

THE GEOGRAPHY OF HEALTH CARE SYSTEMS

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Summary

We begin by defining what is a health care system? As medical science and medical geography have evolved since the 1950s, so has thinking about what constitutes a health care system from a relatively simple system focusing on single physician practices, hospitals and asylums to complex systems of single and multiple group practices, community health and mental health centres, hospitals, long-term care (LTC) facilities, etc. As health care systems have become more complex so have the issues of access to health care services. The impacts of demographic transitions resulting from declining fertility rates, changes in internal migration patterns, legal and illegal immigration, forced migration resulting from wars and natural disasters challenge the notion of who has access to health care. Similarly, changing social and economic values also raise questions about who has access to health care. In every country, the questions of who should have access to the health care system and how do we make health care accessible is leading to the *restructuring* of health care systems. The sites of the health care system are increasingly contested places. Another outcome of restructuring or in some cases the breakdown or even collapse of national health care systems is that people are seeking health care from alternative or traditional health providers or in their homes creating new spaces in the health care system. We conclude our discussion by pointing to the growing complexity of the geography of health of care systems and the research challenges this creates.

1. Introduction

In another volume of the EOLSS, medical geography is defined as the examination of the geography of diseases and the geography of medical resources. When we examine how diseases spread over time and space and how nation-states respond to both the contagious and non-contagious diseases that exist within their populations, what we also witness is how nation-states have developed their health care systems. Health care systems are both the product of the responses of nation-states to their health and health care challenges and the mechanisms by which nation states mediate and sometimes even eradicate those health and health care challenges.

While it is inevitable that we talk about *national* health care systems, as the 21st century begins we need to re-think what we mean by national health care systems. Especially in those countries that are federal in their political organization, it may be in fact that there is no national health care system but state or provincial health care systems (see for example, Canada where it is the responsibility of the provincial governments to deliver health care), which share some characteristics but are unique in others. It is also useful to think about health care systems that reach beyond national borders to respond to diseases, which know no borders. The virtual elimination of small pox and polio are the outcomes of national health care systems working in conjunction with international health care systems. Similar examples are now being witnessed as national health care systems and the World Health Organisation respond to the challenges of new emerging diseases (e.g., HIV/AIDS, SARS and Avian Influenza).

In the following sections, we begin by defining what is a health care system (Section 2 - Defining a Health Care System). We discuss how as medical science and medical geography have evolved since the 1950s, so has thinking about what constitutes a health care system from a relatively simple system focusing on single physician practices, hospitals and asylums to complex systems of single and multiple group practices, community health and mental health centres, hospitals, long-term care (LTC) facilities, etc. In Section 3 the focus is on access to health care services. The impacts of demographic transitions resulting from declining fertility rates, changes in internal migration patterns, legal and illegal immigration, forced migration resulting from wars and natural disasters challenge the notion of who has access to health care. Similarly, changing social and economic values also raise questions about who has access to health care. In every country, the questions of who should have access to the health care system and how do we make health care accessible is leading to the *restructuring* of health care systems. This is the main theme of Section 4. The sites of the health care system are increasingly contested places. Another outcome of restructuring or in some cases the breakdown or even collapse of national health care systems is that people are seeking health care from alternative or traditional health providers or in their homes creating new spaces in the health care system. These trends are discussed in Section 5. We conclude our discussion by pointing to the growing complexity of the geography of health care systems.

2. Defining a Health Care System

In the 1950s, the geography of health care systems was mainly focused on the location of physicians and hospitals. Demographically, the “baby boom” gained in momentum, young

people moved from rural to urban areas and manufacturing supplanted agriculture as the economic engine of growth in most developed countries. In response, health care systems grew through the building of new hospitals and the expansion of existing ones especially in cities and the growth in the number of physicians practicing, especially in urban areas. What also evolved out of the 1950s was a great divide between countries that chose to provide economic access to health care through national government funded health care systems (e.g., the United Kingdom National Health Service) and those that mainly depended on private resources including private health insurance (e.g., in the United States). Within the practice of medicine, the growing specialization of physicians also has its beginnings in the 1950s as did the growing importance of the “medical-industrial complex”.

In geographic research, the trend towards quantification was taking place leading medical geographers to focus increasing attention on how to characterise a health care system as a spatial system and whether one could find evidence for geographic imbalances in the number of hospital bed and physicians practicing in urban centres versus rural areas. Using measures such as population per physician ratios and population per hospital bed ratios, research focused on demonstrating whether spatial equality existed between regions (e.g., whether population per physician ratios were the same or different in comparing regions). A second thrust of the research was towards identifying the differences between where physicians and hospitals were located and the optimal configuration of health care services following some notion of the size of places (e.g., using Central Place Theory and arguing that the optimal spatial configuration of hospitals should reflect the urban hierarchy).

Between the 1960s and 1980s as fertility rates declined, suburban life was increasingly the norm for a growing middle class, while the inner city residential populations were declining and those left living in the inner cities were mainly the elderly, the poor and the racially discriminated. Health care systems became increasingly tied to new diagnostic tools (e.g., the progression from the use of x-rays to CT scans to MRIs), surgical technologies (e.g., the first successful heart transplant to a human took place in 1967) and ever increasing medical specialization. In developed countries as well, a shift was taking place away from contagious diseases (e.g., small pox) as the focus of health and health care towards an increasing concern with chronic diseases (e.g., heart disease and cancers).

The resulting trajectories for health care systems were in several directions. Geographic inertia meant the largest and most specialized hospitals remained clustered in central city precincts. At the same time new hospitals were needed and being built in suburban locations. The trajectory for physicians during this period was from individual to group practices and away from locations in proximity to hospitals to locations reflecting the suburbanization of the population (e.g., walk-in clinics in suburban shopping centres). A third trajectory was the growth of testing and diagnostic services located independently of hospitals. These three trajectories in combination with growing specialization in medicine and new technologies resulted in a fourth trajectory, which is the evolution of ambulance services into more sophisticated emergency services dealing with a geographically dispersed and mobile population.

There are also several geographic outcomes worth noting as health care systems evolved up to the end of the 1980s in developed countries. The demographic and economic trends in

combination with the main trajectories in the health care system also manifested themselves in distinct regional patterns. Small towns and rural places witnessed declines in their populations and the disappearance of medical specialists and ultimately general practitioners as older physicians retired and new physicians were reluctant to take up practices in small towns and rural places.

Another geographic response to these trends was a growing recognition by governments in many developed countries that new planning models were required based on a regional approach to the geography of health care systems in their respective countries (e.g., the regional approach of the National Health Service in the United Kingdom was modified in the 1970s as a result of the Resource Allocation Working Party formula).

A third geographic response reflected specific changes to mental health care, which took place during this period. While medical care was increasingly centralised within larger and larger hospitals in the major urban centres, the trend was to close mental health hospitals, sanatoria and asylums in favour of deinstitutionalisation and the creation of community mental health services. Policy-makers and planners on both the left and the right initially favoured this change to the health care system (the former because of their belief in human rights and the latter because of their desire to save money), but in fact were not prepared for the responses that took place. Resistance from middle and upper class neighbourhoods (the not-in-my-backyard, NIMBY, syndrome) resulted in what have been referred to in the health care literature as “service dependent ghettos” of facilities in areas usually adjacent to or near the central business districts of cities. In addition to the community mental health facilities and persons with mental health problems wandering the streets, these areas are often also residential areas characterised by large older houses and old hotels that have been converted into low-income rental occupation. The phenomenon of deinstitutionalisation has generated much debate and research as a policy, its contribution or lack thereof to the improvement in health care systems and what role it has played in contributing to the number of homeless people living on the streets in the cities of the developed world.

In the developing world, even though the demographic trends were much different and infectious diseases continued to be the core health issues between the 1960s and 1980s, policy-makers and planners chose to emulate the developed world. Investment was mainly in hospitals in the largest cities to provide services for a small part of the population who had access to the hospitals. Health care systems can be conceptualised as two triangles in the developing countries: a population triangle where the rural population is at the base and the urban population is at the apex reflecting their relative sizes, and the health care system is an inverted triangle where the fewest resources are allocated to rural areas and most of the resources are allocated in the urban areas.

Research on the geography of health care systems reflected these trends and trajectories to a large extent. Over the decades from the 1960s to the end of the 1980s, research shifted increasingly from the examination of the geographic distribution of medical resources to the examination of access to health care (see Section 3), restructuring of health care systems (Section 4) to new spaces of health care (Section 5).

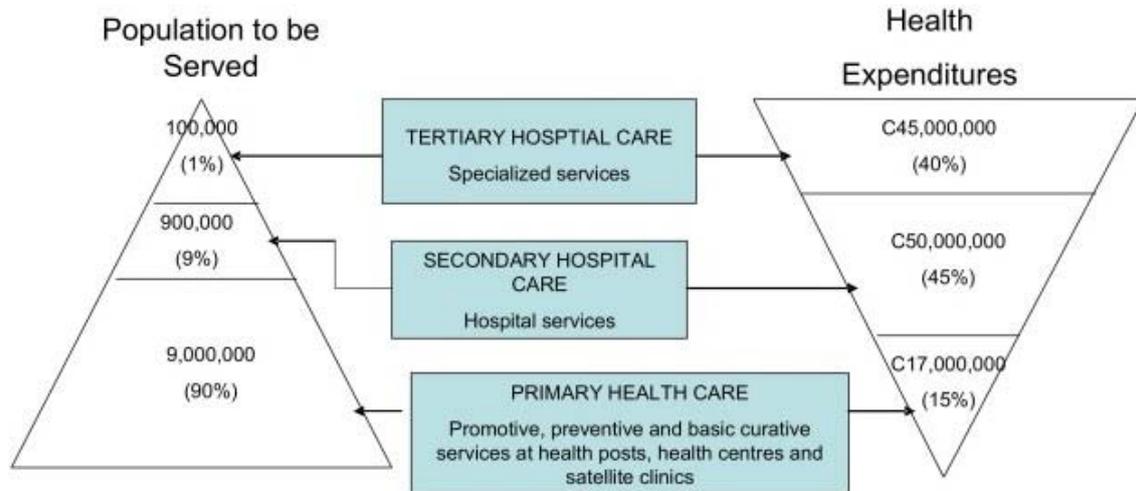


Figure 1. Health care hierarchy and the inversion of expenditure to population served in Ghana (after Fosu, 1986) [Source: Phillips, David R (1990) *Health and Health care in the third world* Harlow, UK Longman Scientific & Technical, P.113]

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