST OR AFRICA OR LATIN AMERICA OR CENTRAL AMERICA OR SOUTH
AMERICA OR CARIBBEAN OR WEST INDIES REGION OR HISPANIOLA OR
SOUTHEAST ASIA OR SUBSAHARAN AFRICA OR EASTERN EUROPE OR
HISPANIOLA OR
BURMA OR EAST TIMOR OR CONGO OR GUIANA OR CZECHOSLOVAKIA
OR LAOS OR NORTH KOREA OR IVORY COAST OR REPUBLIC OF GEORGIA
OR YEMEN OR ZAIRE OR SLOVAKIA OR SOVIET UNION OR SURINAM
OR USSR OR SAMOA OR YUGOSLAVIA OR
DEVELOPING NATIONS OR DEVELOPING COUNTRIES OR LESS DEVELOPED
NATIONS OR LESS DEVELOPED COUNTRIES OR THIRD WORLD NATIONS OR THIRD
WORLD COUNTRIES OR UNDERDEVELOPED NATIONS UNDERDEVELOPED COUNTRIES OR
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MIDWIFE OR MIDWIVES OR PROFESSIONAL OR NURSE OR NURSES OR PRACTITIONER OR
PRACTITIONERS OR THERAPIST OR THERAPISTS OR ATTENDANT OR ATTENDANTS OR
HOSPITAL OR HOSPITALS OR POST OR POSTS OR
CENTER OR FACILITIES OR FACILITY OR SERVICE OR COMMUNITY




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VOCATIONAL OR CAREER OR EMPLOYEE OR
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OR WAGES OR BENEFIT OR SAFETY OR POPULATION OR DEMOGRAPHY
OR INCENTIVES OR HUMAN ADAPTIBILITY OR PREVENTION OR
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OR COALITION OR ORGANIZATION OR CONSUMER OR PATIENT OR
REPORT CARD OR SCORECARDS OR PATIENT SATISFACTION OR
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CONTRACT OR CONTRACTING OR REGULATION OR ACCREDITATION OR
LICENSING OR SERVICE AGREEMENT OR PARTNERSHIP OR
STEWARDSHIP OR PERFORMANCE OR QUALITY OR BENCHMARK OR BENCHMARKING OR
OR REORGANIZATION OR REDESIGN OR REENGINEERING OR TEAM OR
TEAMS OR GUIDELINE OR SUPPLYCHAIN OR CERTIFICATE OF NEED OR ASSESSMENT OR
MOTIVATION OR COMPETENCE OR STAFF OR
STAFFING OR SKILL OR PRODUCTIVITY

















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#	Search History	Results	Display	CONTRACT
1	(afghanistan or bangladesh or benin or burkina faso or burundi or cambodia or central african republic or chad or comoros or congo or cote d'ivoire or eritrea or ethiopia or ivory coast or gambia or ghana or guinea or haiti or india or kenya or korea or kyrgyzstan or lao or laos or lesotho or liberia or madagascar or malawi or mali or mauritania or modova or mongoli or mozambique or mayanmar or nepal or nicaragua or niger or nigeria or pakistan or rwanda or sao tome or senegal or sierra leone or solomon islands or somalia or sudan or tajikistan or tanzania or timor or togo or uganda or uzbekistan or vietnam or yemen or zaire or zambia or zimbabwe or albania or algeria or angola or armenia or azerbaijan or belarus or bolivia or bosnia or herzegovina or brazil or bulgaria or cape verde or china or colombia or cuba or djibouti or dominican republic or ecuador or egypt or el salvador or fiji or georgia or guatemala or guyana or honduras or indonesia or iran or iraq or jamaica or jordan or kazakhstan or kiribati or macedonia or maldives or marshall islands or micronesia or morocco or namibia or paraguay or peru or philippines or romania or samoa or serbia or montenegro or sri lanka or suriname or swaziland or syria).mp.	25776	 DISPLAY	
2	(thailand or tonga or tunisia or turkmenistan or ukraine or vanuatu or west bank or gaza or antigua or barbuda or argentina or barbados or belize or botswana or chile or costa rica or croatia or czech republic or dominica or equatorial guinea or estonia or gabon or grenada or hungary or latvia or lebanon or libya or lithuania or libya or malaysia or mauritius or mayotte or mexico).mp.	6419	 DISPLAY	
3	(mariana islands or oman or palau or panama or poland or russian federation or seychelles or slovak republic or south africa or st kitts or nevis or st lucia or st vincent or grenadines or trinidad or tobago or turkey or uruguay or venezuela or asia or west indies or polynesia or micronesia or middle east or africa or latin	11526	 DISPLAY	

	america or central america or south america or caribbean).mp.		
4	(((((developing adj (nation\$1 or country or countries)) or less developed) adj (country or counties)) or third world) adj (nation\$1 or country or countries or economies)).mp.	57	 DISPLAY
5	(hispanola or southeast asia or saharan africa or eastern europe or hispaniola or burma or east timor or congo or guiana or czechoslovakia or laos or north korea or yemen or republic of georgia or zaire or slovakia or soviet union or surinam or ussr or yugoslavia).mp.	1522	 DISPLAY
6	(center\$1 or facilities or facility or service\$1 or community or education or inservice or training or audit or practice or intervention\$1 or assurance or knowledge or attitude\$1 or coverage or occupation\$1 or occupational or planning or vocation or vocational or career or employee or job satisfaction or mentoring or work or working or wage or wages or benefit\$1 or safety or population or demography or incentives or human adaptability or prevention or immunizations or immunize or vaccinations or vaccinate or vaccine\$1 or disease or treatment or therapy or preventive or sanitation or improvement or economic\$1 or integration or initiatives or strategic planning or leadership or sector wide or decentralization or deconcentration or autonomization or authority or fee or fees or payment or risk or insurance or financing or copayment or cash or vouchers or cost or efficient or efficiency or savings account\$1 or mobilization or empowerment or engagement or coalition\$1 or organization\$1 or consumer or patient or report card\$1 or scorecards or patient satisfaction or marketing or franchise or demand or contract or contracting or regulation or accreditation or licensing or service agreement\$1 or partnership\$1 or stewardship or performance or quality or benchmark or benchmarking or reorganization or redesign or re-engineering or team or teams or guideline\$1 or supply chain or certificate of need or assessment or motivation or competence or staff or staffing or skill or productivity).mp.	887056	 DISPLAY
7	(doctor\$1 or personnel or worker\$1 or student\$1 or physician\$1 or provider\$1 or paramedical or midwife or midwives or professional\$1 or nurse\$1 or practitioner\$1 or therapist\$1 or attendant\$1 or hospital\$1 or	439530	 DISPLAY

	post\$1).mp.		
8	1 or 2 or 3 or 4 or 5	41726	 DISPLAY
9	8 and "9".mp. [mp=title, subject heading word, abstract, instrumentation]	955	 DISPLAY
10	6 and 9	857	 DISPLAY
11	limit 10 to yr="2005 - 2006"	201	 DISPLAY
12	limit 10 to yr="2006"	52	 DISPLAY
13	limit 10 to yr="2005"	149	 DISPLAY
14	limit 10 to yr="2004"	142	 DISPLAY
15	limit 10 to yr="2003"	147	 DISPLAY
16	limit 10 to yr="2002"	81	 DISPLAY
17	from 12 keep 1-52	52	 DISPLAY
18	from 13 keep 1-149	149	 DISPLAY
19	from 14 keep 1-142	142	 DISPLAY
20	from 15 keep 1-147	147	 DISPLAY
21	from 16 keep 1-81	81	 DISPLAY
22	8 and 7 and 6	15389	 DISPLAY
23	((doctor\$1 or personnel or worker\$1 or student\$1 or physician\$1 or provider\$1 or paramedical or midwife or midwives or professional\$1 or nurse\$1 or practitioner\$1 or therapist\$1 or attendant\$1 or hospital\$1 or post\$1) and (center\$1 or facilities or facility or service\$1 or community or education or inservice or training or audit or practice or intervention\$1 or assurance or knowledge or attitude\$1 or coverage or occupation\$1 or occupational or planning or vocation or vocational or career or employee or job satisfaction or mentoring or work or working or wage or wages or benefit\$1 or safety or population or demography or incentives or human adaptability or prevention or immunizations or immunize or vaccinations or vaccinate or vaccine\$1 or disease or treatment or therapy or preventive or sanitation or improvement or economic\$1 or integration or initiatives or strategic planning or leadership or sector wide or decentralization or deconcentration or autonomization or authority or fee or fees or payment or risk or insurance or financing or copayment or cash or vouchers or cost or efficient or efficiency or savings	789	 DISPLAY

account\$1 or mobilization or empowerment or engagement or coalition\$1 or organization\$1 or consumer or patient or report card\$1 or scorecards or patient satisfaction or marketing or franchise or demand or contract or contracting or regulation or accreditation or licensing or service agreement\$1 or partnership\$1 or stewardship or performance or quality or benchmark or benchmarking or reorganization or redesign or re-engineering or team or teams or guideline\$1 or supply chain or certificate of need or assessment or motivation or competence or staff or staffing or skill or productivity) and (afghanistan or bangladesh or benin or burkina faso or burundi or cambodia or central african republic or chad or comoros or congo or cote d'ivoire or eritrea or ethiopia or ivory coast or gambia or ghana or guinea or haiti or india or kenya or korea or kyrgyzstan or lao or laos or lesotho or liberia or madagascar or malawi or mali or mauritania or modova or mongoli or mozambique or mayanmar or nepal or nicaragua or niger or nigeria or pakistan or rwanda or sao tome or senegal or sierra leone or solomon islands or somalia or sudan or tajikistan or tanzania or timor or togo or uganda or uzbekistan or vietnam or yemen or zaire or zambia or zimbabwe or albania or algeria or angola or armenia or azerbaijan or belarus or bolivia or bosnia or herzegovina or brazil or bulgaria or cape verde or china or colombia or cuba or djibouti or dominican republic or ecuador or egypt or el salvador or fiji or georgia or guatemala or guyana or honduras or indonesia or iran or iraq or jamaica or jordan or kazakhstan or kiribati or macedonia or maldives or marshall islands or micronesia or morocco or namibia or paraguay or peru or philippines or romania or samoa or serbia or montenegro or sri lanka or suriname or swaziland or syria or (thailand or tonga or tunisia or turkmenistan or ukraine or vanuatu or west bank or gaza or antigua or barbuda or argentina or barbados or belize or botswana or chile or costa rica or croatia or czech republic or dominica or equatorial guinea or estonia or gabon or grenada or hungary or latvia or lebanon or libya or lithuania or libya or malaysia or mauritius or mayotte or mexico) or (mariana islands or oman or palau or panama or poland or russian federation or seychelles or slovak republic or south africa or st kitts or nevis or st lucia or st vincent or grenadines or trinidad or tobago or

	turkey or uruguay or venezuela or asia or west indies or polynesia or micronesia or middle east or africa or latin america or central america or south america or caribbean) or ((((((developing adj (nation\$1 or country or countries)) or less developed) adj (country or counties)) or third world) adj (nation\$1 or country or countries or economies)) or (hispanola or southeast asia or saharan africa or eastern europe or hispaniola or burma or east timor or congo or guiana or czechoslovakia or laos or north korea or yemen or republic of georgia or zaire or slovakia or soviet union or surinam or ussr or yugoslavia))))).ti.		
24	limit 23 to yr="2006 - 2007"	39	DISPLAY
25	limit 23 to yr="2004 - 2005"	177	DISPLAY
26	limit 23 to yr="2002 - 2003"	158	DISPLAY
27	limit 23 to yr="2000 - 2001"	140	DISPLAY
28	limit 23 to yr="1996 - 1999"	117	DISPLAY
29	limit 23 to yr="1990 - 1995"	99	DISPLAY
30	limit 23 to yr="1980 - 1989"	56	DISPLAY
31	limit 23 to yr="1900 - 1979"	1	DISPLAY
32	24 or 25 or 26 or 27 or 28 or 29 or 30 or 31	787	DISPLAY
33	from 24 keep 1-39	39	DISPLAY
34	from 25 keep 1-177	177	DISPLAY
35	from 26 keep 1-158	158	DISPLAY
36	from 27 keep 1-140	140	DISPLAY
37	from 28 keep 1-117	117	DISPLAY
38	29 or 30 or 31	156	DISPLAY
39	from 38 keep 1-156	156	DISPLAY
Combine Searches Delete Searches Save Search/Alert			

Advanced Search	Basic Search	Find Citation	More Fields	Search Tools
Keyword				
Enter Keyword or phrase (use "\$" for truncation):			<input checked="" type="checkbox"/> Map Term to Subject Heading	

(afghanistan or bangladesh or benin or burkina faso or burundi or cambodia or central african republic or chad or comoros or congo or cote d'ivoire or eritrea or ethiopia or ivory coast or gambia or ghana or guinea or haiti or india or kenya or korea or kyrgyzstan or lao or laos or lesotho or liberia or madagascar or malawi or mali or mauritania or modova or mongoli or mozambique or mayanmar or nepal or nicaragua or niger or nigeria or pakistan or rwanda or sao tome or senegal or sierra leone or solomon islands or somalia or sudan or tajikistan or tanzania or timor or togo or uganda or uzbekistan or vietnam or yemen or zaire or zambia or zimbabwe or albania or algeria or angola or armenia or azerbaijan or belarus or bolivia or bosnia or herzegovina or brazil or bulgaria or cape verde or china or colombia or cuba or djibouti or dominican republic or ecuador or egypt or el salvador or fiji or georgia or guatemala or guyana or honduras or indonesia or iran or iraq or jamaica or jordan or kazakhstan or kiribati or macedonia or maldives or marshall islands or micronesia or morocco or namibia or paraguay or peru or philippines or romania or samoa or serbia or montenegro or sri lanka or suriname or swaziland or syria or thailand or tonga or tunisia or turkmenistan or ukraine or vanuatu or west bank or gaza or antigua or barbuda or argentina or barbados or belize or botswana or chile or costa rica or croatia or czech republic or dominica or equatorial guinea or estonia or gabon or grenada or hungary or latvia or lebanon or libya or lithuania or libya or malaysia or mauritius or mayotte or mexico or mariana islands or oman or palau or panama or poland or russian federation or seychelles or slovak republic or south africa or st kitts or nevis or st lucia or st vincent or grenadines or trinidad or tobago or turkey or uruguay or venezuela or asia or west indies or polynesia or micronesia or middle east or africa or latin america or central america or south america or caribbean or developing nations or developing countries or developing nation or developing country or less developed countries or less developed country or third world or hispaniola or southeast asia or saharan africa or eastern europe or hispaniola or burma or east timor or congo or guiana or czechoslovakia or laos or north korea or yemen or republic of georgia or zaire or slovakia or soviet union or surinam or ussr or yugoslavia)

43674 edit delete

#4 (doctor* or personnel or worker* or student* or physician* or provider* or paramedical or midwife or midwives or professional* or nurse* or practitioner* or therapist* or attendant* or hospital* or post* or center* or facilities or facility or service* or community or education or inservice or training or audit or practice or intervention* or assurance or knowledge or attitude* or coverage or occupation* or occupational or planning or vocation or vocational or career or employee or job satisfaction or mentoring or work or working or wage or wages or benefit* or safety or population or demography or incentives or human adaptibility or prevention or immunizations or immunize or vaccinations or vaccinate or vaccine* or disease or treatment or therapy or preventive or sanitation or improvement or economic* or integration or initiatives or strategic planning or leadership or sector wide or decentralization or deconcentration or autonomization or authority or fee or fees or payment or risk or insurance or financing or copayment or cash or vouchers or cost or efficient or efficiency or savings account* or mobilization or empowerment or engagement or coalition* or organization* or consumer or patient or report card* or scorecards or patient satisfaction or marketing or franchise or demand or contract or contracting or regulation or accreditation or licensing or service agreement* or partnership* or stewardship or performance or quality or benchmark or benchmarking or reorganization or redesign or re-engineering or team or teams or guideline* or supply chain or certificate of need or assessment or motivation or competence or staff or staffing or skill or productivity):ti,ab,kw 433159 edit delete

#5 (#3 AND #4), from 1980 to 2006 39852 edit delete

#6 (doctor* or personnel or worker* or student* or physician* or provider* or paramedical or midwife or midwives or professional* or nurse* or practitioner* or therapist* or attendant* or hospital* or post* or center* or facilities or facility or service* or community or education or inservice or training or audit or

practice or intervention* or assurance or knowledge or attitude* or coverage or occupation* or occupational or planning or vocation or vocational or career or employee or job satisfaction or mentoring or work or working or wage or wages or benefit* or safety or population or demography or incentives or human adaptability or prevention or immunizations or immunize or vaccinations or vaccinate or vaccine* or disease or treatment or therapy or preventive or sanitation or improvement or economic* or integration or initiatives or strategic planning or leadership or sector wide or decentralization or deconcentration or autonomization or authority or fee or fees or payment or risk or insurance or financing or copayment or cash or vouchers or cost or efficient or efficiency or savings account* or mobilization or empowerment or engagement or coalition* or organization* or consumer or patient or report card* or scorecards or patient satisfaction or marketing or franchise or demand or contract or contracting or regulation or accreditation or licensing or service agreement* or partnership* or stewardship or performance or quality or benchmark or benchmarking or reorganization or redesign or re-engineering or team or teams or guideline* or supply chain or certificate of need or assessment or motivation or competence or staff or staffing or skill or productivity):ti 260718 edit delete

#7 (afghanistan or bangladesh or benin or burkina faso or burundi or cambodia or central african republic or chad or comoros or congo or cote d'ivoire or eritrea or ethiopia or ivory coast or gambia or ghana or guinea or haiti or india or kenya or korea or kyrgyzstan or lao or laos or lesotho or liberia or madagascar or malawi or mali or mauritania or modova or mongoli or mozambique or mayanmar or nepal or nicaragua or niger or nigeria or pakistan or rwanda or sao tome or senegal or sierra leone or solomon islands or somalia or sudan or tajikistan or tanzania or timor or togo or uganda or uzbekistan or vietnam or yemen or zaire or zambia or zimbabwe or albania or algeria or angola or armenia or azerbaijan or belarus or bolivia or bosnia or herzegovina or brazil or bulgaria or cape verde or china or colombia or cuba or djibouti or dominican republic or ecuador or egypt or el salvador or fiji or georgia or guatemala or guyana or honduras or indonesia or iran or iraq or jamaica or jordan or kazakhstan or kiribati or macedonia or maldives or marshall islands or micronesia or morocco or namibia or paraguay or peru or philippines or romania or samoa or serbia or montenegro or sri lanka or suriname or swaziland or syria or thailand or tonga or tunisia or turkmenistan or ukraine or vanuatu or west bank or gaza or antigua or barbuda or argentina or barbados or belize or botswana or chile or costa rica or croatia or czech republic or dominica or equatorial guinea or estonia or gabon or grenada or hungary or latvia or lebanon or libya or lithuania or libya or malaysia or mauritius or mayotte or mexico or mariana islands or oman or palau or panama or poland or russian federation or seychelles or slovak republic or south africa or st kitts or nevis or st lucia or st vincent or grenadines or trinidad or tobago or turkey or uruguay or venezuela or asia or west indies or polynesia or micronesia or middle east or africa or latin america or central america or south america or caribbean or developing nations or developing countries or developing nation or developing country or less developed countries or less developed country or third world or hispanola or southeast asia or saharan africa or eastern europe or hispaniola or burma or east timor or congo or guiana or czechoslovakia or laos or north korea or yemen or republic of georgia or zaire or slovakia or soviet union or surinam or ussr or yugoslavia):ti 3615 edit delete

#8 (#6 AND #7), from 1980 to 2006 2115 edit delete

#9 MeSH descriptor Health Personnel explode all trees with qualifier: ED 536 edit delete

#10 (#7 AND #9), from 1980 to 2006 22 edit delete

#11 (TRAINING):ti,ab,kw 14650 edit delete

#12 (#11 AND #7) 158 edit delete

#13 (#12 AND NOT #10) 141 ed

Dissertation Abstracts

Set	Items	Description
S1	2115	AFGHANISTAN OR BANGLADESH OR BENIN OR BHUTAN OR BURKINA()FASO OR BURUNDI OR CAMBODIA OR CAMEROON
S2	20062	CENTRAL()AFRICAN()REPUBLIC OR CHAD OR COMOROS OR CONGO OR - COTE()D'IVOIRE OR ERITREA OR COTE()D()IVOIRE OR ETHIOPIA OR G-AMBIA OR GHANA OR GUINEA OR HAITI OR INDIA OR KENYA OR KOREA - OR KYRGYZSTAN OR LAO OR LAOS OR LESOTHO OR LIBERIA
S3	9456	MADAGASCAR OR MALAWI OR MALI OR MAURITANIA OR MOLDOVA OR MONGOLIA OR MOZAMBIQUE OR MYANMAR OR NEPAL OR NICARAGUA OR NIGER OR NIGERIA OR PAKISTAN OR RWANDA OR SAO()TOME OR SENEGAL OR SIERRA()LEONE OR SOLOMON()ISLANDS OR SOMALIA OR SUDAN
S4	11614	TAJIKISTAN OR TANZANIA OR TIMOR OR TOGO OR UGANDA OR UZBEKISTAN OR VIETNAM OR YEMEN OR ZAIRE OR ZAMBIA OR ZIMBABWE OR A-LBANIA OR ALGERIA OR ANGOLA OR ARMENIA OR AZERBAIJAN OR BELA-RUS OR BOLIVIA OR BOSNIA OR HERZEGOVINA OR BRAZIL
S5	31690	BULGARIA OR CAPE()VERDE OR CHINA OR COLOMBIA OR CUBA OR DJIBOUTI OR DOMINICAN()REPUBLIC OR ECUADOR OR EGYPT OR EL()SALVADOR OR FIJI OR GEORGIA OR GUATEMALA OR GUYANA OR HONDURAS OR INDONESIA OR IRAN OR IRAQ OR JAMAICA OR JORDAN
S6	7505	KAZAKHSTAN OR KIRIBATI OR MACEDONIA OR MALDIVES OR MARSHALL()ISLANDS OR MICRONESIA OR MOROCCO OR NAMIBIA OR PARAGUAY OR PERU OR PHILIPPINES OR ROMANIA OR SAMOA OR SERBIA OR MONTENEGRO OR SRI()LANKA OR SURINAME OR SWAZILAND OR SYRIA
S7	4166	THAILAND OR TONGA OR TUNISIA OR TURKMENISTAN OR UKRAINE OR VANUATU OR WEST()BANK OR GAZA
S8	8826	ANTIGUA OR BARBUDA OR ARGENTINA OR BARBADOS OR BELIZE OR BOTSWANA OR CHILE OR COSTA()RICA OR CROATIA OR CZECH()REPUBLIC OR DOMINICA OR EQUATORIAL()GUINEA OR ESTONIA OR GABON OR GRENADA OR HUNGARY OR LATVIA OR LEBANON OR LIBYA OR LITHUANIA
S9	19519	MALAYSIA OR MAURITIUS OR MAYOTTE OR MEXICO OR MARIANA()ISLANDS OR OMAN OR PALAU OR PANAMA OR POLAND OR RUSSIAN()FEDERATION OR SEYCHELLES OR SLOVAK()REPUBLIC OR SOUTH()AFRICA OR ST()KITTS OR ST(1W)KITTS OR NEVIS OR ST()LUCIA OR ST(1W)LUCIA
S10	4592	ST()VINCENT OR GRENADINES OR TRINIDAD OR TOBAGO OR TURKEY - OR URUGUAY OR VENEZUELA
S11	23358	ASIA OR WEST()INDIES OR POLYNESIA OR MICRONESIA OR MIDDLE EAST OR AFRICA OR LATIN AMERICA OR CENTRAL AMERICA OR SOUTH A-MERICA OR CARIBBEAN OR WEST INDIES REGION OR HISPA?OLA OR SOUTHEAST ASIA OR SUB()SAHARAN()AFRICA OR EASTERN()EUROPE
S12	67	HISPANIOLA
S13	6235	BURMA OR EAST()TIMOR OR CONGO OR GUIANA OR CZECHOSLOVAKIA -OR LAOS OR NORTH()KOREA OR IVORY()COAST OR REPUBLIC(1W)GEORGIA OR YEMEN OR ZAIRE OR SLOVAKIA OR SOVIET()UNION OR SURINAM - OR USSR OR SAMOA OR YUGOSLAVIA
S14	6743	DEVELOPING()NATION? ? OR COUNTRIES) OR LESS()DEVELOPED()(-

NATION? ? OR COUNTRIES) OR THIRD()WORLD()(NATION? ? OR COUNTRIES) OR UNDER()DEVELOPED()(NATION? ? OR COUNTRIES) OR POOR()-(NATION? ? OR COUNTRIES OR ECONOMIES)

S15 118262 S1 OR S2 OR S3 OR S4 OR S5 OR S6 OR S7 OR S8 OR S9 OR S10 - OR S11 OR S12 OR S13 OR S14

S16 333882 DOCTOR? ? OR PERSONNEL OR WORKER? ? OR STUDENT? ? OR PHYSICIAN? ? OR PROVIDER? ? OR PARAMEDICAL OR MIDWIFE OR MIDWIVES - OR PROFESSIONAL? ? OR NURSE? ? OR PRACTITIONER? ? OR THERAPIST? ? OR ATTENDANT? ? OR HOSPITAL? ? OR POST? ?

S17 210491 CENTER? ? OR FACILITIES OR FACILITY OR SERVICE? ? OR COMMUNITY

S18 464780 S16 OR S17

S19 40393 S18 AND S15

S20 23358 ASIA OR WEST()INDIES OR POLYNESIA OR MICRONESIA OR MIDDLE EAST OR AFRICA OR LATIN AMERICA OR CENTRAL AMERICA OR SOUTH AMERICA OR CARIBBEAN OR WEST INDIES REGION OR HISPA?OLA OR SOUTHEAST ASIA OR SUB()SAHARAN()AFRICA OR EASTERN()EUROPE

S21 67 HISPANIOLA

S22 6235 BURMA OR EAST()TIMOR OR CONGO OR GUIANA OR CZECHOSLOVAKIA - OR LAOS OR NORTH()KOREA OR IVORY()COAST OR REPUBLIC(1W)GEORGIA OR YEMEN OR ZAIRE OR SLOVAKIA OR SOVIET()UNION OR SURINAM - OR USSR OR SAMOA OR YUGOSLAVIA

S23 6743 DEVELOPING()(NATION? ? OR COUNTRIES) OR LESS()DEVELOPED()-(NATION? ? OR COUNTRIES) OR THIRD()WORLD()(NATION? ? OR COUNTRIES) OR UNDER()DEVELOPED()(NATION? ? OR COUNTRIES) OR POOR()-(NATION? ? OR COUNTRIES OR ECONOMIES)

S24 555815 EDUCATION OR INSERVICE OR TRAINING OR AUDIT OR PRACTICE OR INTERVENTION? ? OR ASSURANCE OR KNOWLEDGE OR ATTITUDE? ?OR COVERAGE OR OCCUPATION? ? OR OCCUPATIONAL OR PLANNING OR VOCATION OR VOCATIONAL OR CAREER OR EMPLOYEE

S25 398063 JOB()SATISFACTION OR MENTORING OR WORK OR WORKING OR WAGE - OR WAGES OR BENEFIT? ? OR SAFETY OR POPULATION OR DEMOGRAPHY - OR INCENTIVES OR HUMAN()ADAPTIBILITY OR PREVENTION OR IMMUNIZATIONS OR IMMUNIZE OR VACCINATIONS OR VACCINATE

S26 376259 VACCINE? ? OR DISEASE OR TREATMENT OR THERAPY OR PREVENTIVE OR SANITATION OR IMPROVEMENT OR ECONOMIC? ? OR INTEGRATION OR INITIATIVES OR STRATEGIC()PLANNING OR LEADERSHIP OR SECTOR()-WIDE OR DECENTRALIZATION OR DECONCENTRATION

S27 202821 AUTONOMIZATION OR AUTHORITY OR FEE OR FEES OR PAYMENT OR RISK OR INSURANCE OR FINANCING OR COPAYMENT OR CASH OR VOUCHERS OR COST OR EFFICIENT OR EFFICIENCY OR SAVINGS()ACCOUNT? ? OR MOBILIZATION OR EMPOWERMENT OR ENGAGEMENT

S28 138203 COALITION? ? OR ORGANIZATION? ? OR CONSUMER OR PATIENT OR -REPORT()CARD? ? OR SCORECARDS OR PATIENT()SATISFACTION OR MARKETING OR FRANCHISE OR DEMAND

S29 278104 CONTRACT OR CONTRACTING OR REGULATION OR ACCREDITATION OR -LICENSING OR SERVICE()AGREEMENT ? ? OR PARTNERSHIP? ? OR STEWARDSHIP OR PERFORMANCE OR QUALITY OR BENCHMARK OR BENCHMARKING

OR REORGANIZATION OR REDESIGN OR RE()ENGINEERING OR TEAM
S30 151156 TEAMS OR GUIDELINE? ? OR SUPPLY()CHAIN OR CERTIFICATE(1W)NEED
OR ASSESSMENT OR MOTIVATION OR COMPETENCE OR STAFF OR STAFFING OR SKILL
OR PRODUCTIVITY
S31 333882 DOCTOR? ? OR PERSONNEL OR WORKER? ? OR STUDENT? ? OR
PHYSICIAN? ? OR PROVIDER? ? OR PARAMEDICAL OR MIDWIFE OR MIDWIVES -
OR PROFESSIONAL? ? OR NURSE? ? OR PRACTITIONER? ? OR THERAPIS-
T? ? OR ATTENDANT? ? OR HOSPITAL? ? OR POST? ?
S32 938790 STUDY OR STUDIES
S33 210491 CENTER? ? OR FACILITIES OR FACILITY OR SERVICE? ? OR COMMUNITY
S34 21471 CHILDREN(2W) HOSPITAL? ?/TI OR COMMUNITY()HEALTH()SERVICES-
/DE OR DOCTOR/TI,AB OR DOCTORS/TI,AB OR HEALTH PERSONNEL! OR
HEALTH POSTS/TI,AB OR HEALTH()SERVICES()RESEARCH/DE OR HEALTH-
()WORKERS/TI,AB OR HOSPITAL/TI,AB OR HOSPITALS/TI,AB
S35 11 HEALTH()POSTS/TI,AB
S36 12050 MEDICAL()STUDENTS/TI OR OBSTETRIC()CARE/TI OR
PHARMACEUTICAL()SERVICES/DE OR PHARMACY()SERVICE()HOSPITAL/DE OR
PHYSICIANS/TI,AB OR PRIMARY()HEALTH()CARE/TI,AB OR PRIMARY()HEALTH()C-
ENTERS/TI,AB OR PROVIDERS/TI,AB
S37 70608 AUDIT/TI OR EDUCATION, CONTINUING! OR HEALTH CARE COSTS! OR
HEALTH EDUCATION! OR HEALTH KNOWLEDGE, ATTITUDES, PRACTICE! -
OR IMPACT/TI OR INSERVICE, TRAINING! OR INTERVENTION/TI,AB OR
QUALITY ASSURANCE, HEALTHCARE! OR TRAINING/TI

S55 118262 S15 OR S20 OR S21 OR S22 OR S23
S56 584189 S30 OR S29 OR S28 OR S27
S57 970648 S37 OR S25 OR S24 OR S26 OR S24
S58 498295 S17 OR S16 OR S33 OR S34 OR S31 OR S35 OR S36 OR S37
S59 18937 S58 AND S57 AND S56 AND S55
S60 474 S58/TI AND S57/TI AND S56/TI AND S55/TI

EconLit

Set	Items	Description
S1	2855	AFGHANISTAN OR BANGLADESH OR BENIN OR BHUTAN OR BURKINA()F- ASO OR BURUNDI OR CAMBODIA OR CAMEROON
S2	21013	CENTRAL()AFRICAN()REPUBLIC OR CHAD OR COMOROS OR CONGO OR - COTE()D'IVOIRE OR ERITREA OR COTE()D()IVOIRE OR ETHIOPIA OR G- AMBIA OR GHANA OR GUINEA OR HAITI OR INDIA OR KENYA OR KOREA - OR KYRGYZSTAN OR LAO OR LAOS OR LESOTHO OR LIBERIA
S3	7500	MADAGASCAR OR MALAWI OR MALI OR MAURITANIA OR MOLDOVA OR M- ONGOLIA OR MOZAMBIQUE OR MYANMAR OR NEPAL OR NICARAGUA OR NIG- ER OR NIGERIA OR PAKISTAN OR RWANDA OR SAO()TOME OR SENEGAL OR SIERRA()LEONE OR SOLOMON()ISLANDS OR SOMALIA OR SUDAN

- S4 10485 TAJIKISTAN OR TANZANIA OR TIMOR OR TOGO OR UGANDA OR UZBEK-
ISTAN OR VIETNAM OR YEMEN OR ZAIRE OR ZAMBIA OR ZIMBABWE OR A-
LBANIA OR ALGERIA OR ANGOLA OR ARMENIA OR AZERBAIJAN OR BELA-
RUS OR BOLIVIA OR BOSNIA OR HERZEGOVINA OR BRAZIL
- S5 23931 BULGARIA OR CAPE()VERDE OR CHINA OR COLOMBIA OR CUBA OR DJ-
IBOUTI OR DOMINICAN()REPUBLIC OR ECUADOR OR EGYPT OR EL()SALV-
ADOR OR FIJI OR GEORGIA OR GUATEMALA OR GUYANA OR HONDURAS OR
INDONESIA OR IRAN OR IRAQ OR JAMAICA OR JORDAN
- S6 6424 KAZAKHSTAN OR KIRIBATI OR MACEDONIA OR MALDIVES OR MARSHAL-
L()ISLANDS OR MICRONESIA OR MOROCCO OR NAMIBIA OR PARAGUAY OR
PERU OR PHILIPPINES OR ROMANIA OR SAMOA OR SERBIA OR MONTENEG-
RO OR SRI()LANKA OR SURINAME OR SWAZILAND OR SYRIA
- S7 3738 THAILAND OR TONGA OR TUNISIA OR TURKMENISTAN OR UKRAINE OR
VANUATU OR WEST()BANK OR GAZA
- S8 13543 ANTIGUA OR BARBUDA OR ARGENTINA OR BARBADOS OR BELIZE OR B-
OTSWANA OR CHILE OR COSTA()RICA OR CROATIA OR CZECH()REPUBLIC
OR DOMINICA OR EQUATORIAL()GUINEA OR ESTONIA OR GABON OR GREN-
ADA OR HUNGARY OR LATVIA OR LEBANON OR LIBYA OR LITHUANIA
- S9 16129 MALAYSIA OR MAURITIUS OR MAYOTTE OR MEXICO OR MARIANA()ISL-
ANDS OR OMAN OR PALAU OR PANAMA OR POLAND OR RUSSIAN()FEDERAT-
ION OR SEYCHELLES OR SLOVAK()REPUBLIC OR SOUTH()AFRICA OR ST(-
)KITTS OR ST(1W)KITTS OR NEVIS OR ST()LUCIA OR ST(1W)LUCIA
- S10 4776 ST()VINCENT OR GRENADINES OR TRINIDAD OR TOBAGO OR TURKEY -
OR URUGUAY OR VENEZUELA
- S11 41705 ASIA OR WEST()INDIES OR POLYNESIA OR MICRONESIA OR MIDDLE -
EAST OR AFRICA OR LATIN AMERICA OR CENTRAL AMERICA OR SOUTH A-
MERICA OR CARIBBEAN OR WEST INDIES REGION OR HISPA?OLA OR SOU-
THEAST ASIA OR SUB()SAHARAN()AFRICA OR EASTERN()EUROPE
- S12 1 HISPANIOLA
- S13 6628 BURMA OR EAST()TIMOR OR CONGO OR GUIANA OR CZECHOSLOVAKIA -
OR LAOS OR NORTH()KOREA OR IVORY()COAST OR REPUBLIC(1W)GEORG-
IA OR YEMEN OR ZAIRE OR SLOVAKIA OR SOVIET()UNION OR SURINAM -
OR USSR OR SAMOA OR YUGOSLAVIA
- S14 22992 DEVELOPING()NATION? ? OR COUNTRIES) OR LESS()DEVELOPED()(-
NATION? ? OR COUNTRIES) OR THIRD()WORLD()NATION? ? OR COUNTR-
IES) OR UNDER()DEVELOPED()NATION? ? OR COUNTRIES) OR POOR()-
(NATION? ? OR COUNTRIES OR ECONOMIES)
- S15 132743 S1 OR S2 OR S3 OR S4 OR S5 OR S6 OR S7 OR S8 OR S9 OR S10 -
OR S11 OR S12 OR S13 OR S14
- S16 55530 DOCTOR? ? OR PERSONNEL OR WORKER? ? OR STUDENT? ? OR PHYSI-
CIAN? ? OR PROVIDER? ? OR PARAMEDICAL OR MIDWIFE OR MIDWIVES -
OR PROFESSIONAL? ? OR NURSE? ? OR PRACTITIONER? ? OR THERAPIS-
T? ? OR ATTENDANT? ? OR HOSPITAL? ? OR POST? ?
- S17 71658 CENTER? ? OR FACILITIES OR FACILITY OR SERVICE? ? OR COMMU-
NITY
- S18 128687 EDUCATION OR INSERVICE OR TRAINING OR AUDIT OR PRACTICE OR
INTERVENTION? ? OR ASSURANCE OR KNOWLEDGE OR ATTITUDE? ?OR CO-

- VERAGE OR OCCUPATION? ? OR OCCUPATIONAL OR PLANNING OR VOCATION OR VOCATIONAL OR CAREER OR EMPLOYEE
- S19 127511 JOB()SATISFACTION OR MENTORING OR WORK OR WORKING OR WAGE - OR WAGES OR BENEFIT? ? OR SAFETY OR POPULATION OR DEMOGRAPHY - OR INCENTIVES OR HUMAN()ADAPTIBILITY OR PREVENTION OR IMMUNIZATIONS OR IMMUNIZE OR VACCINATIONS OR VACCINATE
- S20 415737 VACCINE? ? OR DISEASE OR TREATMENT OR THERAPY OR PREVENTIVE OR SANITATION OR IMPROVEMENT OR ECONOMIC? ? OR INTEGRATION OR INITIATIVES OR STRATEGIC()PLANNING OR LEADERSHIP OR SECTOR()-WIDE OR DECENTRALIZATION OR DECONCENTRATION
- S21 126039 AUTONOMIZATION OR AUTHORITY OR FEE OR FEES OR PAYMENT OR RISK OR INSURANCE OR FINANCING OR COPAYMENT OR CASH OR VOUCHERS OR COST OR EFFICIENT OR EFFICIENCY OR SAVINGS()ACCOUNT? ? OR MOBILIZATION OR EMPOWERMENT OR ENGAGEMENT
- S22 158534 COALITION? ? OR ORGANIZATION? ? OR CONSUMER OR PATIENT OR - REPORT()CARD? ? OR SCORECARDS OR PATIENT()SATISFACTION OR MARKETING OR FRANCHISE OR DEMAND
- S23 123731 CONTRACT OR CONTRACTING OR REGULATION OR ACCREDITATION OR - LICENSING OR SERVICE()AGREEMENT ? ? OR PARTNERSHIP? ? OR STEWARDSHIP OR PERFORMANCE OR QUALITY OR BENCHMARK OR BENCHMARKING OR REORGANIZATION OR REDESIGN OR RE()ENGINEERING OR TEAM
- S24 59087 TEAMS OR GUIDELINE? ? OR SUPPLY()CHAIN OR CERTIFICATE(1W)N- EED OR ASSESSMENT OR MOTIVATION OR COMPETENCE OR STAFF OR STAFFING OR SKILL OR PRODUCTIVITY
- S25 55530 DOCTOR? ? OR PERSONNEL OR WORKER? ? OR STUDENT? ? OR PHYSICIAN? ? OR PROVIDER? ? OR PARAMEDICAL OR MIDWIFE OR MIDWIVES - OR PROFESSIONAL? ? OR NURSE? ? OR PRACTITIONER? ? OR THERAPIST? ? OR ATTENDANT? ? OR HOSPITAL? ? OR POST? ?
- S26 242893 STUDY OR STUDIES
- S27 71658 CENTER? ? OR FACILITIES OR FACILITY OR SERVICE? ? OR COMMUNITY
- S28 2825 CHILDREN(2W) HOSPITAL? ?/TI OR COMMUNITY()HEALTH()SERVICES- /DE OR DOCTOR/TI,AB OR DOCTORS/TI,AB OR HEALTH PERSONNEL! OR HEALTH POSTS/TI,AB OR HEALTH()SERVICES()RESEARCH/DE OR HEALTH- ()WORKERS/TI,AB OR HOSPITAL/TI,AB OR HOSPITALS/TI,AB
- S29 2 HEALTH()POSTS/TI,AB
- S30 1980 MEDICAL()STUDENTS/TI OR OBSTETRIC()CARE/TI OR PHARMACEUTICAL()SERVICES/DE OR PHARMACY()SERVICE()HOSPITAL/DE OR PHYSICIANS/TI,AB OR PRIMARY()HEALTH()CARE/TI,AB OR PRIMARY()HEALTH()CENTERS/TI,AB OR PROVIDERS/TI,AB
- S31 19801 AUDIT/TI OR EDUCATION, CONTINUING! OR HEALTH CARE COSTS! OR HEALTH EDUCATION! OR HEALTH KNOWLEDGE, ATTITUDES, PRACTICE! - OR IMPACT/TI OR INSERVICE, TRAINING! OR INTERVENTION/TI,AB OR QUALITY ASSURANCE, HEALTHCARE! OR TRAINING/TI
- S32 0 QUALITY ASSURANCE, HEALTH CARE!
- S33 0 HEALTH KNOWLEDGE, ATTITUDES, PRACTICE!
- S34 0 EPIDEMIOLOGIC METHODS!

S35 0 S59 AND (HEALTH? OR DOCTOR? OR PHYSICIAN? ? OR PHARMAC? OR MIDWIF? OR MIDWIVES OR DENTIST? ? OR NURSE OR NURSES OR CLINIC? ? OR HOSPITAL? ?)

S36 0 S58 OR S37

S37 0 S63 AND S57 AND S56 AND S55

S38 0 S63/TI AND S57/TI AND S56/TI AND S55/TI

S39 0 S64 AND (HEALTH? OR DOCTOR? OR PHYSICIAN? ? OR PHARMAC? OR MIDWIF? OR MIDWIVES OR DENTIST? ? OR NURSE OR NURSES OR CLINIC? ? OR HOSPITAL? ?)

S40 0 S65 AND (HEALTH? OR DOCTOR? OR PHYSICIAN? ? OR PHARMAC? OR MIDWIF? OR MIDWIVES OR DENTIST? ? OR NURSE OR NURSES OR CLINIC? ? OR HOSPITAL? ?)

S41 906 15 AND (S16 OR S17) AND (S18 OR S19 OR S20 OR S21 OR S22 OR S23 OR S24 OR S27 OR S28 OR S25 OR S29 OR S30 OR S31)

S42 905 S41/1980:2006

S43 204 S42 AND (HEALTH? OR DOCTOR? OR PHYSICIAN? ? OR PHARMAC? OR MIDWIF? OR MIDWIVES OR DENTIST? ? OR NURSE OR NURSES OR CLINIC? ? OR HOSPITAL? ?)

Eldis

ELDIS search strategy:

"(physician* or nurse* or doctor* or midwi* or dentist* or paramedic* or worker* or volunteer*) and (train* or education) AND Health policy AND Africa"

Your search found 127 out of 30736 records

EMBASE

(EDUCATION OR INSERVICE OR TRAINING OR AUDIT OR PRACTICE OR INTERVENTION OR ASSURANCE OR KNOWLEDGE OR ATTITUDE OR COVERAGE OR OCCUPATION OR OCCUPATIONAL OR PLANNING OR VOCATION OR VOCATIONAL OR CAREER OR EMPLOYEE or employees or 'JOB SATISFACTION' OR MENTORING OR WORK OR WORKING OR WAGE or WAGES OR BENEFIT OR SAFETY OR POPULATION OR dEMOGRAPHY OR INCENTIVES OR 'HUMAN ADAPTIBILITY' OR PREVENTION OR IMMUNIZATIONS OR IMMUNIZE OR VACCINATIONS OR VACCINATE OR VACCINE OR DISEASE OR TREATMENT OR THERAPY OR PREVENTIVE OR SANITATION OR IMPROVEMENT OR ECONOMIC OR INTEGRATION OR iNITIATIVES OR 'sTRATEGIC PLANNING' OR LEADERSHIP OR 'SECTOR-WIDE' OR dECENTRALIZATION OR DECONCENTRATION or AUTONOMIZATION OR AUTHORITY OR FEE OR FEES OR PAYMENT OR RISK OR INSURANCE OR FINANCING OR COPAYMENT OR CASH OR VOUCHERS OR COST or costs OR EFFICIENT OR EFFICIENCY OR 'SAVINGS ACCOUNT' OR MOBILIZATION OR EMPOWERMENT OR ENGAGEMENT or COALITION OR ORGANIZATION OR CONSUMER or consumers or PATIENT OR 'REPORT CARD' OR SCORECARDS OR 'pATIENT SATISFACTION' OR MARKETING OR FRANCHISING OR DEMAND or CONTRACT OR CONTRACTING OR REGULATION OR ACCREDITATION OR IICENSING OR 'SERVICE AGREEMENT' OR PARTNERSHIP or partnerships OR STEWARDSHIP OR PERFORMANCE OR QUALITY OR BENCHMARK OR BENCHMARKING or REORGANIZATION OR REDESIGN OR 'RE-ENGINEERING' OR TEAM or TEAMS OR GUIDELINE OR 'SUPPLY CHAIN' OR 'CERTIFICATE of NEED'

OR ASSESSMENT OR MOTIVATION OR COMPETENCE OR STAFF OR STAFFING OR SKILL OR PRODUCTIVITY) and (AFGHANISTAN OR BANGLADESH OR BENIN OR BHUTAN OR 'BURKINA FASO' OR BURUNDI OR CAMBODIA OR CAMEROON or 'cENTRAL AFRICAN REPUBLIC' OR CHAD OR COMOROS OR CONGO OR 'COTE D IVOIRE' OR ERITREA OR ETHIOPIA OR GAMBIA OR GHANA OR GUINEA OR HAITI OR INDIA OR KENYA OR KOREA OR KYRGYSZSTAN OR LAO OR LAOS OR LESOTHO OR LIBERIA or MADAGASCAR OR MALAWI OR MALI OR MAURITANIA OR MOLDOVA OR MONGOLIA OR MOZAMBIQUE OR MYANMAR OR NEPAL OR NICARAGUA OR NIGER OR NIGERIA OR PAKISTAN OR RWANDA OR 'SAO TOME' OR SENEGAL OR 'SIERRA LEONE' OR 'sOLOMON ISLANDS' OR SOMALIA OR SUDAN or TAJIKISTAN OR TANZANIA OR TIMOR OR TOGO OR UGANDA OR UZBEKISTAN OR VIETNAM OR YEMEN OR ZAIRE OR ZAMBIA OR ZIMBABWE OR ALBANIA OR ALGERIA OR ANGOLA OR ARMENIA OR AZERBAIJAN OR BELARUS OR BOLIVIA OR BOSNIA OR HERZEGOVINA OR BRAZIL or BULGARIA OR 'CAPE VERDE' OR CHINA OR COLOMBIA OR CUBA OR DJIBOUTI OR 'DOMINICAN REPUBLIC' OR ECUADOR OR EGYPT OR 'EL SALVADOR' OR FIJI OR GEORGIA OR GUATEMALA OR GUYANA OR HONDURAS OR INDONESIA OR IRAN OR IRAQ OR JAMAICA OR JORDAN or KAZAKHSTAN OR KIRIBATI OR MACEDONIA OR MALDIVES OR 'MARSHALL ISLANDS' OR MICRONESIA OR MOROCCO OR NAMIBIA OR PARAGUAY OR PERU OR PHILIPPINES OR ROMANIA OR SAMOA OR SERBIA OR MONTENEGRO OR 'SRI LANKA' OR SURINAME OR SWAZILAND OR SYRIA or THAILAND OR TONGA OR TUNISIA OR TURKMENISTAN OR UKRAINE OR VANUATU OR 'WEST BANK' OR GAZA or ANTIGUA OR BARBUDA OR ARGENTINA OR BARBADOS OR BELIZE OR BOTSWANA OR CHILE OR 'COSTA RICA' OR CROATIA OR 'CZECH REPUBLIC' OR DOMINICA OR 'EQUATORIAL GUINEA' OR ESTONIA OR GABON OR GRENADA OR HUNGARY OR LATVIA OR LEBANON OR LIBYA OR LITHUANIA or MALAYSIA OR MAURITIUS OR MAYOTTE OR MEXICO OR 'MARIANA ISLANDS' OR OMAN OR PALAU OR PANAMA OR POLAND OR 'RUSSIAN FEDERATion' or SEYCHELLES OR 'SLOVAK REPUBLIC' OR 'SOUTH AFRICA' OR 'ST. KITTS' OR NEVIS OR 'ST. LUCIA' OR 'ST. VINCENT' OR GRENADINES OR TRINIDAD OR TOBAGO OR TURKEY OR URUGUAY OR VENEZUELA or ASIA OR 'WEST INDIES' OR POLYNESIA OR MICRONESIA OR 'MIDDLE eAST' OR AFRICA OR 'LATIN AMERICA' OR 'CENTRAL AMERICA' OR 'SOUTH AMERICA' OR CARIBBEAN OR hispaniola OR 'SOUTHEAST ASIA' OR 'SUB SAHARAN AFRICA' OR 'EASTERN EUROPE' or BURMA OR 'eAST TIMOR' OR CONGO OR GUIANA OR CZECHOSLOVAKIA OR LAOS OR 'NORTH KOREA' OR 'IVORY COAST' OR 'REPUBLIC of GEORGIA' OR YEMEN OR ZAIRE OR SLOVAKIA OR 'SOVIET UNION' OR SURINAM OR USSR OR SAMOA OR YUGOSLAVIA or 'DEVELOPING nATIONS' OR 'developing COUNTRIES' OR 'LESS DEVELOPED NATIONS' or 'less developed COUNTRIES' OR 'THIRD WORLD NATIONS' OR 'third world COUNTRIES' OR 'UNDER DEVELOPED NATIONS' or 'underdeveloped countries' OR 'POOR NATIONS' OR 'poor COUNTRIES' OR 'poor ECONOMIES') and (DOCTOR or doctors OR PERSONNEL OR WORKER or workers OR STUDENT or students OR PHYSICIAN OR PROVIDER or providers OR PARAMEDICAL OR MIDWIFE OR MIDWIVES OR PROFESSIONAL or professionals OR NURSE or nurses OR PRACTITIONER OR THERAPIST OR ATTENDANT or attendants OR HOSPITAL or hospitals OR POST or posts or CENTER or centers OR FACILITIES OR FACILITY OR SERVICE OR COMMUnity)

ERIC

Set	Items	Description
S1	1180	AFGHANISTAN OR BANGLADESH OR BENIN OR BHUTAN OR BURKINA()F-ASO OR BURUNDI OR CAMBODIA OR CAMEROON
S2	8262	CENTRAL()AFRICAN()REPUBLIC OR CHAD OR COMOROS OR CONGO OR -

- COTE()D'IVOIRE OR ERITREA OR COTE()D()IVOIRE OR ETHIOPIA OR G-
AMBIA OR GHANA OR GUINEA OR HAITI OR INDIA OR KENYA OR KOREA -
OR KYRGYSZSTAN OR LAO OR LAOS OR LESOTHO OR LIBERIA
- S3 4411 MADAGASCAR OR MALAWI OR MALI OR MAURITANIA OR MOLDOVA OR M-
ONGOLIA OR MOZAMBIQUE OR MYANMAR OR NEPAL OR NICARAGUA OR NIG-
ER OR NIGERIA OR PAKISTAN OR RWANDA OR SAO()TOME OR SENEGAL OR
SIERRA()LEONE OR SOLOMON()ISLANDS OR SOMALIA OR SUDAN
- S4 5211 TAJIKISTAN OR TANZANIA OR TIMOR OR TOGO OR UGANDA OR UZBEK-
ISTAN OR VIETNAM OR YEMEN OR ZAIRE OR ZAMBIA OR ZIMBABWE OR A-
LBANIA OR ALGERIA OR ANGOLA OR ARMENIA OR AZERBAIJAN OR BELA-
RUS OR BOLIVIA OR BOSNIA OR HERZEGOVINA OR BRAZIL
- S5 17169 BULGARIA OR CAPE()VERDE OR CHINA OR COLOMBIA OR CUBA OR DJ-
IBOUTI OR DOMINICAN()REPUBLIC OR ECUADOR OR EGYPT OR EL()SALV-
ADOR OR FIJI OR GEORGIA OR GUATEMALA OR GUYANA OR HONDURAS OR
INDONESIA OR IRAN OR IRAQ OR JAMAICA OR JORDAN
- S6 3941 KAZAKHSTAN OR KIRIBATI OR MACEDONIA OR MALDIVES OR MARSHAL-
L()ISLANDS OR MICRONESIA OR MOROCCO OR NAMIBIA OR PARAGUAY OR
PERU OR PHILIPPINES OR ROMANIA OR SAMOA OR SERBIA OR MONTENEG-
RO OR SRI()LANKA OR SURINAME OR SWAZILAND OR SYRIA
- S7 1971 THAILAND OR TONGA OR TUNISIA OR TURKMENISTAN OR UKRAINE OR
VANUATU OR WEST()BANK OR GAZA
- S8 3843 ANTIGUA OR BARBUDA OR ARGENTINA OR BARBADOS OR BELIZE OR B-
OTSWANA OR CHILE OR COSTA()RICA OR CROATIA OR CZECH()REPUBLIC
OR DOMINICA OR EQUATORIAL()GUINEA OR ESTONIA OR GABON OR GREN-
ADA OR HUNGARY OR LATVIA OR LEBANON OR LIBYA OR LITHUANIA
- S9 11663 MALAYSIA OR MAURITIUS OR MAYOTTE OR MEXICO OR MARIANA()ISL-
ANDS OR OMAN OR PALAU OR PANAMA OR POLAND OR RUSSIAN()FEDERAT-
ION OR SEYCHELLES OR SLOVAK()REPUBLIC OR SOUTH()AFRICA OR ST(-
)KITTS OR ST(1W)KITTS OR NEVIS OR ST()LUCIA OR ST(1W)LUCIA
- S10 1602 ST()VINCENT OR GRENADINES OR TRINIDAD OR TOBAGO OR TURKEY -
OR URUGUAY OR VENEZUELA
- S11 12241 ASIA OR WEST()INDIES OR POLYNESIA OR MICRONESIA OR MIDDLE -
EAST OR AFRICA OR LATIN AMERICA OR CENTRAL AMERICA OR SOUTH A-
MERICA OR CARIBBEAN OR WEST INDIES REGION OR HISPA?OLA OR SOU-
THEAST ASIA OR SUB()SAHARAN()AFRICA OR EASTERN()EUROPE
- S12 2 HISPANIOLA
- S13 5165 BURMA OR EAST()TIMOR OR CONGO OR GUIANA OR CZECHOSLOVAKIA -
OR LAOS OR NORTH()KOREA OR IVORY()COAST OR REPUBLIC(1W)GEORG-
IA OR YEMEN OR ZAIRE OR SLOVAKIA OR SOVIET()UNION OR SURINAM -
OR USSR OR SAMOA OR YUGOSLAVIA
- S14 13162 DEVELOPING()(NATION? ? OR COUNTRIES) OR LESS()DEVELOPED()(-
NATION? ? OR COUNTRIES) OR THIRD()WORLD()NATION? ? OR COUNTR-
IES) OR UNDER()DEVELOPED()NATION? ? OR COUNTRIES) OR POOR()-
(NATION? ? OR COUNTRIES OR ECONOMIES)
- S15 60499 S1 OR S2 OR S3 OR S4 OR S5 OR S6 OR S7 OR S8 OR S9 OR S10 -
OR S11 OR S12 OR S13 OR S14
- S16 615656 DOCTOR? ? OR PERSONNEL OR WORKER? ? OR STUDENT? ? OR PHYSI-








- CIAN? ? OR PROVIDER? ? OR PARAMEDICAL OR MIDWIFE OR MIDWIVES -
OR PROFESSIONAL? ? OR NURSE? ? OR PRACTITIONER? ? OR THERAPIS-
T? ? OR ATTENDANT? ? OR HOSPITAL? ? OR POST? ?
- S17 293304 CENTER? ? OR FACILITIES OR FACILITY OR SERVICE? ? OR COMMU-
NITY
- S18 917637 EDUCATION OR INSERVICE OR TRAINING OR AUDIT OR PRACTICE OR
INTERVENTION? ? OR ASSURANCE OR KNOWLEDGE OR ATTITUDE? ?OR CO-
VERAGE OR OCCUPATION? ? OR OCCUPATIONAL OR PLANNING OR VOCAT-
ION OR VOCATIONAL OR CAREER OR EMPLOYEE
- S19 251013 JOB()SATISFACTION OR MENTORING OR WORK OR WORKING OR WAGE -
OR WAGES OR BENEFIT? ? OR SAFETY OR POPULATION OR DEMOGRAPHY -
OR INCENTIVES OR HUMAN()ADAPTIBILITY OR PREVENTION OR IMMUNIZ-
ATIONS OR IMMUNIZE OR VACCINATIONS OR VACCINATE
- S20 223412 VACCINE? ? OR DISEASE OR TREATMENT OR THERAPY OR PREVENTIVE
OR SANITATION OR IMPROVEMENT OR ECONOMIC? ? OR INTEGRATION OR
INITIATIVES OR STRATEGIC()PLANNING OR LEADERSHIP OR SECTOR()-
WIDE OR DECENTRALIZATION OR DECONCENTRATION
- S21 98031 AUTONOMIZATION OR AUTHORITY OR FEE OR FEES OR PAYMENT OR R-
ISK OR INSURANCE OR FINANCING OR COPAYMENT OR CASH OR VOUCHERS
OR COST OR EFFICIENT OR EFFICIENCY OR SAVINGS()ACCOUNT? ? OR
MOBILIZATION OR EMPOWERMENT OR ENGAGEMENT
- S22 116862 COALITION? ? OR ORGANIZATION? ? OR CONSUMER OR PATIENT OR -
REPORT()CARD? ? OR SCORECARDS OR PATIENT()SATISFACTION OR MAR-
KETING OR FRANCHISE OR DEMAND
- S23 189900 CONTRACT OR CONTRACTING OR REGULATION OR ACCREDITATION OR -
LICENSING OR SERVICE()AGREEMENT ? ? OR PARTNERSHIP? ? OR STEW-
ARDSHIP OR PERFORMANCE OR QUALITY OR BENCHMARK OR BENCHMARKING
OR REORGANIZATION OR REDESIGN OR RE()ENGINEERING OR TEAM
- S24 263302 TEAMS OR GUIDELINE? ? OR SUPPLY()CHAIN OR CERTIFICATE(1W)N-
EED OR ASSESSMENT OR MOTIVATION OR COMPETENCE OR STAFF OR STA-
FFING OR SKILL OR PRODUCTIVITY
- S25 615656 DOCTOR? ? OR PERSONNEL OR WORKER? ? OR STUDENT? ? OR PHYSI-
CIAN? ? OR PROVIDER? ? OR PARAMEDICAL OR MIDWIFE OR MIDWIVES -
OR PROFESSIONAL? ? OR NURSE? ? OR PRACTITIONER? ? OR THERAPIS-
T? ? OR ATTENDANT? ? OR HOSPITAL? ? OR POST? ?
- S26 365428 STUDY OR STUDIES
- S27 293304 CENTER? ? OR FACILITIES OR FACILITY OR SERVICE? ? OR COMMU-
NITY
- S28 15944 CHILDREN(2W) HOSPITAL? ?/TI OR COMMUNITY()HEALTH()SERVICES-
/DE OR DOCTOR/TI,AB OR DOCTORS/TI,AB OR HEALTH PERSONNEL! OR
HEALTH POSTS/TI,AB OR HEALTH()SERVICES()RESEARCH/DE OR HEALTH-
()WORKERS/TI,AB OR HOSPITAL/TI,AB OR HOSPITALS/TI,AB
- S29 1 HEALTH()POSTS/TI,AB
- S30 9913 MEDICAL()STUDENTS/TI OR OBSTETRIC()CARE/TI OR PHARMACEUTIC-
AL()SERVICES/DE OR PHARMACY()SERVICE()HOSPITAL/DE OR PHYSICIA-
NS/TI,AB OR PRIMARY()HEALTH()CARE/TI,AB OR PRIMARY()HEALTH()C-
ENTERS/TI,AB OR PROVIDERS/TI,AB

S31 68368 AUDIT/TI OR EDUCATION, CONTINUING! OR HEALTH CARE COSTS! OR
 HEALTH EDUCATION! OR HEALTH KNOWLEDGE, ATTITUDES, PRACTICE! -
 OR IMPACT/TI OR INSERVICE, TRAINING! OR INTERVENTION/TI,AB OR
 QUALITY ASSURANCE, HEALTHCARE! OR TRAINING/TI
 S32 0 QUALITY ASSURANCE, HEALTH CARE!
 S33 0 HEALTH KNOWLEDGE, ATTITUDES, PRACTICE!
 S34 0 EPIDEMIOLOGIC METHODS!
 S35 0 S59 AND (HEALTH? OR DOCTOR? OR PHYSICIAN? ? OR PHARMAC? OR
 MIDWIF? OR MIDWIVES OR DENTIST? ? OR NURSE OR NURSES OR CLIN-
 IC? ? OR HOSPITAL? ?)
 S36 0 S58 OR S37
 S37 0 S63 AND S57 AND S56 AND S55
 S38 0 S63/TI AND S57/TI AND S56/TI AND S55/TI
 S39 0 S64 AND (HEALTH? OR DOCTOR? OR PHYSICIAN? ? OR PHARMAC? OR
 MIDWIF? OR MIDWIVES OR DENTIST? ? OR NURSE OR NURSES OR CLI-
 NIC? ? OR HOSPITAL? ?)
 S40 0 S65 AND (HEALTH? OR DOCTOR? OR PHYSICIAN? ? OR PHARMAC? OR
 MIDWIF? OR MIDWIVES OR DENTIST? ? OR NURSE OR NURSES OR CLIN-
 IC? ? OR HOSPITAL? ?)
 S41 57767 S15 AND (S16 OR S17 OR S18 OR S19 OR S20 OR S21 OR S22 OR -
 S23 OR S24 OR S25 OR S26 OR S27 OR S28 OR S29 OR S30 OR S31)
 S42 4920 S41 AND (HEALTH? OR DOCTOR? OR PHYSICIAN? ? OR PHARMAC? OR
 MIDWIF? OR MIDWIVES OR DENTIST? ? OR NURSE OR NURSES OR CLIN-
 IC? ? OR HOSPITAL? ?)
 S43 3403 S42/TI
 S44 2401 S43/1980:2006
 S45 89844 HEALTH? OR DOCTOR? OR PHYSICIAN? ? OR PHARMAC? OR MIDWIF? -
 OR MIDWIVES OR DENTIST? ? OR NURSE OR NURSES OR CLINIC? ? OR -
 HOSPITAL? ?
 S46 21589 S45/TI
 S47 870 S15 AND S46
 S48 633 S47/1980:2006
 S49 621 S41 AND S48
 S50 462 S41/TI AND S49
 S62 289
 ?

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Personal Account Name: **samrowe**

#	Search History	Results	Display	
1	(afghanistan or bangladesh or benin or burkina faso or burundi or cambodia or central african republic or chad or comoros or congo or cote d'ivoire or eritrea or ethiopia or ivory coast or gambia or ghana or guinea or haiti or india or kenya or korea or kyrgyzstan or lao or laos or lesotho or liberia or madagascar or malawi or mali or mauritania or modova or mongoli or mozambique or mayanmar or nepal or nicaragua or niger or nigeria or pakistan or rwanda or sao tome or senegal or sierra leone or solomon islands or somalia or sudan or tajikistan or tanzania or timor or togo or uganda or uzbekistan or vietnam or yemen or zaire or zambia or zimbabwe or albania or algeria or angola or armenia or azerbaijan or belarus or bolivia or bosnia or herzegovina or brazil or bulgaria or cape verde or china or colombia or cuba or djibouti or dominican republic or ecuador or egypt or el salvador or fiji or georgia or guatemala or guyana or honduras or indonesia or iran or iraq or jamaica or jordan or kazakhstan or kiribati or macedonia or maldives or marshall islands or micronesia or morocco or namibia or paraguay or peru or philippines or romania or samoa or serbia or montenegro or sri lanka or suriname or swaziland or syria).mp. [mp=title, other title, abstract, heading words]	1565	DISPLAY	CONTRACT
2	(doctor\$1 or personnel or worker\$1 or student\$1 or physician\$1 or provider\$1 or paramedical or midwife or midwives or professional\$1 or nurse\$1 or practitioner\$1 or therapist\$1 or attendant\$1 or hospital\$1 or post\$1).mp. [mp=title, other title, abstract, heading words]	98048	DISPLAY	
3	1 and 2	530	DISPLAY	
4	(center\$1 or facilities or facility or service\$1 or community).mp. [mp=title, other title, abstract, heading words]	111790	DISPLAY	
5	(education or inservice or training or audit or practice or intervention\$1 or assurance or knowledge or attitude\$1 or coverage or	96729	DISPLAY	

	occupation\$1 or occupational or planning or vocation or vocational or career or employee).mp. [mp=title, other title, abstract, heading words]		
6	(job satisfaction or mentoring or work or working or wage or wages or benefit\$1 or safety or population or demography or incentives or human adaptability or prevention or immunizations or immunize or vaccinations or vaccinate).mp. [mp=title, other title, abstract, heading words]	70702	 DISPLAY
7	(vaccine\$1 or disease or treatment or therapy or preventive or sanitation or improvement or economic\$1 or integration or initiatives or strategic planning or leadership or sector wide or decentralization or deconcentration or autonomization or authority or fee or fees or payment or risk or insurance or financing or copayment or cash or vouchers or cost or efficient or efficiency or savings account\$1 or mobilization or empowerment or engagement).mp. [mp=title, other title, abstract, heading words]	86083	 DISPLAY
8	(coalition\$1 or organization\$1 or consumer or patient or report card\$1 or scorecards or patient satisfaction or marketing or franchise or demand).mp. [mp=title, other title, abstract, heading words]	45752	 DISPLAY
9	(contract or contracting or regulation or accreditation or licensing or service agreement\$1 or partnership\$1 or stewardship or performance or quality or benchmark or benchmarking or reorganization or redesign or re-engineering or team or teams or guideline\$1 or supply chain or certificate of need or assessment or motivation or competence or staff or staffing or skill or productivity).mp. [mp=title, other title, abstract, heading words]	86537	 DISPLAY
10	4 or 5 or 6 or 7 or 8 or 9	226801	 DISPLAY
11	3 and 10	481	 DISPLAY
12	(thailand or tonga or tunisia or turkmenistan or ukraine or vanuatu or west bank or gaza or antigua or barbuda or argentina or barbados or belize or botswana or chile or costa rica or croatia or czech republic or dominica or equatorial guinea or estonia or gabon or grenada or hungary or latvia or lebanon or libya or lithuania or libya or malaysia or mauritius or mayotte or mexico).mp. [mp=title, other title,	655	 DISPLAY

	abstract, heading words]		
13	(mariana islands or oman or palau or panama or poland or russian federation or seychelles or slovak republic or south africa or st kitts or nevis or st lucia or st vincent or grenadines or trinidad or tobago or turkey or uruguay or venezuela or asia or west indies or polynesia or micronesia or middle east or africa or latin america or central america or south america or caribbean).mp. [mp=title, other title, abstract, heading words]	1465	DISPLAY
14	(((((developing adj (nation\$1 or country or countries)) or less developed) adj (country or counties)) or third world) adj (nation\$1 or country or countries or economies)).mp. [mp=title, other title, abstract, heading words]	24	DISPLAY
15	(hispanola or southeast asia or saharan africa or eastern europe or hispaniola or burma or east timor or congo or guiana or czechoslovakia or laos or north korea or yemen or republic of georgia or zaire or slovakia or soviet union or surinam or ussr or yugoslavia).mp. [mp=title, other title, abstract, heading words]	690	DISPLAY
16	12 or 13 or 14 or 15	2389	DISPLAY
17	3 and 16	122	DISPLAY
18	11 or 17	493	DISPLAY
19	limit 18 to yr="2000 - 2006"	184	DISPLAY
20	from 19 keep 1-184	184	DISPLAY
21	limit 18 to yr="1980 - 1999"	307	DISPLAY
22	limit 18 to yr="1990 - 1999"	159	DISPLAY
23	from 22 keep 1-159	159	DISPLAY
24	limit 18 to yr="1950 - 1989"	150	DISPLAY
25	from 24 keep 1-150	150	DISPLAY
Combine Searches Delete Searches Save Search/Alert			

Advanced Search
 Basic Search
 Find Citation
 More Fields
 Search Tools

Keyword
 Map Term

Enter **Keyword** or phrase (use "\$" for truncation):

☒ Map Term to Subject Heading

MEDLINE (via PubMed) (In Dialog)

- | Set | Items | Description |
|-----|---------|---|
| S1 | 1543769 | EDUCATION OR INSERVICE OR TRAINING OR AUDIT OR PRACTICE OR INTERVENTION? ? OR ASSURANCE OR KNOWLEDGE OR ATTITUDE? ? OR COVERAGE OR OCCUPATION? ? OR OCCUPATIONAL OR PLANNING OR VOCATION OR VOCATIONAL OR CAREER OR EMPLOYEE |
| S2 | 1825485 | JOB()SATISFACTION OR MENTORING OR WORK OR WORKING OR WAGE - OR WAGES OR BENEFIT? ? OR SAFETY OR POPULATION OR DEMOGRAPHY - OR INCENTIVES OR HUMAN()ADAPTIBILITY OR PREVENTION OR IMMUNIZATIONS OR IMMUNIZE OR VACCINATIONS OR VACCINATE |
| S3 | 4957568 | VACCINE? ? OR DISEASE OR TREATMENT OR THERAPY OR PREVENTIVE OR SANITATION OR IMPROVEMENT OR ECONOMIC? ? OR INTEGRATION OR INITIATIVES OR STRATEGIC()PLANNING OR LEADERSHIP OR SECTOR()-WIDE OR DECENTRALIZATION OR DECONCENTRATION |
| S4 | 1259660 | AUTONOMIZATION OR AUTHORITY OR FEE OR FEES OR PAYMENT OR RISK OR INSURANCE OR FINANCING OR COPAYMENT OR CASH OR VOUCHERS OR COST OR EFFICIENT OR EFFICIENCY OR SAVINGS()ACCOUNT? ? OR MOBILIZATION OR EMPOWERMENT OR ENGAGEMENT |
| S5 | 1548180 | COALITION? ? OR ORGANIZATION? ? OR CONSUMER OR PATIENT OR - REPORT()CARD? ? OR SCORECARDS OR PATIENT()SATISFACTION OR MARKETING OR FRANCHISING OR DEMAND |
| S6 | 7341918 | S1 OR S2 OR S3 OR S4 OR S5 |
| S7 | 1203296 | CONTRACT OR CONTRACTING OR REGULATION OR ACCREDITATION OR - LICENSING OR SERVICE()AGREEMENT? ? OR PARTNERSHIP? ? OR STEWARDSHIP OR PERFORMANCE OR QUALITY OR BENCHMARK OR BENCHMARKING OR REORGANIZATION OR REDESIGN OR RE()ENGINEERING OR TEAM |
| S8 | 731744 | TEAMS OR GUIDELINE? ? OR SUPPLY()CHAIN OR CERTIFICATE(1W)N- NEED OR ASSESSMENT OR MOTIVATION OR COMPETENCE OR STAFF OR STAFFING OR SKILL OR PRODUCTIVITY |
| S9 | 7986723 | S6 OR S7 OR S8 |
| S10 | 13335 | AFGHANISTAN OR BANGLADESH OR BENIN OR BHUTAN OR BURKINA()FASO OR BURUNDI OR CAMBODIA OR CAMEROON |
| S11 | 233582 | CENTRAL()AFRICAN()REPUBLIC OR CHAD OR COMOROS OR CONGO OR - COTE()D'IVOIRE OR ERITREA OR COTE()D'IVOIRE OR ETHIOPIA OR GAMBIA OR GHANA OR GUINEA OR HAITI OR INDIA OR KENYA OR KOREA - OR KYRGYSZSTAN OR LAO OR LAOS OR LESOTHO OR LIBERIA |
| S12 | 49258 | MADAGASCAR OR MALAWI OR MALI OR MAURITANIA OR MOLDOVA OR MONGOLIA OR MOZAMBIQUE OR MYANMAR OR NEPAL OR NICARAGUA OR NIGER OR NIGERIA OR PAKISTAN OR RWANDA OR SAO()TOME OR SENEGAL OR SIERRA()LEONE OR SOLOMON()ISLANDS OR SOMALIA OR SUDAN |
| S13 | 65091 | TAJIKISTAN OR TANZANIA OR TIMOR OR TOGO OR UGANDA OR UZBEKISTAN OR VIETNAM OR YEMEN OR ZAIRE OR ZAMBIA OR ZIMBABWE OR ALBANIA OR ALGERIA OR ANGOLA OR ARMENIA OR AZERBAIJAN OR BELARUS OR BOLIVIA OR BOSNIA OR HERZEGOVINA OR BRAZIL |
| S14 | 93907 | BULGARIA OR CAPE()VERDE OR CHINA OR COLOMBIA OR CUBA OR DJIBOUTI OR DOMINICAN()REPUBLIC OR ECUADOR OR EGYPT OR EL()SALV- |

ADOR OR FIJI OR GEORGIA OR GUATEMALA OR GUYANA OR HONDURAS OR
 INDONESIA OR IRAN OR IRAQ OR JAMAICA OR JORDAN
 S15 28785 KAZAKHSTAN OR KIRIBATI OR MACEDONIA OR MALDIVES OR MARSHAL-
 L()ISLANDS OR MICRONESIA OR MOROCCO OR NAMIBIA OR PARAGUAY OR
 PERU OR PHILIPPINES OR ROMANIA OR SAMOA OR SERBIA OR MONTENEG-
 RO OR SRI()LANKA OR SURINAME OR SWAZILAND OR SYRIA
 S16 32076 THAILAND OR TONGA OR TUNISIA OR TURKMENISTAN OR UKRAINE OR
 VANUATU OR WEST()BANK OR GAZA
 S17 46899 ANTIGUA OR BARBUDA OR ARGENTINA OR BARBADOS OR BELIZE OR B-
 OTSWANA OR CHILE OR COSTA()RICA OR CROATIA OR CZECH()REPUBLIC
 OR DOMINICA OR EQUATORIAL()GUINEA OR ESTONIA OR GABON OR GREN-
 ADA OR HUNGARY OR LATVIA OR LEBANON OR LIBYA OR LITHUANIA
 S18 88268 MALAYSIA OR MAURITIUS OR MAYOTTE OR MEXICO OR MARIANA()ISL-
 ANDS OR OMAN OR PALAU OR PANAMA OR POLAND OR RUSSIAN()FEDERAT-
 ION OR SEYCHELLES OR SLOVAK()REPUBLIC OR SOUTH()AFRICA OR ST(-
)KITTS OR ST(1W)KITTS OR NEVIS OR ST()LUCIA OR ST(1W)LUCIA
 S19 23371 ST()VINCENT OR GRENADINES OR TRINIDAD OR TOBAGO OR TURKEY -
 OR URUGUAY OR VENEZUELA
 S20 113013 ASIA OR WEST()INDIES OR POLYNESIA OR MICRONESIA OR MIDDLE -
 EAST OR AFRICA OR LATIN AMERICA OR CENTRAL AMERICA OR SOUTH A-
 MERICA OR CARIBBEAN OR WEST INDIES REGION OR HISPA?OLA OR SOU-
 THEAST ASIA OR SUB()SAHARAN()AFRICA OR EASTERN()EUROPE
 S21 44 HISPANIOLA
 S22 84172 BURMA OR EAST()TIMOR OR CONGO OR GUIANA OR CZECHOSLOVAKIA -
 OR LAOS OR NORTH()KOREA OR IVORY()COAST OR REPUBLIC(1W)GEORG-
 IA OR YEMEN OR ZAIRE OR SLOVAKIA OR SOVIET()UNION OR SURINAM -
 OR USSR OR SAMOA OR YUGOSLAVIA
 S23 65946 DEVELOPING() (NATION? ? OR COUNTRIES) OR LESS()DEVELOPED() (-
 NATION? ? OR COUNTRIES) OR THIRD()WORLD() (NATION? ? OR COUNTR-
 IES) OR UNDER()DEVELOPED() (NATION? ? OR COUNTRIES) OR POOR() (-
 NATION? ? OR COUNTRIES OR ECONOMIES)
 S24 761381 S10 OR S11 OR S12 OR S13 OR S14 OR S15 OR S16 OR S17 OR S18
 OR S19 OR S20 OR S21 OR S22 OR S23
 S25 1624852 DOCTOR? ? OR PERSONNEL OR WORKER? ? OR STUDENT? ? OR PHYSI-
 CIAN? ? OR PROVIDER? ? OR PARAMEDICAL OR MIDWIFE OR MIDWIVES -
 OR PROFESSIONAL? ? OR NURSE? ? OR PRACTITIONER? ? OR THERAPIS-
 T? ? OR ATTENDANT? ? OR HOSPITAL? ? OR POST? ?
 S26 825622 CENTER? ? OR FACILITIES OR FACILITY OR SERVICE? ? OR COMMU-
 NITY
 S27 2087266 S25 OR S26
 S28 188544 S27 AND S24
 S29 154907 S9 AND S28
 S30 73085 S29 AND (STUDY OR STUDIES)
 S31 69232 S30/AB
 S32 5865106 S9/TI,AB
 S33 63989 S32 AND S31
 S34 44508 S33/ENG,HUMAN

S35 91295 S24/TI,AB AND S27/TI,AB
 S36 30610 S35 AND S34
 S37 30610 S24/TI,AB AND S36
 S38 2640315 S6/TI OR S7/TI OR S8/TI
 S39 10541 S38 AND S37
 S40 604079 S26/TI OR S27/TI
 S41 2816 S39 AND S40
 S42 2640315 S1/TI OR S2/TI OR S3/TI OR S4/TI OR S5/TI OR S7/TI OR S8/TI
 S43 15518 S42 AND S34
 S44 7555 S10/AB
 S45 6014 S10/TI
 S46 136210 S11/TI,AB
 S47 33979 S12/TI,AB
 S48 41149 S13/TI,AB
 S49 53060 S14/TI,AB
 S50 53060 S14/TI,AB
 S51 15223 S15/TI,AB
 S52 10079 S10/TI,AB
 S53 13621 S16/TI,AB
 S54 25662 S17/TI,AB
 S55 39308 S18/TI,AB
 S56 16152 S19/TI,AB
 S57 48666 S20/TI,AB
 S58 44 S21/TI,AB
 S59 23652 S22/TI,AB
 S60 20797 S23/TI,AB
 S61 771237 60 OR S59 OR S58 OR S57 OR S56 OR S55 OR S54 OR S53 OR S52
 OR S51 OR S50 OR S48 OR S47 OR S46
 S62 406325 S60 OR S59 OR S58 OR S57 OR S56 OR S55 OR S54 OR S53 OR S52
 OR S51 OR S50 OR S48 OR S47 OR S46
 S63 72102 S62 AND S42
 S64 11352 S34 AND S63
 S65 10541 S64 AND (S25/TI,AB OR S26/TI,AB)
 S66 721008 CHILDREN(2W)HOSPITAL? ?/TI OR COMMUNITY()HEALTH()SERVICES/
 DE OR DOCTOR/TI,AB OR DOCTORS/TI,AB OR HEALTH PERSONNEL! OR H-
 EALTH()POSTS/TI,AB OR HEALTH()SERVICES()RESEARCH/DE OR HEALTH-
 ()WORKERS/TI,AB OR HOSPITAL/TI,AB OR HOSPITALS/TI,AB
 S67 153675 MEDICAL()STUDENTS/TI OR OBSTETRIC()CARE/TI OR PHARMACEUTIC-
 AL()SERVICES/DE OR PHARMACY()SERVICE()HOSPITAL/DE OR PHYSICIA-
 NS/TI,AB OR PRIMARY()HEALTH()CARE/TI,AB OR PRIMARY()HEALTH()C-
 ENTRES/TI,AB OR PROVIDERS/TI,AB
 S68 818451 S66 OR S67
 S69 413517 AUDIT/TI OR EDUCATION, CONTINUING! OR HEALTH CARE COSTS! OR
 HEALTH EDUCATION! OR HEALTH KNOWLEDGE, ATTITUDES, PRACTICE! -
 OR IMPACT/TI OR INSERVICE TRAINING! OR INTERVENTION/TI,AB OR -
 QUALITY ASSURANCE, HEALTHCARE! OR TRAINING/TI
 S71 149104 QUALITY ASSURANCE, HEALTH CARE!

S72 539997 S71 OR S69
S73 11369 S72 AND S68 AND S24
S74 8890 S65 NOT S73
S75 6723 S74 AND EPIDEMIOLOGIC METHODS!
S76 6723 S75/ENG, HUMAN, AB
S77 6716 S76/1970:2006
S78 6705 S76/1975:2006
S79 6657 S76/1980:2006

SCI Web Of Science, SSCI, and Global Health (In Dialog)

ss (Health(2N)services OR health(2N)workers OR health(2N)clinics OR health()care OR birth()attendants
OR health(2N)providers OR health(2N)education)/ti AND

Ss (Asia OR Africa OR developing()countries OR Middle()East OR Latin()America OR south()America OR
eastern()europe)/de,ti AND

(PERFORMANCE OR QUALITY OR BENCHMARK? OR Effective? Or efficien? OR appraisal?
OR Training OR education OR knowledge OR competen? OR evaluation OR cost()recovery)/de,ti,ab OR
Ss (analysis OR SKILL OR PRODUCTIVITY OR IMPACT OR INTERVENTION OR initiative?
OR rating OR REPORT()CARD? OR SCORECARD? OR PATIENT()SATISFACTION OR quality)/de,ti,ab

Restrict to 1984-2006

Sociological Abstracts

((kw=nurse or nurses or doctor or doctors or physician
or physicians or therapist or therapists or nurse or nurses or midwife or
midwives or dentist or dentists) and ((kw=afghanistan or bangladesh or
benin or burkina faso or burundi or cambodia or central african republic
or chad or comoros or congo or cote d'ivoire or eritrea or ethiopia or
ivory coast or gambia or ghana or guinea or haiti or india or kenya or
korea or kyrgyzstan or lao or laos or lesotho or liberia or madagascar
or malawi or mali or mauritania or modova or mongoli or mozambique or
myanmar or nepal or nicaragua or niger or nigeria or pakistan or rwanda
or sao tome or senegal or sierra leone or solomon islands or somalia or
sudan or tajikistan or tanzania or timor or togo or uganda or uzbekistan
or vietnam or yemen or zaire or zambia or zimbabwe or albania or algeria
or angola or armenia or azerbaijan or belarus or bolivia or bosnia or
herzegovina or brazil or bulgaria or cape verde or china or colombia or
cuba or djibouti or dominican republic or ecuador or egypt or el salvador
or fiji or georgia or guatemala or guyana or honduras or indonesia or iran
or iraq or jamaica or jordan or kazakhstan or kiribati or macedonia or
maldives or marshall islands or micronesia or morocco or namibia or
paraguay or peru or philippines or romania or samoa or serbia or
montenegro or sri lanka or suriname or swaziland or syria) and (KW=doctor

or doctors or personnel or worker or workers or student or students or physician or physicians or provider or providers or paramedical or midwife or midwives or professional or nurse or practitioner or therapist or attendant or hospital or post or center or facilities or facility or service or community or education or inservice or training or audit or practice or intervention or assurance or knowledge or attitude or coverage or occupation or occupational or planning or vocation or vocational or career or employee or job satisfaction or mentoring or work or working or wage or wages or benefit or safety or population or demography or incentives or human adaptability or prevention or immunizations or immunize or vaccinations or vaccinate or vaccine or disease or treatment or therapy or preventive or sanitation or improvement or economic or integration or initiatives or strategic planning or leadership or sector wide or decentralization or deconcentration or autonomization or authority or fee or fees or payment or risk or insurance or financing or copayment or cash or vouchers or cost or efficient or efficiency or savings account or mobilization or empowerment or engagement or coalition or organization or consumer or patient or report card or scorecards or patient satisfaction or marketing or franchise or demand or contract or contracting or regulation or accreditation or licensing or service agreement or partnership or stewardship or performance or quality or benchmark or benchmarking or regorganization or redesign or re-engineering or team or teams or guideline or supply chain or certificate of need or assessment or motivation or competence or staff or staffing or skill or productivity))) and (program or programs or intervention or interventions)

We also performed a special electronic search of MEDLINE (1950-2006) via Ovid to identify IMCI studies. The search strategy for this special search is below:

- 1 Integrated Management of Childhood Illness.af. (136)
- 2 IMCI.af. (233)
- 3 1 or 2 (271)
- 4 limit 3 to yr="1950 - 2006" (264)
- 5 remove duplicates from 4 (262)
- 6 from 5 keep 1-262 (262)

A.3. Non-electronic search strategy

We also conducted the following non-electronic searches to identify articles for this review:

1) We reviewed bibliographies of 510 previous systematic reviews and other related papers:

1. Abas M, Baingana F, Broadhead J, Iacoponi E, Vanderpyl Abas M, Baingana F, Broadhead J, Iacoponi E, Vanderpyl J. Common mental disorders and primary health care: Current practice in low-income countries. *Harvard Review of Psychiatry*, 2003;11(3):166-73.

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6. Alderman H, Lavy V. Household responses to public health services: cost and quality tradeoffs. *The World Bank Research Observer*, 1996;11(1):3-22
7. Aljunid S. The role of private medical practitioners and their interactions with public health services in Asian countries. *Health Policy and Planning*, 1995;10(4):333-349.
8. Allard P, Maunsell E, Labbé J, Dorval M. Educational interventions to improve cancer pain control: a systematic review. *J Palliat Med*. 2001;4(2):191-203.
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13. Anonymous. Africa child survival initiative-Combating childhood communicable diseases (ACSI-CCCD) Project Report. USAID, CDC. Atlanta, GA: 1994.
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15. Anonymous. Controlling malaria in Africa: progress and priorities. Africa child survival initiative-Combating childhood communicable diseases (ACSI-CCCD) Project Report. USAID, CDC. Atlanta, GA: 1994.
16. Anonymous. MotherCare 1989-1993 : country project descriptions. John Snow, Inc., USAID. September 1993. USAID Award/Agreement Number: DPE-5966-Z-00-8083-00. available at: http://pdf.usaid.gov/pdf_docs/PNABR392.pdf, accessed May 20, 2010.
17. Anonymous. MotherCare Matters: Five Years of Learning and Action 1993-1998. A Compendium of Quarterly Newsletters and Literature Reviews on Maternal and Neonatal Health and Nutrition. Arlington, VA: John Snow, Inc., October 1998. available at: http://pdf.usaid.gov/pdf_docs/PNADN978.pdf, accessed January 21, 2010.

18. Anonymous. Strengthening the performance of community health workers in primary health care. Report of a WHO Study Group. WHO Technical Report Series 780. WHO: Geneva, 1989.
19. Anonymous. Strengthening the performance of community health workers in primary health care. Report of a WHO Study Group. World Health Organ Tech Rep Ser. 1989;780:1-46. available at: http://whqlibdoc.who.int/trs/WHO_TRS_780.pdf, accessed March 29, 2010
20. Anonymous. Training and utilization of auxiliary personnel for rural health teams in developing countries. Report of a WHO Expert Committee. World Health Organization Technical Report Series, Volume 633. World Health Organization: Geneva, 1979.
21. Apisarnthanarak A, Fraser VJ. Bloodborne pathogens and health care workers in developing countries: risk assessments and preventive strategies. *Journal of Infectious Diseases and Antimicrobial Agents*, 2002;19(2):65-79.
22. Arhin-Tenkorang, D. Mobilizing Resources for Health: The Case for User Fees Revisited. Draft C, 3 November 2000. Available at: <http://www.cid.harvard.edu/cidwp/pdf/081.pdf>, accessed Dec 9, 2008.
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2) We searched document inventories and websites of organizations involved in implementing interventions to improve health care provider performance. Gray literature sources and search details are below:

BASICS

Website: <http://www.basics.org/browse.asp?search=Browse>

Dates searched: 1/25/2006

Search strategy: hand search all titles

Capacity Project

Website/contact:

http://www.capacityproject.org/index.php?option=com_content&task=view&id=30&Itemid=55;

Marc Luoma

Dates searched: 3/28–6/6/2006

1) Hand search of all titles

2) Marc Luoma also provided articles.

CDC

Websites:

Global AIDS Program: <http://www.cdc.gov/nchstp/od/gap/resources.html>

President's Emergency Plan for AIDS Relief: <http://www.pepfar.gov/progress/>

Immunizations and Vaccines:

<http://www.cdc.gov/vaccines/programs/global/default.htm>

<http://www.cdc.gov/vaccines/pubs/default.htm>

Reproductive Health: http://www.cdc.gov/reproductivehealth/Products&Pubs/SC_Topics.htm

Division of Parasitic Diseases: <http://www.cdc.gov/ncidod/dpd/recentpubs/default.htm>

Division of Vector-borne Infectious Diseases: <http://www.cdc.gov/ncidod/dvbid/pubs/index.htm>

Division of Laboratory Systems: <http://wwwn.cdc.gov/dls/dlspubs.aspx>

Division of Global Public Health Capacity Development:
<http://www.cdc.gov/cogh/dgphcd/publications.htm>

Sustainable Management Development Program: <http://www.cdc.gov/smdp/publications.htm>

Date searched: 10/7–10/8/2008

Search strategy: hand search all titles

Center for Global Development

Website: http://www.cgdev.org/section/initiatives/_active/ghprn/workinggroups/performance

Dates searched: 9/7/09

Search strategy: hand search all titles

CORE group

Website: <http://www.coregroup.org/document/start.cfm>

Dates searched: 3/30/2006

Search strategy: Searched Child Health and Development Database

(<http://www.coregroup.org/imci/Search.asp?SearchType=normal>) using the following sets of terms separately:

- a) community health workers; adolescent health
- b) community health workers; breastfeeding
- c) Monitoring and evaluation; community health workers
- d) traditional healers & medicine; training and evaluation
- e) TBAs and midwives; training and evaluation
- f) Scaling up & lessons learnt; training and evaluation
- g) community mobilization
- h) Program planning and management
- i) Monitoring & Evaluation

DANIDA

Website: <http://danida.netboghandel.dk/english/>

Dates searched: 1/2006

Search strategy: hand search all titles from “Development Policy” section of Publications webpage; only hard copies were available, received from Finn Schleimann

DFID

Website: <http://www.dfidhealthrc.org/publications/index.html>

Dates searched: 1/27–6/6/2006

Search strategy: hand search all titles

EngenderHealth

Website: <http://www.engenderhealth.org/pubs/>

Dates searched: 10/8/2008

Search strategy: hand search all titles

GAVI

Websites:

http://www.gavialliance.org/media_centre/publications/index.php

<http://www.gavialliance.org/performance/evaluation/index.php>

Dates searched: 10/8/2008

Search strategy: hand search all titles

Global Fund to Fight AIDS, TB, and Malaria

Websites:

http://www.theglobalfund.org/en/media_center/publications/

<http://www.theglobalfund.org/en/performance/>

http://www.theglobalfund.org/en/links_resources/library/

Dates searched: 10/8/2008

Search strategy: hand search all titles

***Note, as of May 10, 2010:

- The Global Fund general publications website has moved to:
<http://www.theglobalfund.org/en/publications/>
- The Global Fund Evaluation library website has moved to:
<http://www.theglobalfund.org/en/library/>

HealthNet TPO online library

Website: <http://healthnettpo.org>

Dates searched: 4/8/2010

Search strategy: Search on "health financing" in the title or keywords under the "Research" section of the website

Human Resources for Health Resource Center

Website: http://www.hrhresourcecenter.org/trip_search/advanced/

Dates searched: 7/24/2006

Search strategy: Searched HRH Documents using the following terms separately:

a) staff performance

- b) incentives
- c) mentoring
- d) motivation
- e) salary
- f) supervision
- g) career development

Website: <http://www.hrhresourcecenter.org/taxonomy/term/37>

Dates searched: 6/30/2008

Search strategy: hand search all titles

International Conference on Social Health Insurance in Developing Countries (Berlin, December 2005)

Website: <http://www.who.int/mediacentre/news/releases/2005/pr65/en/index.html>

Dates searched: 1/24/2006

Search strategy: Searched all titles and abstracts

***Note, as of May 10, 2010:

A better website for the 2005 International Conference on Social Health Insurance in Developing Countries is: http://www.socialhealthprotection.org/berlin_2005_1.php

ICIUM 1997, 2004 Conference proceedings

Website: <http://www.icium.org/index.htm>

Dates searched: 7/20/2006

Search strategy: Searched all titles and abstracts

IHI: Institute for Healthcare Improvement

Websites:

<http://www.ihp.org/IHI/Results/ImprovementStories/#Developing>

<http://www.ihp.org/IHI/Results/NewfromIHIPPrograms/#DevelopingCountries>

<http://www.ihp.org/IHI/Results/WhitePapers/>

<http://www.ihp.org/IHI/Topics/DevelopingCountries/SouthAfrica/Literature/>

Dates searched: 10/8/2008

Search strategy: hand search all titles

INRUD: International network for the Rational Use of Drugs

Website: www.inrud-nepal.org.np

Dates searched: 8/3/2006

Search strategy: Searched all titles in "Publications" webpage

INRUD bibliography, as of February 12, 2007

Dates searched: 9/11–9/26/2008

Search strategy: (using Search function in Reference Manager, version 10)

All non-indexed terms containing “developing countries” OR
 All non-indexed terms containing “low income countries” OR
 All non-indexed terms containing “middle income countries” OR
 All non-indexed terms containing “intervention” OR
 All non-indexed terms containing “performance” OR
 All non-indexed terms containing “Africa” OR
 All non-indexed terms containing “Asia” OR
 All non-indexed terms containing “Latin America” OR
 All non-indexed terms containing “Central America” OR
 All non-indexed terms containing “South America” OR
 All non-indexed terms containing “Caribbean” OR
 All non-indexed terms containing “West Indies” OR
 All non-indexed terms containing “Middle East” OR
 All non-indexed terms containing “Eastern Europe” OR
 All non-indexed terms containing “Hispaniola”

JHPIEGO

Website: <http://www.jhpiego.org/resources/pubs/index.asp>

Dates searched: 6/6/2006

Search strategy:

- 1) Hand search all titles shown under “Browse catalog by category”
- 2) Hand search titles shown under “Browse catalog by topic” in the following topics:
Maximizing Access and Quality (MAQ), Performance Improvement, and Training skills

MSH

Contacts: Linda Rawfik, Joan Cunningham, Kindra Willis (kwillis@msh.org)

Dates searched: 3/30–7/6/2006

Search strategy:

- 1) Four articles were found by Linda Rawfik and Joan Cunningham.
- 2) Kindra Willis also searched using the following sets of “MSH Institutional Memory

Keywords”:

="Afghanistan" / ="Bangladesh" / ="Benin" / ="Bhutan" / ="Burkina Faso" / ="Burundi" /
 ="Cambodia" / ="Cameroon" / ="Central Africa Rep" / ="Chad" / ="Congo" / ="Cote d Ivoire" /
 ="Eritrea" / ="Ethiopia" / ="Gambia" / ="Ghana" / ="Guinea" / ="Haiti" / ="India" / ="Kenya" /
 ="Kyrgyzstan" / ="Lao PDR" / ="Lesotho" / ="Madagascar" / ="Malawi" / ="Mali" /
 ="Mauritania" / ="Moldova" / ="Mozambique" / ="Nepal" / ="Nicaragua" / ="Niger" /
 ="Nigeria" / ="Pakistan" / ="Rwanda" / ="Sierra Leone" / ="Tajikistan" / ="Tanzania" /
 ="Togo" / ="Uganda" / ="Uzbekistan" / ="Vietnam" / ="Zambia" / ="Zimbabwe" / ="Albania" /
 ="Angola" / ="Armenia" / ="Bolivia" / ="Brazil" / ="China" / ="Colombia" / ="Dominican
 Republic" / ="Ecuador" / ="Egypt" / ="El Salvador" / ="Georgia" / ="Guatemala" / ="Guyana" /
 ="Honduras" / ="Indonesia" / ="Iraq" / ="Jamaica" / ="Kazakhstan" / ="Morocco" / ="Namibia"
 / ="Paraguay" / ="Peru" / ="Philippines" / ="Romania" / ="Sri Lanka" / ="Suriname" /
 ="Swaziland" / ="Syria" / ="Thailand" / ="Tunisia" / ="Turkmenistan" / ="Ukraine" /
 ="Argentina" / ="Belize" / ="Botswana" / ="Chile" / ="Costa Rica" / ="Dominica" / ="Gabon" /

="Grenada" /="Hungary" /="Jamaica" /="Malaysia" /="Mauritius" /="Mexico" /="Oman" /
="Panama" /="Poland" /="Russian Federation" /="Seychelles" /="South Africa" /="St Kitts
and Nevis" /="St Lucia" /="St Vincent and the Grenadines" /="Turkey" /="East Timor" /
="Congo" /="Suriname"

AND

="training" /="knowledge attitude practice" /="planning" /="job satisfaction" /="demography"
/="incentives" /="immunizations" /="vaccinations" /="vaccines" /="strategic planning" /
="decentralization" /="financing" /="marketing" /="franchising" /="demand" /="contracting"
/="accreditation" /="licensing" /="benchmarking" /="quality assurance" /="quality control" /
="quality of health care" /="reengineering" /="guidelines" /="assessment" /="staffing" /
="physicians" /="nurses" /="hospitals" /="health services" /="health workers" /="hospitals" /
="physicians" /="primary health care" /="health care costs" /="health education" /="quality
assurance" /="training" /="quality of health care"

="training" /="knowledge attitude practice" /="planning" /="job satisfaction" /="demography"
/="incentives" /="immunizations" /="vaccinations" /="vaccines" /="strategic planning" /
="decentralization" /="financing" /="marketing" /="franchising" /="demand" /="contracting"
/="accreditation" /="licensing" /="benchmarking" /="quality assurance" /="quality control" /
="quality of health care" /="reengineering" /="guidelines" /="assessment" /="staffing" /
="physicians" /="nurses" /="hospitals" /="health services" /="health workers" /="hospitals" /
="physicians" /="primary health care" /="health care costs" /="health education" /="quality
assurance" /="training" /="quality of health care"

AND

="Gabon" /="East Timor"

OR

="Africa" /="Asia" /="Caribbean" /="Central Africa" /="Central America" /="Central Asia" /
="East Africa" /="Eastern Asia" /="Eastern Europe" /="Latin America" /="Middle East" /
="Near East" /="Southeast Asia" /="Southern Africa" /="Southern Asia" /="Southwestern
Asia" /="Sub Saharan Africa" /="West Africa" /="South America"
="Afghanistan" /="Bangladesh" /="Benin" /="Bhutan" /="Burkina Faso" /="Burundi" /
="Cambodia" /="Cameroon" /="Central Africa Rep" /="Chad" /="Congo" /="Cote d Ivoire" /
="Eritrea" /="Ethiopia" /="Gambia" /="Ghana" /="Guinea" /="Haiti" /="India" /="Kenya" /
="Kyrgyzstan" /="Lao PDR" /="Lesotho" /="Madagascar" /="Malawi" /="Mali" /
="Mauritania" /="Moldova" /="Mozambique" /="Nepal" /="Nicaragua" /="Niger" /
="Nigeria" /="Pakistan" /="Rwanda" /="Sierra Leone" /="Tajikistan" /="Tanzania" /
="Togo" /="Uganda" /="Uzbekistan" /="Vietnam" /="Zambia" /="Zimbabwe" /="Albania" /
="Angola" /="Armenia" /="Bolivia" /="Brazil" /="China" /="Colombia" /="Dominican
Republic" /="Ecuador" /="Egypt" /="El Salvador" /="Georgia" /="Guatemala" /="Guyana" /
="Honduras" /="Indonesia" /="Iraq" /="Jamaica" /="Kazakhstan" /="Morocco" /="Namibia"
/="Paraguay" /="Peru" /="Philippines" /="Romania" /="Sri Lanka" /="Suriname" /
="Swaziland" /="Syria" /="Thailand" /="Tunisia" /="Turkmenistan" /="Ukraine" /
="Argentina" /="Belize" /="Botswana" /="Chile" /="Costa Rica" /="Dominica" /="Gabon" /
="Grenada" /="Hungary" /="Jamaica" /="Malaysia" /="Mauritius" /="Mexico" /="Oman" /
="Panama" /="Poland" /="Russian Federation" /="Seychelles" /="South Africa" /="St Kitts
and Nevis" /="St Lucia" /="St Vincent and the Grenadines" /="Turkey" /="East Timor" /
="Congo" /="Suriname" /="Gabon"

OR

= "Africa" / = "Asia" / = "Caribbean" / = "Central Africa" / = "Central America" / = "Central Asia" /
= "East Africa" / = "Eastern Asia" / = "Eastern Europe" / = "Latin America" / = "Middle East" /
= "Near East" / = "Southeast Asia" / = "Southern Africa" / = "Southern Asia" / = "Southwestern
Asia" / = "Sub Saharan Africa" / = "West Africa" / = "South America"

AND

= "occupational qualifications" / = "deconcentration" / = "partnerships" / = "midwives"

PAHO

Website: <http://www.paho.org/Selection.asp?SEL=TP&LNG=ENG>

Dates searched: 5/25–8/8/2006

Search strategy:

1) Searched articles in the “Topics List”

(<http://www.paho.org/Selection.asp?SEL=TP&LNG=ENG>) under the following headings:

a) Human resources development:

- Continuing and distance education
- fellowships
- human resource management
- other
- Policies, Planning and regulation of human resources
- Professional and technical education in health sciences
- training in health communication

b) Health systems and services:

- Health care quality assurance
- Health Services Information system
- Health Services Management
- Health Systems Performance Assessment

2) Searched PAHO Library Institutional Memory Database

(<http://library.paho.org/uh/bin/cgisirsi.exe/Tj5kKlqSNi/300300009/60/50/X>) using the following sets of search terms separately:

- a) Nursing education
- b) Medical education
- c) Training
- d) Training personnel
- e) Financial Incentives
- f) Health occupations
- g) Physician education
- h) Community health workers
- i) Health workers
- j) Nurse midwives
- k) Nurse practitioners
- l) Pharmacists
- m) traditional health workers
- n) traditional birth attendants
- o) disease detection

- p) quality improvement
- q) quality of healthcare
- r) career development
- s) job satisfaction
- t) employee relations
- u) working conditions
- v) work load

Partners in Health

Website: <http://www.pih.org/library/index.html>

Dates searched: 8/21/2006

Search strategy: searched titles in the “Books” and “Essays” categories

PHRPlus

Websites: http://www.phrplus.org/pubs_new.html; <http://www.dcddata.com/abt/abt.htm>

Dates searched: 2/22–3/23/2006

Search strategy:

- 1) Hand search of titles on http://www.phrplus.org/pubs_new.html.
- 2) Searched the PHRplus Resource Center Database (<http://www.dcddata.com/abt/abt.htm>) using the following sets of terms separately:
 - a) "health & education" / "health personnel"
 - b) "education" / "evaluation" / "health personnel" / "health worker motivation" / "incentives" / "quality of service"
 - c) "health personnel" / "evaluation" / "human resource development"
 - d) "case based payment" / "health worker motivation" / "provider payment mechanisms" / "providers" / "quality of service"
 - e) "clinical treatment"/"quality of service"/"quality of care"/"health worker motivation"

Population Council

Website: http://www.popcouncil.org/frontiers/projects_pubs/topics/qualcare/qoc_lacRI.html
(which as of May 10, 2010 is no longer active)

Dates searched: 6/27/2008

Search strategy: hand search all titles

PRIMEII Project

Website: <http://www.prime2.org/prime2/section/44.html>

Dates searched: 3/28–3/29/2006

Search strategy: hand search all titles

PSSMC

Websites:

<http://www.malaria.org/PSSMC/publications.html>

<http://www.malaria.org/PSSMC/reports.html>

Dates searched: 10/8–10/9/2008

Search strategy: hand search all titles

QAP

Website: <http://www.qaproject.org/products.html>

Dates searched: 1/23–1/24/2006

Search strategy: hand search all titles

Safe Injections Global Network (SIGN)

Website: http://www.who.int/medical_devices/collaborations/network/en/

Dates searched: 2006 (exact month and date not known)

Search strategy: hand search all titles

UNICEF

Website: http://www.unicef.org/publications/index_pubs_subject.html

Dates searched: 10/9/2008

Search strategy: hand search all titles

USAID DEC

Website: <http://dec.usaid.gov/>

Dates searched: 3/22-3/27/2006; 10/8/2008

Search strategy, 3/22-3/27/2006: Searched Development Experience System (DEXS)

(<http://dec.usaid.gov/index.cfm?p=search.sqlSearch&CFID=293189&CFTOKEN=99501636>)
using the following sets of terms separately:

- a) On the job training, training allowances, training
- b) Occupational Planning
- c) Employee Relations
- d) Job Satisfaction
- e) Personal Development
- f) Career Management
- g) Mentoring
- h) Working conditions
- i) Work Load
- j) Hours of work
- k) overtime work
- l) full time work
- m) part time work
- n) shift work
- o) night work
- p) leave

- q) maternity leave
- r) sick leave
- s) wages
- t) minimum wage
- u) employment benefits
- v) retirement benefits
- w) maternity benefits
- x) occupational safety
- y) financial incentives
- z) incentives
- aa) health care costs
- bb) alternative health delivery
- cc) health delivery

Search strategy, 10/8/2008: Searched DEXS by using “Advanced Search” function and searched for reports with “Combating Childhood Communicable Diseases” in title only

World Bank

Website: <http://www.worldbank.org/reference/>

Dates searched: 5/31–6/6/2006

Search strategy: Searched “Documents and Reports” database using the following sets of terms separately:

- a) Health systems development and reform
- b) financial incentives
- c) Health professional education
- d) Job satisfaction
- e) career management
- f) health personnel
- g) hours of work
- h) wage scale
- i) employment benefits
- j) quality of health care
- k) traditional health workers
- l) health worker performance
- m) disease treatment
- n) preventive health care
- o) health care costs
- p) on the job training
- q) training health workers

WHO

Websites:

African Programme for Onchocerciasis Control:

<http://www.who.int/apoc/publications/reports/en/index.html>

Alliance for Health Policy and Systems Research: <http://www.who.int/alliance-hpsr/resources/en/>

Blood transfusion safety: http://www.who.int/bloodsafety/education_training/en/

Buruli ulcer: <http://www.who.int/buruli/information/en/>

Child and adolescent health and development:
http://www.who.int/child_adolescent_health/documents/atoz/en/index.html

CHOosing Interventions that are Cost Effective: <http://www.who.int/choice/en/>

Chronic diseases and health promotion: <http://www.who.int/chp/knowledge/en/>

Clean Care is Safer Care: http://www.who.int/gpsc/journals_articles/en/

Contracting: <http://www.who.int/contracting/bibliography/Bibliography-Contracting.pdf>

Control of Neglected Tropical Diseases:
http://www.who.int/neglected_diseases/resources/en/index.html

Diagnostics and Laboratory Technology:
http://www.who.int/diagnostics_laboratory/publications/en/index.html

Dracunculiasis eradication: <http://www.who.int/dracunculiasis/resources/en/>

Medicines Publications and Documentation:
<http://www.who.int/medicinedocs/en/cl/CL1.1.1/clmd,20.html>

Drug resistance: <http://www.who.int/drugresistance/en/>

Emergency and essential surgical care: <http://www.who.int/surgery/en/>

Essential health technologies: <http://www.who.int/ehs/publications/en/>

Essential medicines for children: <http://www.who.int/childmedicines/publications/en/>

Global Health Workforce Alliance: <http://www.who.int/workforcealliance/documents/en/>

Health systems: <http://www.who.int/healthsystems/publications/en/>

Immunization safety: http://www.who.int/immunization_safety/publications/en/

Injection safety: http://www.who.int/injection_safety/en/

IMCI Multi-country Evaluation: <http://www.who.int/imci-mce/publications.htm>

Knowledge management and health: <http://www.who.int/kms/en/>

Leishmaniasis: <http://www.who.int/leishmaniasis/resources/en/>

Leprosy elimination: <http://www.who.int/lep/resources/en/>

Lymphatic filariasis: http://www.who.int/lymphatic_filariasis/resources/en/

Making pregnancy safer: http://www.who.int/making_pregnancy_safer/documents/en/

Global Malaria Programme: <http://www.who.int/malaria/whomalariapublications.htm#1998>

Roll Back Malaria Partnership: <http://www.rbm.who.int/multimedia/partnershippublications.html>

Managers taking Action based on Knowledge and Effective use of resources to achieve Results:
<http://www.who.int/management/country/en/>

Noncommunicable diseases and mental health: <http://www.who.int/nmh/publications/en/>

Nutrition: <http://www.who.int/nutrition/publications/en/>

Special Programme for Research and Training in Tropical Diseases:
<http://www.who.int/tdr/publications/default.htm>

Tuberculosis: <http://www.who.int/tb/publications/en/>

Dates searched: 9/30–10/2/2008

Search strategy: hand search all titles

3) We collaborated with WHO/CAH to obtain unpublished reports on the Integrated Management of Childhood Illness (IMCI) strategy

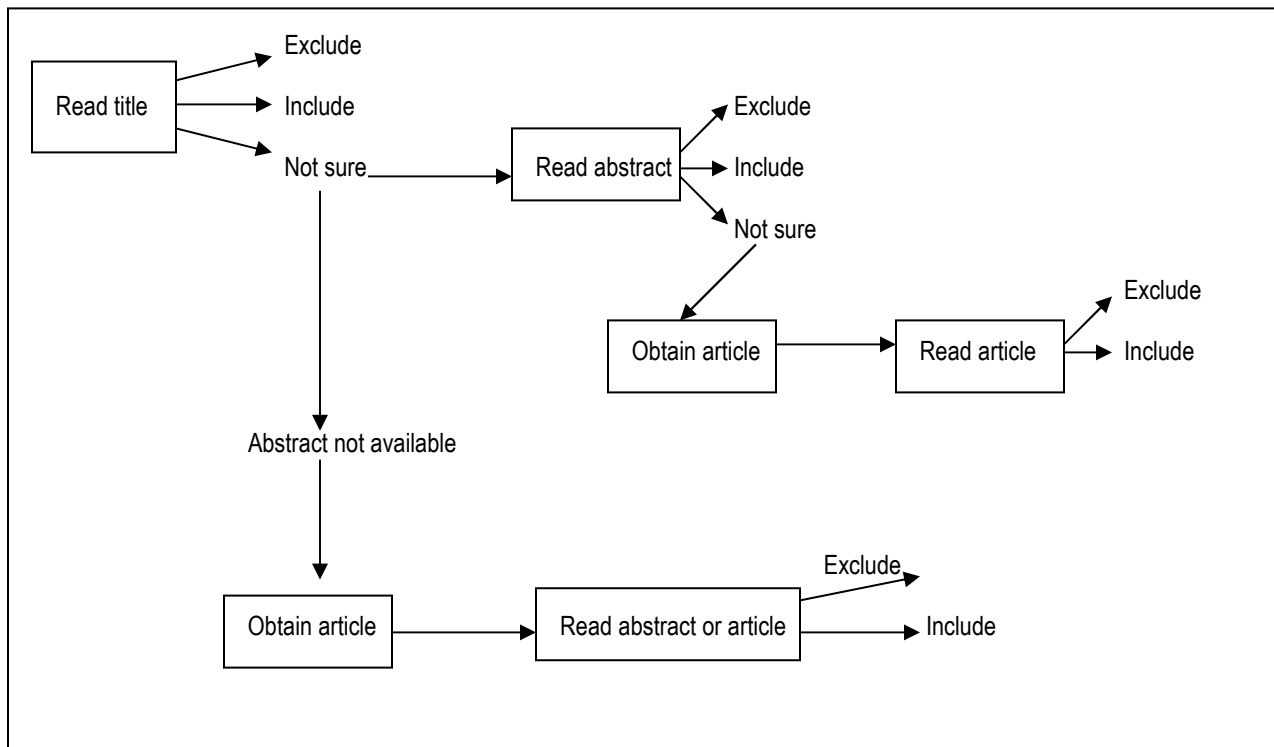
4) We contacted the following colleagues and asked for references and unpublished studies: John Chalker, Robert Chen, Eveline Klinkenberg, Stephen Luby, Elizabeth Molyneux, Joe Naimoli, Dennis Ross-Degnan, Alexander Rowe, Samantha Rowe, Robert Scherpbier, Paul Shekelle, Phyllida Travis, Anita Wagner, Peter Winch. The following authors of studies included in our review also contributed papers: Tania Barham, Patricia Haggerty, Theresa Hatzell Hoke, Therese McGinn, and Paul Winters.

A.4. Screening of search results

Alex, Sam, Earl, Gabriel, Bhavya, Chunying, Shannon, and Tashana screened the search results to identify potentially relevant studies. Concordance testing was conducted against a “gold

standard” list of articles until the screeners were each able to identify at least 80% of “gold standard” articles. Sam, Bhavya, Chunying, Shannon, and Tashana obtained hard copies of potentially relevant studies. Alex, Sam, Earl, Gabriel, Bhavya, Chunying, Shannon, and Tashana reviewed the potentially relevant studies to identify those that met the inclusion criteria of the literature review. Sam double-checked the studies that were identified to assure that they should be included.

Schematic of screening process.



ANNEX 3. Data abstraction form

A. Final version of key documents.

- The data abstraction form: HCPP_Database(abstraction form)v22.doc (Annex 7)
- The handbook with details of how to abstract data: HCPP Database Handbook_v19.doc (Annex 8)
- The description of the data abstraction process: Data_Abstraction_Processv2.doc (Annex 9)
- The code book with names of variables in the database: HCPPDatabase_v6(Access codebook).doc (Annex 10)

B. The following summarizes some key sections of the abstraction form.

- See data abstraction form from Kathy Holloway's database
- Country, year of study, public vs. private setting, funding source of study, indicator of wealth for study area, did intervention have local "support" (e.g., did local HCP and/or community accept the intervention)
- Cost of interventions
- Quality criteria for randomized, controlled trials (Table 1, page 12 of Grimshaw, 2004)
 - Concealment of allocation
 - Protection against contamination
 - Blinded assessment of outcome
 - Reliable outcome measure
 - Outcomes measured at baseline, and no differences were found
 - Follow-up of professionals
 - Follow-up of patients
- Quality criteria for controlled before-and-after studies (Table 2, page 13 of Grimshaw, 2004)
 - Characteristics of study and control reported and similar
 - Protection against contamination
 - Blinded assessment of outcome
 - Reliable outcome measure
 - Outcomes measured at baseline, and no differences were found
 - Follow-up of professionals
 - Follow-up of patients
- Quality criteria for interrupted time series studies (Table 2, page 13 of Grimshaw, 2004)
 - The intervention is independent of other changes
 - The intervention is unlikely to affect data collection
 - Blinded assessment of outcome
 - Reliable outcome measure
 - Completeness of data set
 - Analyzed appropriately
- Quality criteria used to assess the quality of economic evaluations and cost analyses (Box 3, page 44 of Grimshaw, 2004)
 - Research question stated
 - Importance of question stated
 - Viewpoint of analysis stated and defined
 - Rationale for choosing alternative programmes or interventions compared stated

- Alternatives being compared clearly defined
- Form of economic evaluation used stated
- Choice of form of economic evaluation justified in relation to question addressed
- Source(s) of effectiveness estimates stated
- Details of design and results of effectiveness study given
- Details of methods of synthesis of estimates of health effects given
- Primary outcome measure(s) for economic evaluation clearly stated
- Methods to value health states and other benefits stated
- Details of subjects from whom valuations were obtained given
- Productivity changes (if included) reported separately
- Relevance of productivity changes to study question discussed
- Quantities of resources reported separately from their unit costs
- Methods for estimation of quantities and unit costs described
- Currency and price data recorded
- Details of currency and price adjustments for inflation or currency conversion given
- Details of any model used
- Choice of model used and key parameters on which it is based justified
- Time horizon of costs and benefits stated
- Discount rate(s) stated
- Choice of rate(s) justified
- Explanation given if costs and benefits are not discounted
- Details of statistical tests and confidence interval given for stochastic data
- Approach to sensitivity analysis given
- Choice of variable for sensitivity analysis justified
- Ranges of which variables are varied stated
- Relevant alternatives compared
- Incremental analysis reported
- Major outcomes presented in an aggregated as well as a disaggregated form
- Answer to study question given
- Conclusions follow from data reported
- Conclusions accompanied by appropriate caveats

ANNEX 4. Instrument for collecting details from study investigators on contextual factors and other factors that influenced intervention effectiveness

A. Factors that may influence HCP practices

- HCP factors: knowledge (especially of guidelines), skills, motivation and job satisfaction, remuneration, experience (outcomes of past patients), fear of a bad clinical outcome, attitudes towards the guidelines (perceived self-efficacy, or a HCP's confidence that he or she can implement the guidelines; belief that the guidelines are effective), professional values (including attitudes towards corruption), personal goals (including profit motives), perceptions of patient demands and fear that unsatisfied patients will go to another HCP, comprehension of work responsibilities, socio-demographic factors, and the HCP's personal health status
- Patient or client factors: illness severity, patient demands, and patient socio-demographic factors (e.g., age, sex, education, wealth, race, and ethnicity)
- Attributes of the "work": complexity and clarity of guidelines, health topic addressed by guidelines (acute vs. chronic care), and changes in guidelines over time
- Practice environment: practices & attitudes of co-workers, peer pressure, leadership of the director, supervision, presence of quality improvement processes, patient caseload, supplies and equipment, communication (e.g., a mobile phone), facility type (public vs. private, small clinic vs. hospital), location (urban vs. remote village), organization (patient flow, HW deployment), and HCP participation in planning and organizing work
- Professional environment: colleagues, professional associations, and certifying bodies
- Educational environment: formal and informal educational opportunities
- Administrative environment: rules governing HCP behaviors and working conditions, salary levels and regularity of payment, non-financial incentives, job security, leadership of administrative chiefs, presence of quality improvement processes, supervision of supervisors, availability of information, and decentralization (degree to which local health authorities have ownership of the planning and implementation process)
- Employment environment: employment opportunities, which may lead to absenteeism (HCPs leave a public health post to work in a private clinic)
- Commercial environment: promotion of drugs by pharmaceutical companies
- Community environment: how the HCP is perceived by the local community and media
- Socio-cultural environment: traditions and values of society-at-large
- Economic environment: economic conditions of the country and health system
- Political environment: ideologies, political structures, and corruption

B. Other information

- Country, year of study, public vs. private setting, funding source of study, indicator of wealth for study area, did intervention have local "support" (e.g., did local HCP and/or community accept the intervention)
- Cost of intervention

ANNEX 5. Authorship Guidelines: Faculty of Medicine, Harvard University

[available at: http://www.hms.harvard.edu/fa/guide_doc.html, accessed October 10, 2008]

AUTHORSHIP

1. Everyone who is listed as an author should have made a substantial, direct, intellectual contribution to the work. For example (in the case of a research report) they should have contributed to the conception, design, analysis and/or interpretation of data. Honorary or guest authorship is not acceptable. Acquisition of funding and provision of technical services, patients, or materials, while they may be essential to the work, are not in themselves sufficient contributions to justify authorship.
2. Everyone who has made substantial intellectual contributions to the work should be an author. Everyone who has made other substantial contributions should be acknowledged.
3. When research is done by teams whose members are highly specialized, individual's contributions and responsibility may be limited to specific aspects of the work.
4. All authors should participate in writing the manuscript by reviewing drafts and approving the final version.
5. One author should take primary responsibility for the work as a whole even if he or she does not have an in-depth understanding of every part of the work.
6. This primary author should assure that all authors meet basic standards for authorship and should prepare a concise, written description of their contributions to the work, which has been approved by all authors. This record should remain with the sponsoring department.

ORDER OF AUTHORSHIP

Many different ways of determining order of authorship exist across disciplines, research groups, and countries. Examples of authorship policies include descending order of contribution, placing the person who took the lead in writing the manuscript or doing the research first and the most experienced contributor last, and alphabetical or random order. While the significance of a particular order may be understood in a given setting, order of authorship has no generally agreed upon meaning.

As a result, it is not possible to interpret from order of authorship the respective contributions of individual authors. Promotion committees, granting agencies, readers, and others who seek to understand how individual authors have contributed to the work should not read into order of authorship their own meaning, which may not be shared by the authors themselves.

1. The authors should decide the order of authorship together.

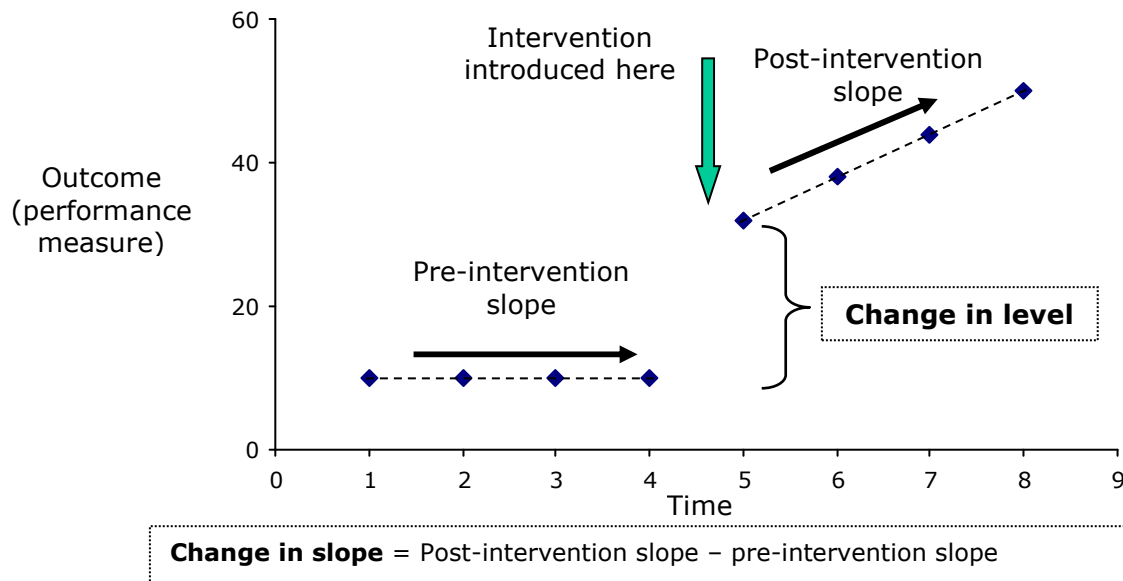
2. Authors should specify in their manuscript a description of the contributions of each author and how they have assigned the order in which they are listed so that readers can interpret their roles correctly.
3. The primary author should prepare a concise, written description of how order of authorship was decided.

IMPLEMENTATION

1. Research teams should discuss authorship issues frankly early in the course of their work together.
2. Disputes over authorship are best settled at the local level by the authors themselves or the laboratory chief. If local efforts fail, the Faculty of Medicine can assist in resolving grievances through its Ombuds Office.
3. Laboratories, departments, educational programs, and other organizations sponsoring scholarly work should post, and also include in their procedure manuals, both this statement and a description of their own customary ways of deciding who should be an author and the order in which they are listed. They should include authorship policies in their orientation of new members.
4. Authorship should be a component of the research ethics course that is required for all research fellows at Harvard Medical School.
5. These policies should be reviewed periodically because both scientific investigation and authorship practices are changing.

ANNEX 6. Analysis of interrupted time series studies

These studies have two potential measures: level changes (which indicate immediate effects of interventions) and slope change (which indicate longer-term effects). See figure below.



If time-point-specific outcome measures are provided, level and slope changes can be calculated with a piecewise regression model. Two data elements are required for “unadjusted” piecewise regression analysis: the mean outcome measure at each time point, and the time since the intervention began when the outcome was measured. (Time = 0 when the intervention began.)

The general mathematical model for “unadjusted” piecewise regression is below.

$$Y = B_0 + B_1(G) + B_2(T) + B_3(T)(G) + e$$

where

Y = outcome (performance measure)

T = time relative to when intervention began

G = 1 if $T \geq 0$, 0 if $T < 0$ (G allows intercept and slope to change at time of intervention)

B_0 = regression coefficient for baseline intercept

B_1 = regression coefficient for change in baseline intercept just after intervention began

B_2 = regression coefficient for pre-intervention slope (change in mean outcome per month during period before intervention)

B_3 = regression coefficient for change in slope after intervention began

e = residual error

$(B_0 + B_1)$ = baseline mean outcome level just after intervention began (when $T = 0$)

$(B_2 + B_3)$ = post-intervention slope (change in mean outcome per month during period after intervention began [when $T \geq 0$])

Regression coefficients can be estimated by using a statistical software package, such as SAS.

ANNEX 7. Data abstraction form

ANNEX 8. Data abstraction handbook

ANNEX 9. The description of the data abstraction process

ANNEX 10. Database code book