EVALUATING PRIMARY HEALTH CARE POLICIES: A STEP TOWARDS IDENTIFYING HUMAN RESOURCE ISSUES IN COMMUNE HEALTH STATIONS IN VIETNAM

John Rule, Duc Anh Ngo, Tran Thi Mai Oanh, Alison Short, Augustine Asante, Graham Roberts & Richard Taylor
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### ACRONYMS

<table>
<thead>
<tr>
<th>Acronym</th>
<th>Full Form</th>
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<tbody>
<tr>
<td>ART</td>
<td>Antiretroviral therapy</td>
</tr>
<tr>
<td>CHS</td>
<td>Commune Health Station or Community Health Service</td>
</tr>
<tr>
<td>HIV</td>
<td>Human immunodeficiency virus</td>
</tr>
<tr>
<td>HRH</td>
<td>Human resources for health</td>
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<tr>
<td>HRH Hub</td>
<td>Human Resources for Health Knowledge Hub</td>
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<tr>
<td>HSPI</td>
<td>Health Strategy and Policy Institute (Vietnam)</td>
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<tr>
<td>PHC</td>
<td>Primary health care</td>
</tr>
<tr>
<td>LMICs</td>
<td>Low- and middle-income countries</td>
</tr>
<tr>
<td>MDG</td>
<td>Millennium Development Goal</td>
</tr>
<tr>
<td>NGO</td>
<td>Non government organisation</td>
</tr>
<tr>
<td>TB</td>
<td>Tuberculosis</td>
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<tr>
<td>WHO</td>
<td>World Health Organization</td>
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**A note about the use of acronyms in this publication**

Acronyms are used in both the singular and the plural, e.g. NGO (singular) and NGOs (plural). Acronyms are also used throughout the references and citations to shorten some organisations with long names.
EXECUTIVE SUMMARY

This literature review is part of a collaborative project between the Health Strategy and Policy Institute (HSPI), based in Hanoi, Vietnam and the Human Resources for Health Knowledge Hub (HRH Hub), University of New South Wales. There is interest in finding a realistic, policy-relevant methodology and approach that can be used to evaluate the performance and effectiveness of the primary health care (PHC) system in Vietnam.

This review documents the ways in which PHC has been evaluated in low- and middle income countries (LMICs), with a focus given to countries that have undergone health sector reforms similar to Vietnam. It will inform a PHC policy analysis currently being conducted by HSPI and assist in conducting operational research to evaluate the effectiveness of Commune Health Stations (the basic unit of the PHC network) in the changing health system of Vietnam.

The review has been a step in the response to the situation in Vietnam where health system reform has had a significant impact on primary health care delivery and the area of human resources for health (HRH). Vietnam's health system faces many challenges in HRH development within the primary health care network, for example, ensuring and maintaining the quality of HRH in rural areas. Other inputs in the primary health care network such as leadership and governance, health financing, health service delivery and health information systems will be of interest but the focus of the collaboration between HSPI and the Human Resources for Health Knowledge Hub, UNSW is specifically on human resources in primary health care.

Studies from LMICs using an explicit methodology or framework for measuring PHC effectiveness were collated. Databases of published articles were searched and a review of grey literature undertaken to identify relevant reports. Relevant studies were then classified according to study design, methods of data collection and evaluation of outcomes. PHC is a complex social intervention and the realist review approach was used with the aim of directing attention to the contexts in which the interventions were applied.

The review found that there is no consistent approach for assessing the effectiveness of PHC interventions in LMICs. Some presented a case study of PHC policy implementation; others were disease specific or related to a specific health response context.

Some studies focused on PHC services using descriptive case studies or cross sectional data to assess user satisfaction with services and patient health outcomes. Other studies used documentary analysis, policy review or quantitative surveys in an attempt to assess effectiveness of PHC programs at the district or sub-national level.

Notably, one study in China, aiming to assess the impact of significant investment in PHC renewal programs, used a results-based logic model with input from local stakeholders, to develop a set of core community health facility indicators. This is a promising approach and could be potentially applicable in other LMIC contexts, including Vietnam.

It would be useful to develop an evidence-based approach which is applicable to LMICs for assessing the effectiveness of PHC programs and interventions; but there is no agreed approach which can be identified in the literature.

This review contributes to the development of an approach by identifying a possible role for operational and implementation research studies, which evaluate policy outcomes and consider important matters such as quality and user views of PHC effectiveness.

This document is focused on the different approaches to evaluating PHC effectiveness that may be of use in Vietnam, the collaborative project between HRH Hub and HSPI anticipates the completion of a further report which will summarise policy development and challenges in the primary health care network at a grassroots level in Vietnam. In relation to human resources for health at the primary health care level further information will be gathered on: the number of health workers; the distribution of doctors, pharmacists and nurses; health care workforce structure at a commune level; and recruitment and retention policies.
BACKGROUND

**Why is evaluation of primary health care important?**

There have been calls for large scale evaluations of PHC and a community focused operational research agenda may best meet this need [Gillam 2008]. Evaluation and research needs to be context specific and rely on the commitment of local actors [Gillam 2008; Kruk et al. 2010].

In the context of progress toward the MDGs,

More detailed analysis and evaluation within and across countries would be invaluable in guiding investments for primary health care. [Rohde et al. 2008, p.950]

Despite PHC being the main subject of the *World Health Report* [2008] and the topic of a special themed issue of the *Lancet* in 2008, where contributors argued that PHC is important in tackling health inequality in every country, there is no literature suggesting the best methods for evaluation of PHC.

A major difficulty has been that there are no control programs with which to compare PHC interventions to other possible interventions in LMICs. Consequently, few systematic reviews of the impact of PHC in developing countries have been undertaken [Rohde et al. 2008; Macinko et al. 2009; Kruk et al. 2010]. Some assessment of primary care initiatives, and the ways in which they contribute to meeting health system goals in LMICs, needs to be developed; despite the fact that formal meta-analysis and comprehensive assessment of PHC interventions may not be possible [Kruk et al 2010].

**Defining primary health care in lower- and middle-income countries**

Prior to the Alma-Ata Declaration of 1978 (Table 1, page 7), PHC had been used as a strategy for expanding health services in LMICs and, with the declaration, it became a central concept in global health [Kruk et al. 2010; Negin et al. 2010]. The World Health Organization (WHO) Report [2000], assessed work in the previous two decades, noting that PHC programs in developing countries could be considered as ‘partial failures’. The core of this criticism was that programs had failed to deliver access to health for all. This may have been because health service delivery had not been able to respond to many problems encountered in developing countries; such problems included lack of access to essential drugs and lack of health care workers. Having no tradition of PHC programs, insufficient structural support across government for implementation and the limited experience of ministries of health were also significant factors limiting PHC implementation [Chabot 1984; Chen 1986; Diallo et al. 1993; Shonubi et al. 2005].

Another interpretation of the WHO Report [2000] findings is that in the two decades following the declaration of Alma-Ata, changes in economic philosophy, promoted strongly by the World Bank and based on market forces and competition, led to the replacement of PHC by ‘Health Sector Reform’.

As a result, a sharp decline in the use of the PHC followed in many countries. People in resource poor settings still had no access to basic services and gaps continued to widen [Hall & Taylor 2003]. MacDonald [2007] has argued that the global inequity in the availability of PHC is because the WHO principles of PHC have been undermined and sidelined.

The WHO Report [2008] was less critical of PHC than the 2000 report, and stated that PHC still did have the potential to deliver progress towards the MDGs. The report stated that features of PHC could improve health outcomes in resource constrained settings.

These features included: person-centredness; comprehensive and integrated care; continuity of care; and participation of patients, families and communities in the provision of health care. The 2008 document also referred to PHC as a set of values and principles and characterised PHC as a ‘movement’, which needed to respond to the pressures of globalisation.
The positioning of PHC in strategy documents, such as the WHO Western Pacific Regional Strategy for Health Systems [2010], suggests that the promise of PHC values can still be realised. In addition, the Western Pacific Regional Strategy document says that there is a ‘consensus’ that countries which have developed PHC programs achieve better health outcomes, and,... do better at achieving the four goals of health systems: improved health and health equity, universal coverage with financial risk protection, responsiveness to the population’s desire for health services, and efficient use of resources. [WHO, 2010, p.3]

PHC has been variously defined as: a strategy which must deal with ‘social, economic and political causes and consequences of poor health’ [MacDonald 2007, p. 9]; a set of values or principles, a policy reform focus or a movement, and, a level of service provision [Rohde et al. 2008; WHO 2010]. PHC is necessarily adapted for changing circumstances and is more broadly viewed than it was 30 years ago [Chan 2008]. Notwithstanding difficulties experienced in implementing PHC, including competition with an increasing number of vertical and disease specific initiatives, PHC is an approach which has the potential to contribute towards the achievement of the MDGs in LMICs [Walley et al. 2008; Rohde et al. 2008; Kruk et al. 2010].

### Previous efforts to evaluate primary health care in lower- and middle-income countries

PHC interventions are by their nature complex and deal simultaneously with several health programs making it difficult to determine the specific contribution of a PHC intervention [Walley et al. 2008]. Kruk and colleagues [2010] found in their review that primary care programs were assisted by other program interventions such as community demand building. These are not specific health sector inputs and this complicates the evaluation of PHC interventions since program inputs may originate in other sectors. Reforms which might be occurring, for example within the social services area, may substantially impact on health outcomes or health access and equity [Macinko 2009 et al.].

It is difficult to measure and assess the level of participation in decisions about health rights and access in countries where the majority of the population may not be engaged in decision making about health resource allocations [Beaglehole & Bonita 1997, p. 222]. It has also been argued that the best method for determining user views and community opinion about the value of PHC is a research area that requires more rigorous data collection, interpretation and development [Schneider & Palmer 2002].

Not only are there complex factors in evaluating the implementation and impact of PHC programs and initiatives, as described above, but there is a further issue of considering how knowledge developed from evaluation is taken up in a policy context. Some authors have argued that the utilisation of new knowledge does not always occur in an orderly and logical sequence [Stone 2002; Ogden et al. 2003; Ogilvie et al. 2005]. They suggest that evaluation methods that are iterative and process-oriented may in fact be more likely to be influential and bring about change.
There have been only a small number of relatively well-designed observational studies, and a lack of rigorous experimental or quasi-experimental studies evaluating the impact of PHC on health outcomes in LMIC [Macinko et al. 2009].

Kruk and colleagues [2010] reviewed 76 papers discussing primary care programs in LMICs but noted that there were many shortcomings in the available evaluation research. They identified that nearly two-thirds of the studies employed a pre-experimental or observational design, almost one-third employed a quasi-experimental design and only four studies employed an experimental design. Their conclusion was that it appeared that primary care initiatives are contributing to increased access to services and equity of access; but because there is no control program with which to compare PHC, it is impossible to rule out alternative explanations for changes that may be observed.

Labonte and Sanders [2010] conducted a synthesis of grey literature and studies which set out to evaluate Comprehensive Primary Health Care in selected countries of Asia. Several key points from their review, which considered 77 studies in 12 countries, are worth noting and apply equally to this current literature review:

• Some of the literature reports use of mix of methods and analysis which is processed in field conditions - hence much of the literature may not follow rigorous scientific, quantitative evidence collection methods.

• There are possibly many PHC initiatives that have not been subject to any formal evaluation that would lead to the publication of information on their success or not, but nevertheless will have valuable lessons to inform the ways in which primary care initiatives take shape in LMICs.

• The diversity of PHC initiatives across and within countries makes it difficult to develop indicators that can be applied in all contexts.

Rationale for this literature review
PHC interventions in LMICs have gone through several stages of implementation including those occurring in parallel with major restructures of the health system. PHC initiatives are currently seen as a way to ensure the realisation of MDGs and there have been calls to “get back to the basics” of PHC programs [Chan 2012]. Thus, in order to determine how best to assess the performance and effectiveness of PHC, the important first step is to understand how PHC has been evaluated and what performance indicators have been used.

There have been attempts, as described earlier, to review the literature on PHC evaluation. However, the complexity of systematically reviewing the health effects of any social intervention [Ogilvie et al. 2005] have made the task difficult. The realist review methodology has been developed to address some of the difficulties in synthesising complex interventions, but a realist review still attempts to provide substantial detail and address questions of context [Pawson et al 2005; Sheppard et al. 2009]. The realist review has therefore been selected as the best method for this literature review.
TABLE 1: CHARACTERISTICS OF PHC FROM ALMA ATA DECLARATION
Adapted from Gillam [2008]

- Evolves from the economic conditions and socio-cultural and political characteristics of a country and its communities.
- Is based on the application of social, biomedical, and health services research and public health experience.
- Tackles the main health problems in the community through preventive, curative, and rehabilitative services as appropriate.
- Includes education on prevailing health problems; promotion of food supply and proper nutrition; an adequate supply of safe water and basic sanitation; maternal and child health care, including family planning; immunisation against the main infectious diseases; prevention and control of locally endemic diseases; appropriate treatment of common diseases and injuries; and provision of essential drugs.
- Involves all related sectors and aspects of national and community development.
- Requires maximum community and individual self-reliance and participation in the planning, organisation, operation, and control of services.
- Develops the ability of communities to participate through education.
- Should be sustained by integrated, functional, and mutually supportive referral systems, leading to better comprehensive health care for all, giving priority to those most in need.
- Relies on health workers, including physicians, nurses, midwives, auxiliaries, and community workers as well as traditional practitioners, trained to work as a team and respond to community’s expressed health needs.
LITERATURE REVIEW METHOD

The following databases were searched for articles written in English: MEDLINE, EMBASE, the Cumulative Index of Nursing and Allied Health Library, the WHO Library, and the Cochrane Library. Two searches by project staff were performed in October 2011 to ensure that all relevant data had been captured at that time. The search was limited to English language texts. Additional key articles, conference publications, and texts were identified through discussion with colleagues and by scanning the reference lists of selected papers.

The review also included an examination of documents which might be considered ‘working papers’, referred to by experts who have had recent field experience establishing evaluative frameworks for assessing PHC performance and interventions.

The realist review method used here, searches for evidence; appraises studies; synthesises evidence and aims to draw conclusions; acknowledging that there will always be limitations on the nature and quality of the information that can be retrieved [Pawson et al. 2005].

One possible approach to the review would have been to search the evaluation literature and data bases for major health service evaluation methods and then examine the extent to which these had been applied to evaluation of PHC in LMICs. This may have assisted with establishing search terms around evaluation methods. However the intention of the literature review was to find evaluation approaches which also addressed questions of context within health systems, not just at a health service delivery level. The data base search terms from Table 2 (page 9) and exclusion parameters as outlined in Table 3 (page 9) were decided upon and found to be sufficient, as initial searches did capture the range of evaluation methods.

Initial database searches using terms from Table 2 yielded 2,150 results. When congruence amongst the search terms was applied there were 422 articles found which met the criteria of providing information on approaches to evaluating PHC in LMICs. Abstracts from the 422 articles were retrieved and were read by a review team in the light of exclusion parameters.

Many of the retrieved abstracts showed that articles concentrated on a specific disease or single health care interventions in the context of PHC programs. These studies were therefore excluded, according to this literature review focus. Studies from developed country contexts were excluded due to the substantially different needs and priorities in LMICs.

Some studies were found which argued for the rapid and ongoing implementation of PHC projects [Chabot 1984; Chen 1986; Ramasoota 1997; Van Balen 2004], however these studies did not have an explicit evaluation methodology and were therefore not included. Some studies functioned as ‘opinion pieces’ about the potential of PHC or limitation of PHC interventions, with no evidence provided that a systematic evaluation of PHC effectiveness or outcomes had been undertaken. Again these studies were excluded according to the exclusion parameters as outlined in Table 3.

From the 422 abstracts 15 articles were selected for further reading and analysis. These selected articles:

- Showed changes over time in evaluation approaches.
- Dealt with different levels of intervention.
- Covered a range of methodologies.
- Were relevant to situations where major reforms had occurred or were underway within country health systems.
TABLE 2: DATA BASE SEARCH TERMS

- Primary health care
- Primary care
- Grass-roots health care
- Commune health centre
- Developing countries
- Underdeveloped countries
- Low- and middle-income countries
- Transitional countries and/or transitional economies
- Evaluation
- Assessment
- Access
- Accessibility
- Quality of care

TABLE 3: EXCLUSION PARAMETERS

- Studies were excluded if they did not contain an explicit methodology or criteria for evaluation and assessment of PHC service delivery or interventions.
- Studies were excluded if they had a specific disease focus or focused only on health outcomes in one particular health service area.
FINDINGS

Overview of findings
There were very few quantitative studies, experimental and quasi experimental studies identified; a point which had been noted by Kruk and colleagues [2010]. Table 4 (below) summarises the level of intervention, methodologies used and the country, or region, of the 15 selected studies. A realist review does not aim to be exhaustive or entirely comprehensive, directs attention towards the different approaches which have been applied in the field and describes the context in which those approaches were applied.

Of the 15 selected articles over half were mixed method studies. The authors argued that the strength of these mixed method studies was that they captured contextual information and data through qualitative methods and combined this with quantitative indicators developed to assess program outcomes, and health impacts. Detailed information about the studies – aims, study design and outcomes can be found in the Appendix.

The selected studies were reviewed again and four different types of studies were identified:

A. Studies focused on directly informing policy development, often providing a narrative account of the development of PHC at a country and policy level.

B. Studies concerned with the question of ‘quality’ and ‘equity’ and monitoring implementation in relation to service utilisation and community satisfaction.

C. Studies which attempted to develop a set of health performance indicators to measure effectiveness of PHC interventions.

D. A study using a results-based logic model, reported in detail and incorporating many of the tools from 1 – 3.

### TABLE 4: EXAMPLE STUDIES OF PHC INITIATIVES AND DIFFERENT EVALUATION METHODOLOGIES

<table>
<thead>
<tr>
<th>Countries or Region</th>
<th>LEVEL OF INTERVENTIONS</th>
<th>METHODOLOGIES USED</th>
</tr>
</thead>
<tbody>
<tr>
<td>National</td>
<td>Sub-national</td>
<td>District or Local</td>
</tr>
<tr>
<td>Quantitative</td>
<td>Qualitative</td>
<td>Mixed Method</td>
</tr>
<tr>
<td>Countries or Region</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

| Nitayrumphong [1990] | •                      | •                   | Thailand |
| Birt [1990]          | •                      | •                   | Vietnam  |
| Diallo et al. [1993] | •                      | •                   | Senegal  |
| Bloom [1998]         | •                      | •                   | China/Vietnam |
| Hill et al. [2000]   | •                      | •                   | Gambia   |
| Moore et al. [2003]  | •                      | •                   | Latin America |
| Duong et al. [2004]  | •                      | •                   | Vietnam  |
| Shonubi et al. [2005]| •                      | •                   | Lesotho  |
| Perks et al. [2006]  | •                      | •                   | Lao      |
| Fritzen [2007]       | •                      | •                   | Vietnam  |
| Hansen et al. [2008] | •                      | •                   | Afghanistan |
| Pongpirul et al. [2009]| •                    | •                   | Thailand  |
| Ditton & Lehane [2009]| •                    | •                   | Thailand  |
| Wong et al. [2010]   | •                      | •                   | China    |
| Negin et al. [2010]  | •                      | •                   | Fiji     |
The next sections provide details of studies under the groupings (A) – (D)

(A) Studies focused on directly informing policy development

The review found studies which provided an account of the economic and political contexts and policies in which the PHC programs are delivered. For example, studies by Fritzen [2007], Pongpiril and colleagues [2009] and Negin and colleagues [2010] appeared useful for their potential to inform policy development. The study by Negin and colleagues [2010] included a document review and semi-structured key informant interviews – which extracted information about the slow decline of the use of PHC facilities in Fiji and subsequently generated recommendations for a range of strategies for revitalising community health centre activities.

The review found eight narrative or descriptive studies of the ways which PHC initiatives have been implemented. Three studies attempted a comparison at district level and two studies took a case study approach assessing policy impacts and outcomes, such as service utilisation, at a local level.

All studies found that the goals of PHC initiatives should continue to be pursued and provided policy focused recommendations to overcome barriers to implementation.

(B) Studies concerned with questions of quality and equity

The Quality Assurance Project was initiated to measure the effectiveness of PHC in developing countries utilising a quality assessment approach [Brown et al. 1990]. Quality assurance methods were intended to help PHC program managers define clinical guidelines and standard operating procedures. The authors suggested that as well as evaluating population coverage or the technological merits of health interventions, health providers might assess the quality of services compared with prescribed standards.

Walker [1983] noted that there were studies which described the outcomes of particular interventions, for example, the supply of nutrition services, but very little work had been carried out in connection with questions of quality, access or equity.

Some of the challenges noted were: staff and managerial fatigue, professional health care providers’ concerns about intrusion by ‘less qualified’ staff, and overcoming providers’ beliefs that quality improvement is impossible in contexts where there are seriously limited resources.

The Quality Assurance Project promoted a method of direct observation of patient/provider encounters as a way of ensuring that quality, as understood by clients, would be assessed, rather than quality as understood by the providers and managers of PHC programs. Some specific strategies were recommended by Brown and colleagues [1990] and these included:

- Reviewing a program’s clinical and managerial standards or norms.
- Assessing patient and community satisfaction with the services provided.
- Reviewing supervisory systems and management activities to see if they are delivering outcomes as intended.
- Assessment of the adequacy of facilities, logistics and equipment for various programs.

During the 1990s, a number of studies in developing and less developed countries engaged with this quality assurance approach [Nicholas et al. 1991; Reerink & Saueborn 1996; Valadez et al. 1996]. Whittaker [1999] reviewed the use of a quality framework using structure, process and outcome variables in developing countries and identified challenges in assessing and implementing quality improvement. Some of the challenges noted were: staff and managerial fatigue, professional health care providers’ concerns about intrusion by ‘less qualified’ staff, and overcoming providers’ beliefs that quality improvement is impossible in contexts where there are seriously limited resources.
In the literature, the quality assurance approach to PHC seems to disappear around the year 2000; this was concurrent with the criticism being made of PHC at that time:

... that it [PHC] did not establish whether it was actually bringing about a quantifiable change in the health of populations in the early 1990s. Its data, analysis and evaluation systems were weak at a time when there was a demand for evidence-based demonstrations in health status. [Hall & Taylor 2003, p. 20]

Elements of the quality assurance approach continue to be included, for example, in the work of Labonte and Sanders [2010]. They propose that as well as measuring PHC effectiveness specifically in terms of health outcomes or health sector achievements; effectiveness can be assessed in terms of PHC processes and principles, including:

- The explicit value of health equity in services.
- The integration of rehabilitative, curative, preventive and health promotion.
- The extent to which there is community involvement and citizen participation.
- The extent to which there is collaboration and involvement with other sectors.
- The extent to which there is action of non-medical determinants of health.
- Whether rights based approaches have been incorporated.

The problem with approaches to PHC research concentrating on quality, equity and participation is that there is no method for agreeing on measurement indicators. For example, how is equity in health services to be measured? Are there any standards by which to measure concepts such as community involvement and citizen participation?

Braveman and Gruskin [2003] view equity as a principle that is difficult to measure in health care provision. Schneider and Palmer [2002] argue that measuring participation or satisfaction with services is a difficult exercise in establishing the truth about people’s opinions and should not be limited to snapshot assessments.

The emphasis on quality assessment in PHC is important but no metrics, or agreed upon measurements or tools, have emerged from the broad concepts; certainly no metrics that can be applied in all circumstances.

(C) Studies which developed performance indicators

Two significant review articles by Kruk and Freedman [2008] and Kruk and colleagues [2010] deal with the issue of assessing health system performance in developing countries and reviewing the contribution of PHC initiatives in LMICs. They note that assessing the contribution of PHC in developing countries is challenging; there are shortcomings in the available evaluation research; and there are very few systematic reviews of the impact of PHC on health in developing countries.

In attempting to develop a framework they identify three categories related to the performance dimension of effectiveness. A portion of the summary table developed by Kruk and Freedman [2008] on the effectiveness dimension is shown on page 14 and those marked in bold were suggested by the authors as sample indicators for developing country contexts. However, even those indicators may not be especially sensitive, or relevant for all country situations.

While these indicators may be helpful to policy makers interested in assessing the effects of different policies, they aim to construct a common framework that could be used across different health systems. The problem with this approach is that health systems are not necessarily comparable across countries [Bananvala & Amery 2006; Walley et al. 2008] so, in fact, a method which allows the development of local context specific indicators would be more valuable.

The next section provides some information on a method used to develop indicators for community health service facilities in urban China. This has significant advantages over the assessment criteria proposed by Labonte and Sanders [2010] and Kruk and colleagues [2010], because the method includes a way of developing relevant indicators informed by a comprehensive analysis of the components of PHC program effectiveness and efficiency and guided by...
the needs defined through extensive consultation with relevant stakeholders.

**D) A study using a results-based logic model**

Recent work to develop a set of PHC performance indicators which can be used to identify Community Health Service (CHS) Facility priorities in urban China is reported by Wong and colleagues [2010]. The article also contains details of the specific steps taken to develop a China CHS Logic Model (adapted from the Canadian PHC results-based logic model).

The authors describe the Logic Model as ‘heuristic’, in the sense that it is being used as a possible method, requiring further investigation, in a situation where it is known that population-based reporting on health outcomes is not perfect. In China there is no established national reporting system for the CHS facilities, although some level of monitoring and reporting focused on examining structural components of the service, such as financing and facilities management, does occur.

Examples of core performance indicators developed for the project are shown on page 15. Sources of data to measure indicators were to include health authority records, CHS facility data and patient surveys. In the China CHS Logic Model, 31 input categories were identified, 64 activity level indicators and 105 output indicators were developed.

When the Results-Based Logic Model and the performance indicators were applied the information compiled was used to effectively influence policy outcomes. In one district the incidence of measles was found to be higher due to immigrant children not being immunised because of lack of human resources and facility space. This information provided the evidence to commence discussions with CHS facility managers about strategies to change this situation. In both districts where the model was piloted, the coordination between CHS and other services was identified as being poor and findings provided evidence of the need for more formal and structured dialogue between facilities.

The methodology required the construction of a provisional China CHS Logic Model with performance framework and relevant indicators through policy analysis and literature review. Secondly, a

This literature review has found that there are few studies systematically evaluating the implementation of PHC programs in LMICs.

A series of stakeholder consultations to review the framework and indicators was held. This included the development of partnerships with the two health districts that were to pilot the framework. Thirdly, a set of indicators to measure different inputs, activities, outputs and outcomes in the Logic Model was designed.

Components of the model included the social, cultural, policy, legislative/regulatory and physical contexts as well as population characteristics. Inputs including fiscal, material and human resources for health featured in the model. PHC products and services including the volume, distribution and type were noted, for example information on health promotion, disease prevention and rehabilitative services. The model also included effectiveness indicators for immediate, intermediate and final outcomes.

This study provides a promising approach because indicators were developed based on intensive consultation with relevant stakeholders, rather than based on the discretion of evaluators, researchers or funding agencies with a set of pre-designed indicators.

**Summary of findings**

This literature review has found that there are few studies systematically evaluating the implementation of PHC programs in LMICs. From the studies examined, the authors of this literature review made a classification, not simply in terms of methodology or study design, but also in terms of the relationship to policy impacts.

One group of studies, largely observational and qualitative in method, attempted to inform policy development by providing detailed information about the historical background of PHC interventions.
Another group of studies attempted to address the questions of quality, access and equity of access to PHC services, but these studies did not develop any informative metrics.

Some studies developed a set of indicators which could be applied and assist in the measurement of performance; however, there may be limitations in terms of transferability from one country context to another.

The most promising approach has been used in China where a results-based logic framework has been developed through consultation and partnership, and a set of performance measurement indicators relevant to the local context were developed and applied. The strength of this approach led to policy action by health service, including recommendations in regard to human resource allocation and coordination of services. The Logic Model needs iterative review, as argued by Wong and colleagues [2011], and the PHC indicators are being modified on an ongoing basis.

### TABLE 5: SUMMARY OF HEALTH PERFORMANCE INDICATORS

*Adapted from [Kruk & Freedman, 2008]*

<table>
<thead>
<tr>
<th>PERFORMANCE DIMENSION</th>
<th>CATEGORY</th>
<th>SAMPLE INDICATORS</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Health status</strong></td>
<td></td>
<td>• Infant mortality*</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Maternal mortality</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Neonatal mortality</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Incidence of low birth weight</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Survival rates for lung cancer</td>
</tr>
<tr>
<td><strong>Effectiveness (outcomes)</strong></td>
<td></td>
<td>• Being treated with respect</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Length of wait for care</td>
</tr>
<tr>
<td><strong>Patient satisfaction</strong></td>
<td></td>
<td>• Administrative simplicity</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Perception of access to specialists</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Adequacy of time spent with physician</td>
</tr>
<tr>
<td><strong>Availability</strong></td>
<td></td>
<td>• Physicians, nurses, hospitals per 1000 population</td>
</tr>
<tr>
<td><strong>Effectiveness (outputs)</strong></td>
<td></td>
<td>• Percentage of population within 10km of a clinic</td>
</tr>
<tr>
<td><strong>Access to care</strong></td>
<td></td>
<td>• Referral rates for women with obstetric complications</td>
</tr>
<tr>
<td><strong>Utilisation</strong></td>
<td></td>
<td>• TB case detection rates</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• ART treatment rates for people with advanced HIV</td>
</tr>
</tbody>
</table>

* Indicators marked in bold were suggested as sample indicators for developing country contexts.
TABLE 6: EXAMPLES OF CORE CHS PERFORMANCE INDICATORS
FROM CHINA CHS LOGIC MODEL

Excerpt from [Wong et al. 2010]

<table>
<thead>
<tr>
<th>CATEGORY (N)</th>
<th>EXAMPLES OF CORE INDICATORS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Inputs (n=31 with three examples shown here)</td>
<td></td>
</tr>
<tr>
<td>Health Human Resources</td>
<td>• % of qualified health care providers (physicians, nurses, nurse practitioners) in CHS</td>
</tr>
<tr>
<td>Material Resources</td>
<td>• % of sub-districts who have at least one community health centre</td>
</tr>
<tr>
<td>Fiscal Resources</td>
<td>• Amount of financial investment for capital infrastructure</td>
</tr>
<tr>
<td>Policy and governance</td>
<td>• % of CHS facilities that can be reimbursed through publicly funded health insurance</td>
</tr>
<tr>
<td>Health care management</td>
<td>• % of PHC providers who completed a two-way referral of patients</td>
</tr>
<tr>
<td>Clinical level</td>
<td>• % of CHS facilities who can offer Chinese traditional medicine</td>
</tr>
<tr>
<td>Activities (n=64 with three examples shown here)</td>
<td></td>
</tr>
<tr>
<td>Type</td>
<td>• % of PHC organisations who currently provide health education, illness prevention</td>
</tr>
<tr>
<td>Volume</td>
<td>• % of patients with hypertension who have health care coordinated by case manager</td>
</tr>
<tr>
<td>Outputs (n=105 with three examples shown here)</td>
<td></td>
</tr>
<tr>
<td>Quality</td>
<td>• % of patients who have a regular doctor</td>
</tr>
<tr>
<td></td>
<td>• % of patients who were referred to other doctors and have information back</td>
</tr>
<tr>
<td></td>
<td>• % of patients who report that they were given enough time to discuss fears and concerns</td>
</tr>
<tr>
<td></td>
<td>• % of patients who rated the quality of CHS good or excellent</td>
</tr>
</tbody>
</table>
CONCLUSION

... any study which attempts to evaluate PHC will need to be context specific and will rely on the commitment of local actors to best determine how it will be conducted.

The aim of this literature review, as part of a collaborative initiative between HSPI and the HRH Knowledge Hub, was to identify the different approaches to evaluating PHC initiatives in LMICs. It is anticipated that information from this review will serve as a methodological platform for future studies in Vietnam, through HSPI. The aim of future studies will be to determine how best to assess the performance and effectiveness of CHSs in Vietnam.

This is congruent with the argument put by Gillam [2008] that any study which attempts to evaluate PHC will need to be context specific and will rely on the commitment of local actors to best determine how it will be conducted. In the context of a renewed interest in the potential of PHC to deliver global health goals, in countries where major health sector reforms and challenges are continuing, the findings of the review are relevant to calls for a more evidence based approach to the assessment of the benefits of PHC initiatives.

This review has found that there is no internationally standardised methodology or approach to PHC research, but that over the last thirty years there has been a range of approaches used. These have been, mostly, observational and descriptive accounts of the success and difficulties of implementing PHC programs. The review found that there had also been significant interest in assessing the ‘quality’ of PHC services; questions of quality, access and equity of access remain important.

The review found only a few examples of studies where metrics and indicators were developed and tested. It is important to note that indicators developed in one country or context will not always be relevant in another context and it may not be possible to develop a set of internationally standardised evaluation tools.

The background literature which described the changes over the last 30 years in implementation of PHC (and indeed interest in implementing PHC initiatives) suggests that any approach used needs to be capable of adaptation and change over time. The review found that the development of a results-based logic model combined with indicators for assessing local situations appeared to be an approach which had the potential for application in LMICs. Such applications need further investigation, since other examples may exist which have not yet been documented through research studies or be available in published literature.

The approach of coming to an agreement about quantifiable indicators is relevant to the project in Vietnam, as HSPI is positioned to begin that discussion with partners and stakeholders. Stakeholder consultations at a national through to local Commune Health Station level will be important to establish what those indicators may be. HSPI is ideally placed to negotiate the components of the broader results-based framework, defining the areas of PHC effectiveness and efficiency as relevant in Vietnam.
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Baum, F (2008), ‘The harder it is to research the more significant it is likely to be: comprehensive primary health care and the challenges it poses for researchers in the 21st century’, General Practice and Primary Health Care Research Conference: Program & Abstracts, Primary Health Care Research and Information Service, Australia. www.phcris.org.au/conference/browse.php?id=6371&spindex=4


instrument in Slovenia and Uzbekistan', *Quality in Primary Care*, vol. 17, issue 3, June, pp. 165-177.


World Health Organisation (1978), The Global Meeting on Future Strategic Directions for Primary Health Care: a framework for future strategic directions (Global Report – Alma Ata Declaration); www.who.int/primary-health-care


## APPENDIX

<table>
<thead>
<tr>
<th>TITLE OF THE STUDY/REPORT</th>
<th>KEY QUESTION/OBJECTIVE OF THE STUDY</th>
<th>DESIGN</th>
<th>COMMENTS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Evolution of primary health care in Thailand: what policies worked? [Nitayrumphong 1990]</td>
<td>To assess the strategies implemented for the development of PHC in Thailand focusing on training of ‘grass-root’ PHC workers.</td>
<td>A descriptive study that set out to analyse changes using a set of agreed upon indicators from 1965 to 1986.</td>
<td>It was assumed or implied that changes in infant mortality rates, male and female life expectancy, malaria morbidity, nutritional status and diseases which were preventable through immunisation was attributable to the National Health Development plan. Whilst community involvement, collaboration with NGOs, integration of health program and inter-sectoral collaboration at the operational level were noted, the link between these and changes in indicators was not empirically tested.</td>
</tr>
<tr>
<td>Establishment of primary health care in Vietnam [Birt 1990]</td>
<td>The study aimed to describe examples of primary health care development.</td>
<td>Descriptive case study drawing on basic demographic and epidemiological data.</td>
<td>The study found that emerging models of PHC in Ho Chi Minh city and Dong Nai Province were meeting health care priorities established by the Ministry of Health.</td>
</tr>
<tr>
<td>Primary health care: from aspiration to achievement [Diallo et al. 1993]</td>
<td>The study aimed to review Senegal’s response to initiatives aimed at strengthening PHC.</td>
<td>Descriptive study based on some quantitative data from an operational level evaluation of five district health centres.</td>
<td>The study identified barriers which led to the PHC strategy being discredited in the eyes of medical staff in the public sector – due to drug distribution and supply problems, demoralization of personnel, development of clandestine private practice. The authors noted the difficulty in selecting a methodology.</td>
</tr>
<tr>
<td>Primary health care meets the market in China and Vietnam [Bloom 1998]</td>
<td>The paper aimed to outline the changes which had taken place in the health sectors of China and Vietnam during the transition to a market economy and describe how that transition influenced health sector performance.</td>
<td>Narrative account of impact on infrastructure development, health management system, community mobilisation, health finance system and planning using principles of PHC.</td>
<td>In both countries it was identified that child and infant mortality had declined and life expectancy had continued to grow, no evidence was available in regards to sub-national trends. Private health services were providing greater choice for some, but limiting access for those who could not afford user pays fees being introduced. Factors which contributed to health improvements were not clearly isolated in this report.</td>
</tr>
<tr>
<td>TITLE OF THE STUDY/REPORT</td>
<td>KEY QUESTION/OBJECTIVE OF THE STUDY</td>
<td>DESIGN</td>
<td>COMMENTS</td>
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<td>------------------------------------------------------------------------------------------</td>
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<tr>
<td>Decline of mortality in children in rural Gambia: the influence of village-level primary health care [Hill et al. 2000]</td>
<td>The study aimed to assess the effectiveness of PHC programs.</td>
<td>Longitudinal comparative study.</td>
<td>Data on infant and child mortality was collected over a 15 year period in 40 villages and comparisons were drawn between those with and without PHC. The study found that supervision of the PHC system weakened after 1994 and mortality rates rose significantly.</td>
</tr>
<tr>
<td>Determinants of health status and the influence of primary care services in Latin America 1990-98 [Moore et al. 2003]</td>
<td>The study aimed to examine the factors, including the impact of the provision of PHC services, which were associated with under-five mortality rates in 22 countries of Latin America and the Caribbean during the 1990s.</td>
<td>Multivariate analysis drawing on aggregated data from World Bank and the United Nations Childrens Fund.</td>
<td>Missing data points from countries meant that many variables had dropped from the analysis. Physicians per 1000 people were significantly associated with lower under-five mortality rates but so were three non-health care indicators. Female literacy rates were found to be highly correlated, along with two other non-health factors. The study design could not show that observed improvements of under-five mortality rates were due to primary health care interventions.</td>
</tr>
<tr>
<td>Utilization of delivery services at the primary health care level in rural Vietnam [Duong et al. 2004]</td>
<td>The study investigated factors influencing the utilisation of delivery services at the primary health care level.</td>
<td>Quantitative survey, focus group discussions and in-depth interviews.</td>
<td>The study identified that costs of services was an important factor; but in some districts social, cultural and religious factors and the national two-child policy were barriers to service utilisation. The method did not specifically address effectiveness of Commune Health Centre operations.</td>
</tr>
<tr>
<td>“Health for All” in a Least-Developed Country [Shonubi et al. 2005]</td>
<td>The article describes and provides an evaluation of the health care system in Lesotho based on primary health care principles.</td>
<td>A narrative description of the structure of the health system is provided. This included a system of health centres and clinics, each serving approx 10,000 people accessible to people within 1-2 hours walk.</td>
<td>The report concluded that education was the most effective means of providing a sustainable solution to health problems in Lesotho and perhaps other low-income countries. A very simple tool called a visual analog scale was used to assess the effectiveness of the system during visits to various health institutions by the authors. Features of the system, which included patient retained medical records and ensuring easy access to facilities regardless of socioeconomic status, residence or nature of the illness, were highly rated.</td>
</tr>
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<td>TITLE OF THE STUDY/REPORT</td>
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<td>COMMENTS</td>
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<tr>
<td>Legacies of primary health care in an age of health sector reform: Vietnam’s commune clinics in transition [Fritzen 2007]</td>
<td>The paper aimed to evaluate the strategy and outcomes of the attempt in Vietnam to revitalise the grassroots infrastructure of PHC against the backdrop of the country’s economic transition.</td>
<td>A descriptive account of interrelated developments of marketisation and decentralisation was linked to data from the World Bank and Ministry of Health. A study of 88 clinics – evaluating project outputs, the strength of other PHC components and clinic coverage – was conducted.</td>
<td>Having some empirical data to inform the analysis provided for a report which explored the theoretical coverage of the rural population access to basic health service through the network of public clinics and usefully identified disruptions suffered because of the transition to a market economy. The study also identified that equitable access to basic health services for poorest segments of the population remains problematic.</td>
</tr>
<tr>
<td>Determinants of primary care service quality in Afghanistan [Hansen et al. 2008]</td>
<td>The study aimed to describe the level of quality of care provided by agencies implementing basic health programs and identify factors associated with variations in quality.</td>
<td>Cross sectional survey, without control, of a random sample of 25 health facilities. The study included health workers, patients and caretakers interviews.</td>
<td>Data was drawn from 1553 health worker interviews and 5719 observations. A ‘scale of quality care’ was developed using measure from clinical consultations e.g. communication and time spent with patients. This demonstrated significant variations such as high performance of NGO facilities, significant regional variations, and the influence of good clinical supervision.</td>
</tr>
<tr>
<td>Policy characteristics facilitating primary health care in Thailand: A pilot study in transitional country [Pongpirul et al. 2009]</td>
<td>The pilot study aimed to assess important primary health care policy characteristics, such as equitable distribution of resources across programs in a context where there are limited databases.</td>
<td>Narrative synthesis from expert interviews and document review. Questionnaire survey of 5 senior policymakers, 5 academicians and 77 primary care practitioners.</td>
<td>The study provided useful information about regional variations in PHC delivery and recommended a wider study be implemented.</td>
</tr>
<tr>
<td>TITLE OF THE STUDY/REPORT</td>
<td>KEY QUESTION/OBJECTIVE OF THE STUDY</td>
<td>DESIGN</td>
<td>COMMENTS</td>
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<tr>
<td>Towards realising primary health care for the rural poor in Thailand: Health policy in action [Ditton &amp; Lehane, 2009]</td>
<td>The aim was to evaluate a Primary Care Unit in Thailand.</td>
<td>Case study drawing data from observation, review of patient lists and records, document review and key personnel interviews.</td>
<td>Used Starfield’s conceptual framework of evaluating; first contact care, longitudinality, comprehensiveness and coordination. Policy and practice implications were drawn from the study. Results could not be generalised and study lacked external validity.</td>
</tr>
<tr>
<td>The evolution of primary health care in Fiji: Past, present and future [Negin et al. 2010]</td>
<td>The study aimed to understand the evolution of PHC in Fiji; how policies had changed over time and the role of various actors in influencing policy development.</td>
<td>The study used document review, semi-structured key informant interviews and Walt and Gilson’s health policy triangle to analyse and collate information.</td>
<td>Empirical data gathered through historical documents and literature search, as well as 14 interviews, provided data on the slow decline of PHC and use of PHC facilities. A range of factors from the end of WHO funding, domestic instability and cultural changes in Fijian villages were identified as impacting on PHC provision. A range of strategies for revitalising community health centre activities in a way that focused on ‘quality’ of health services were recommended.</td>
</tr>
<tr>
<td>Developing a performance measurement framework and indicators for community health service facilities in urban China [Wong et al. 2010]</td>
<td>The study aimed to develop a China results based Logic Model and a set of relevant PHC indicators to measure Community Health Station priorities.</td>
<td>A framework and indicators were developed with content validation ensured through policy analysis, critical review of literature, and stakeholder consultation.</td>
<td>The framework and indicators to measure inputs, activities, outputs and outcomes were applied in two districts to generate data about operations. Data was then shared with Community Health Station managers for consideration of changes in policy and practice.</td>
</tr>
</tbody>
</table>
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