



What are the advantages and disadvantages of restructuring a health care system to be more focused on primary care services?

January 2004

## ABSTRACT

This is a Health Evidence Network (HEN) synthesis report on the advantages and disadvantages of restructuring a health care system to be more focused on primary care services.

The available evidence demonstrates some advantages for health systems that rely relatively more on primary health care and general practice in comparison with systems more based on specialist care in terms of better population health outcomes, improved equity, access and continuity and lower cost.

This report is HEN's response to a question from a decision-maker. It provides a synthesis of the best available evidence, including a summary of the main findings and policy options related to the issue.

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## **Summary**

### **The issue**

Governments are searching for ways to improve the equity, efficiency, effectiveness, and responsiveness of their health systems. In recent years there has been an acceptance of the important role of primary health care in helping to achieve these aims. However, there have been no systematic reviews on primary care versus specialist-oriented systems, nor has the case for primary health care been firmly established.

This review presents the evidence for the advantages and disadvantages of restructuring a health care system on primary care services. It is based on a rapid but systematic review of key sources of published literature. The evaluation of evidence is complex for a number of reasons, including differing definitions of services, staff and the boundaries between primary and secondary care, changing organizational structures, and an increasing reliance on primary care teams. No studies were found that specifically addressed the advantages of health care systems relying on specialists.

### **Findings**

International studies show that the strength of a country's primary care system is associated with improved population health outcomes for all-cause mortality, all-cause premature mortality, and cause-specific premature mortality from major respiratory and cardiovascular diseases. This relationship is significant after controlling for determinants of population health at the macro-level (GDP per capita, total physicians per one thousand population, percentage of elderly) and micro-level (average number of ambulatory care visits, per capita income, alcohol and tobacco consumption). Furthermore, increased availability of primary health care is associated with higher patient satisfaction and reduced aggregate health care spending. Studies from developed countries demonstrate that an orientation towards a specialist-based system enforces inequity in access. Health systems in low income countries with a strong primary care orientation tend to be more pro-poor, equitable and accessible. At the operational level, the majority of studies comparing services that could be delivered as either primary health care or specialist services show that using primary care physicians reduces costs, and increases patient satisfaction with no adverse effects on quality of care or patient outcomes. The majority of studies analysing substitution of some services from secondary to primary care showed some such shifts to be more cost-effective. The expansion of primary health care services may not always reduce costs because it ends up identifying previously unmet needs, improves access, and tends to expand service utilization.

### **Policy considerations**

The available evidence demonstrates some advantages for health systems that rely relatively more on primary health care and general practice in comparison with systems more based on specialist care in terms of better population health outcomes, improved equity, access and continuity and lower cost. However, a stronger evidence base is needed to make the evidence available universally applicable.

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## **Introduction**

Globally, governments are searching for ways to improve equity, efficiency, effectiveness, and responsiveness of their health systems. The WHO World Health Report identifies many countries that fall short of their performance potential (1). There is no agreement on optimum structures, content, and ways to deliver cost-effective services to achieve health gain for the population.

In recent years there has been an acceptance of the role of primary health care (PHC) in providing cost effective health care (2, 3, 4). However, the advantages and disadvantages of health care systems that rely on medical specialists versus the systems that rely more on general practitioners and primary health care have not been systematically reviewed or a case for primary health care firmly established. This paper assesses the empirical evidence for them through a review of studies published in the period 1980-2003. A discussion of the generalizability of findings follows. It also explores definitional issues related to primary health care.

In this review, the terms primary health care, primary care and general practice are used interchangeably. Generally, primary care and general practice refer to primary medical care, which in the WHO definition of primary health care form only a part of a greater set of aims and activities, as described in the next section.

This study was inherently complex due to a number of factors.

- There are varied definitions of the scope and role of general practice, primary care, primary health care and specialists. For instance, a primary care team can vary from a community nurse, a feldsher or rural general practitioner to a multidisciplinary team of up to 30, comprising specialist nurses, managers, support staff, family medicine and other primary care specialists.
- The boundaries of primary and secondary care differ among and within countries, making comparison and generalizability of studies particularly challenging.
- Organizational structures in many countries are changing, giving way to integrated institutions comprising primary and secondary care.
- In many health systems, services traditionally provided by secondary care specialists are now the responsibility of the primary care team, making a definite distinction between secondary and primary care specialists difficult.

## **Sources for this review**

The review is based on a detailed search using key sources of literature including: PubMed; Medline; EMBASE; Social Science Citation Index (BIDSS); National Centre for Reviews and Dissemination (UK); DARE; CRD Reports; NHS Economic Evaluation Database; Agency for Health Care Policy and Research; SchARR; World Bank Registers, World Health Organization and the Cochrane Library.

The search was focused to identify evidence in the following areas:

- international comparisons of primary care and specialist led care and their effect on equity of access, health outcomes, and patient satisfaction
- the relationship between access to primary care and health outcomes, patient satisfaction and cost
- continuity of care and health outcomes
- substitution of primary care for hospital care
- shared primary care and secondary care being as good as secondary (specialist) care only
- comparison of the effectiveness of GPs (primary care physicians) and hospital specialists.

The review follows validated methods for critical appraisal (5, 6), and includes studies with the following designs: systematic reviews, randomized controlled trials (RCTs), quasi-experiments, evaluative studies and case control studies. Leading editorials focusing on the concept and trends are also included. Language limitations of the author meant that only publications in English and Spanish were reviewed. Studies in other languages, descriptive studies, and case studies with no evaluation criteria or clear purpose were excluded. In the search, 1300 documents were retrieved. Of these, 256 were judged to be relevant for the study and 111 papers were considered to be of sufficient quality for detailed review and inclusion in the assessment.

While the author attempted to systematically weigh the evidence, it should be made clear that due to time constraints, this is not a formal systematic review.

## **Defining primary and specialist care**

Specialist care is defined as those services delivered by narrow specialists, usually in hospital or in an ambulatory setting and those not delivered in primary care. Defining primary care is fraught with difficulties. An attempt to do so in the United States yielded no fewer than 92 definitions (7). Similarly, in the European region, the definition of PHC varies by country (8, 9). Primary care definitions can be considered in terms of concept, level, content of services, process and team membership. A detailed discussion on this is given in Annex 1.

## **Findings from research and other evidence**

### **Population health and aggregate health expenditure**

A recent study assessing the contribution of primary care systems to a variety of health outcomes in 18 wealthy OECD countries over three decades revealed that the strength of a country's primary care system was negatively associated with population health outcomes such as all-cause mortality, all-cause premature mortality, and cause-specific premature mortality from major respiratory and cardiovascular diseases (10). Stronger primary care meant better health outcomes. This relationship was significant even while controlling for determinants of population health at macro-level (GDP per capita, total physicians per one thousand population, percent of elderly) and micro-level (average number of ambulatory care visits, per capita income, alcohol and tobacco consumption). Furthermore, PHC characteristics such as geographic regulation, longitudinality, coordination, and community orientation were associated with improved population health. This reinforces findings of an earlier international comparison involving 11 developed countries which demonstrated that a higher primary care orientation of a health system was more likely to produce better population health outcomes, at lower cost, and with greater user satisfaction (11).

In a comparative study in the United States, Shi demonstrated that availability of primary care physicians correlated positively to favourable health outcomes, including age-adjusted and standardized overall mortality, mortality associated with cancer and heart disease, neonatal mortality, and life expectancy (12), whereas absence of a primary care source was found to be the most important factor in determining poor health (13). In contrast, health systems dominated by specialists, such as that of the United States, have higher total health care costs and reduced access to health care by the vulnerable populations (14, 15, 16). The high cost is attributed to proportionately low numbers of primary care physicians and consequent impairment of the gate-keeping function (17, 18). Areas of the United States with lower rates of primary care physicians per population have higher Medicare (federal health insurance mainly for people 65 years of age or older) expenditures (19).

Primary health care, when compared with secondary care, is a lower cost environment as services delivered by specialists are higher cost due to a tendency to use expensive technology and orientation to curative rather than preventive medicine (18).

In developing countries, systematic international data supporting a strong correlation between increased PHC spending or access and improved health outcomes is not strong (20), due to the inherent difficulty of disaggregating socio-economic and health system interventions.

## **Equity and access**

In low-income countries, evidence shows that expenditure on PHC is more pro-poor than aggregate expenditure that includes hospitals, and has a desirable distributive impact benefiting the poorer segment of the population proportionately more than the richer segment (20). Studies from developed countries demonstrate that an orientation towards a specialist-based system enforces inequity in access (21). In contrast, there is general agreement that expenditure on primary care improves equity (22). Greater investment in primary care increases access to care with associated lower mortality and morbidity (23). Conversely, a reduction in access to PHC results in a worsening health status (24, 25).

## **Quality and efficiency of care**

There is a paucity of rigorous studies evaluating the quality and cost effectiveness of care delivered in the primary care setting or by general practitioners (26). A systematic review of the quality of clinical care in general practice concluded: "The published research in the field presents an incomplete picture of the quality of clinical care in terms of its methodological rigour and comprehensiveness" and that "Judgements about quality of care tend to be based on fragmented information" (27).

A substantial number of well-designed studies exist comparing care delivered by general practitioners to that by specialists. These show no significant difference in quality of care and health outcome for care delivered by general practitioners even when substituted for secondary care specialists (28).

Primary care physicians are more likely than specialists to provide continuity and comprehensive care resulting in improved health outcomes (29). Improved access to primary care physicians and their gate-keeping function have added benefits such as less hospitalization (30, 31, 32), less utilization of specialist and emergency centres (33, 34), and less chance of being subjected to inappropriate health interventions (35). In contrast, when direct access to specialists is possible without a controlling mechanism by primary care physicians, the quality of care, as measured by appropriateness, worsens and health care costs increase (36). Furthermore, evidence from a systematic review suggests that broadening access to primary care can reduce demand for expensive, specialist-led hospital care (37).

Not all studies support the evidence that the gate-keeping function of primary care improves patterns of secondary care and hospital use (38). Some studies in selected areas of care at the primary-secondary interface show that shifting care previously undertaken by specialists does not necessarily

result in reduced demand for specialist or secondary care services (39, 40, 41, 42), and some confirm the advantages of specialists for hospital inpatient care (43, 44, 45, 46). This advantage is not observed for outpatient care (47, 48, 49).

The empirical evidence of what care can be readily shifted from specialist-led secondary care to PHC is limited (50). Some studies analysing substitution of selected services (for instance for hypertension and asthma) from secondary to primary care showed this shift to be more cost-effective, although others found contrasting or ambiguous results. For instance, a comparative analysis of quality and cost of depression treatment by primary care physicians and specialists shows the latter to be more effective but more costly (51).

## **Cost effectiveness**

Implicit in the literature on primary care is that hospital care is inappropriate as a first resort for and therefore primary care is necessarily a 'good' substitute. However, this assumption must be supported by empirical evidence. In low-income settings, the cost effectiveness of PHC compared to other health programmes is confirmed by a review (52). This reinforces World Bank findings that selected primary care activities, such as infant and child health, nutrition programmes, immunization and oral hydration, appeared as "good buys" compared to hospital care (53), and that interventions deliverable in primary care facilities could avert a large proportion of deaths (54). The Bamako Initiative in Benin and Guinea demonstrates that even in resource-poor settings it is possible to implement and sustain basic PHC services (55).

Shifting care across specialist-general practice and secondary-primary care boundaries is possible and has been shown to be cost effective without an adverse affect on outcomes. For instance, general practitioner-led hospitals in Norway provided health care at lower cost compared to alternative modes of care, due to averted hospital costs (56). United Kingdom studies confirm that GP hospitals save costs by reducing referrals and admissions to higher-cost general hospitals staffed by specialists (57, 58, 59). Care delivered by general practitioners, compared to hospital specialists, in hospital-based accident and emergency departments was shown to be more cost effective with lower use of diagnostic investigations, lower referral rates to secondary services, lower prescription levels, and no significant difference in patient satisfaction or health outcomes (60, 61, 62).

## **Patient satisfaction**

A comparison of 10 Western countries suggested higher user satisfaction levels for health systems based on a strong primary care system if the influence of expenses on the health care was controlled. The United Kingdom was an exception despite having a health system with a strong primary care orientation and relatively low total health expenditure (63).

The Euro barometer survey of citizens of 15 European Union Member States shows that Denmark, which has a very strong primary care system with 24-hour, 7-day access to primary care, has the highest public satisfaction with health care (64), attributed to the value placed on the accessibility of primary care delivered by general practitioners (65). However, patient satisfaction with primary care and general practitioners is strongly influenced by the mode of care delivery, physician style, availability of out-of-hours care, a named physician, continuity of care and provision of routine screening (66, 67, 68, 69).

In the US system, gate-keeping exercised by primary care physicians preventing direct patient access to specialist care led to patient dissatisfaction (70).

## **Generalizability**

Studies in the review are predominantly from the United States European countries such as the United Kingdom, Netherlands and Nordic countries and low-income countries in Africa. Research from transition countries, middle-income countries and Latin America is lacking.

The review revealed a paucity of high quality studies comparing advantages and disadvantages of PHC and specialist care in Europe; comparative studies tended to be from the United States. There were few cost-effectiveness analyses comprehensively evaluating services provided in PHC. These were RCTs examining segments of particular interventions rather than comprehensive or integrated management of the problem in question.

The extent to which the findings can be readily generalized to support policy recommendations is open to debate, as the available evidence comes from a number of different countries, with a variety of different health system structures, organization, financing and delivery modes. It is difficult to control for these factors. Changes observed may be attributable to factors such as health system financing or physician behaviour rather than where and by whom the care is delivered. Disaggregating the impact of these factors from the domain, health professional, or delivery mode is difficult.

Transferring evidence or care models from one setting to another without a clear understanding of the context and health system dynamics can produce unintended consequences. Caution should be exercised before embarking on reforms that favour primary care-based systems and where shifts across boundaries are concerned without clearly defining policy objectives and identifying the evidence base to support them. Funding agencies and the research community need to be encouraged to undertake rigorous national and transnational comparative studies to improve the knowledge and evidence bases to inform policy decisions.

## **Discussion**

The success of health systems in tapping the existing potential or making appropriate structural changes to enable shifts from expensive to more cost-effective alternative sub-sectors such as PHC is by no means universal. The extent of importance attached to primary care varies from country to country. Despite the evidence for primary care, resource allocation in most countries still favours hospitals and specialist care. This is partly due to perceptions about what PHC is, what it has to offer (71), and its development as a control function to reduce costs or access to secondary care (72, 73), rather than its positive contribution to health gain. This explains the paradox of the attractiveness of primary care on empirical grounds and its lack of appeal to national policy-makers and healthcare professionals, who see it as a low-grade activity with little effect on mortality and serious morbidity and a predominant role in triage of access to hospitals.

This inefficiency in resource allocation has implications for equity and efficiency. It may explain why increased total public spending for health has not improved equity of access and outcomes proportionately and has had less impact on average health status than expected (74, 75).

Given the right incentives, in any health system, there is the real opportunity to expand provision of medical services in a primary care setting (76). The lack of identity poses problems for the proponents and funding agencies who believe that primary care is necessary (77). Policy-makers need to be made aware of the concept of primary care and what it has to offer. This will require investment for advocacy and marketing activities to communicate the benefits of primary care to health professionals, policy-makers and the public.

The role of primary care should not be defined in isolation but in relation to the constituents of the health system. Primary and secondary care, generalist and specialist, all have important roles in the

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health system. They are not mutually exclusive, but rather necessary ingredients for any system. However, technological advances, improved education and training, broadening of the primary care team roles and membership, different demand patterns due to health transition, and changing social attitudes mean primary care has a greater role to play than before, and resource allocation needs to flow in its favour.

A new approach is necessary: one in which primary care is seen in a positive light, with a proven contribution to health gain beyond control or cost-containment functions. The approach should be based on a comprehensive and integrated model recommended by WHO (78). The new approach should combine new universalism with economic realism with the objective of providing coverage for all and not coverage for everything. However, the scope, content, and expansion of this model should be guided and supported by empirical studies (79).

## **Conclusions**

Compared to secondary and tertiary health care sectors, primary health care seems to be a “new” setting for research, although one can observe an increase in complexity and quality of studies in the period surveyed. There are few transnational or pre and post-intervention studies. This is surprising given the ongoing reforms in the European region, and particularly the transition countries, which aim to introduce or develop primary care.

Despite the caveats concerning generalizability, the available evidence confirms improved population health outcomes and equity, more appropriate utilization of services, user satisfaction and lower costs in health systems with a strong primary care orientation. Findings support policies that encourage a shift of services away from specialist care to PHC, as the substitution does not adversely affect quality but lowers cost. Studies indicate the limits of substitution and there remain questions to be addressed, such as the configuration of primary care structures and teams, content of services, and modes of delivery.

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## **Annex 1. Defining primary and specialist care**

### **The concept of primary care**

In the Alma Ata declaration, the World Health Organization defined primary health care as “essential health care based on practical, scientifically sound and socially acceptable methods and technology, made universally available to individuals and families in the community through their full participation and at a cost that the community and the country can afford to maintain at every stage of their development in the spirit of self-reliance and self-determination.” (80). Although many transition countries in the European Region have yet to attain a primary care level defined in the Alma Ata declaration (81), industrialized countries in the Region have surpassed it. For these countries primary health care can be viewed as “a strategy to integrate all aspects of health services” (82).

Primary care is seen as an “integral, permanent, and pervasive part of the formal health care system in all countries” or as the “means by which the two goals of health services system - optimization of health and equity in distributing resources - are balanced” (83). It addresses the most common problems in the community by providing preventive, curative, and rehabilitative services to maximize health and well-being. It integrates care when more than one health problem exists, deals with the context in which illness exists and influences people’s responses to their health problems. It is care that organizes and rationalizes the deployment of basic and specialized resources directed at promoting, maintaining, and improving health (11).

Vuori describes the constituent components of primary health care as a set of activities, a level of care, a strategy for organizing health services, and a philosophy that should permeate the entire health system (84). His first component echoes the Alma-Ata definition and identifies its eight basic elements. Primary care as a level in the health care system is the domain where people first contact the health care system and where 90% of their health problems are dealt with. Primary care as a strategy envelopes the notion of accessible care, relevant to the needs of the population, functionally integrated, based on community participation, cost-effective and characterized by collaboration between sectors of society. Primary care as a philosophy underpins equitable delivery of care with a particular reference to intersectoral collaboration.

### **Primary care defined as a level of care**

In 1920, the Dawson Report distinguished three major levels of health services in the UK: primary health centres, secondary hospitals and teaching hospitals (85). Although this structure prevails in most countries, the content and delivery in primary and secondary care have changed.

### **Primary care in terms of content**

In many health systems, particularly in developing and transition country contexts, PHC is defined as consisting of the basic or essential set of health interventions enshrined in the Alma-Ata Declaration (80). This leads to equating primary care with selective vertical programmes (86, 87) or an essential package of services used partly as a financing tool but also to meet the disease burden of predominantly communicable disease, perinatal and maternal deaths (88). The selective primary care approach has been widely criticized for lacking an empirical foundation (89), as a reinvention of the traditional technically oriented vertical programmes (90), being based on value judgements (91, 92), adversely impacting the health developmental process (93), and even for being counterproductive (94). Some have even questioned the validity of cost-effectiveness technology as the basis for justifying selective PHC (95).

An alternative to selective PHC is the comprehensive PHC system prevalent in many developed countries, comprising a wide range of health education, promotion, prevention, curative and rehabilitative, and terminal activities. Some argue that comprehensive PHC is also affordable and deliverable in developing countries (96).

In the European Region, the set of activities devolved to primary care is growing rapidly. Much of specialist outpatient care is shifting to primary care via the outreach clinics encouraged by shared-care schemes (97). Even inpatient services traditionally provided in hospitals by the specialist are shifting to primary care through hospital-care-at-home schemes (98). General practitioners are now expected to provide emergency care for conditions that were traditionally provided in hospital accident and emergency departments (99).

The primary care-secondary care interface is dynamic and changing, as are the boundaries between general practitioners and primary care physicians or hospital specialists. There is considerable overlapping of roles of general practitioners giving specialized care and specialists providing general practice services, the so called "hidden primary care" (100, 101), further complicating the comparability of research findings in different countries and contexts.

### Primary care as a key process

Primary care is often equated with a gate-keeping role (102). However, it plays a more fundamental role than just gate-keeping; it is a key process in the health system (103). It is the first contact, front-line, ongoing, comprehensive and co-ordinated care (104). First contact care is accessible at the time of need; ongoing care focuses on the long-term health of a person not on the short term duration of the disease; comprehensive care is a range of services appropriate to the common problems in the population available at the primary care level, and; co-ordination is a role by which primary care acts to co-ordinate other specialist services that the patient may need.

### Primary care defined in terms of team membership

Primary care teams can vary from community nurses, feldshers, or rural general practitioners to multidisciplinary teams of up to 30, comprising specialist nurses, managers, support staff, family medicine and other primary care specialists.

The Royal College of General Practitioners in the United Kingdom describes a primary care professional as "any health professional whose professional qualification is in health care, whose professional qualification is recognized by a statutory registration council approved by Parliament, who sees clients/patients directly without any referral from a health professional, or who works within a primary medical or nursing care organization that offers patients open access" (105).

In the industrialized countries of the European region the core primary care team often consists of a general practitioner, a community nurse, practice nurse, social worker, therapist and administrative staff (106). Although in countries where primary care is well developed, team membership exceeding 20 is not unusual (11) (Table 1).

**Table 1: Membership of the primary care team**

Medical	Paramedical	Administrative	Therapists	Social
General practitioner	Community nurse	Practice manager	Physiotherapist	Social worker
Dentist	Practice nurse	Receptionist	Chiropodist	Community psychiatrist
Community geriatrician	Ophthalmic optician	Assistant	Speech therapist	Psychologist
School medical officer	Midwife	Secretary	Osteopaths	Counsellor
	Health Visitor		Dietician	Domiciliary aid
	Pharmacist			

Although general practice is an integral part of primary care, the terms are not synonymous. The role of the general practitioner gives an indication of the breadth of the primary care services provided and the degree of uniformity in the services. In industrialized countries, the GP is the only clinician who

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operates in the nine levels of care: prevention, pre-symptomatic detection of disease, early diagnosis, diagnosis of established disease, management of disease, management of disease complications, rehabilitation, terminal care and counselling (107).