Organizing Health Care

A Comparative Analysis of National Institutions and Inequality Over Time

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abstract: Research has not satisfactorily answered the question of whether institutions are becoming more similar across countries despite the existence of nationally distinctive social, cultural, political and economic factors. This study presents an institutional account for the process of change in national institutions over time, and specifically examines one of the most important national institutions, health care systems (HCSs). Longitudinal data on national health care systems and population health in the OECD countries show that there has been increasing convergence in the general characteristics of national HCSs since 1960, mainly in both the expenditure on health and the level of public coverage of medical costs. At the same time, the composition and utilization of such HCSs have diverged, particularly concerning the national availability and utilization of health care resources. Despite these differences in national HCSs due to differences in national cultural traits like the degree of individualism, countries have healthier populations, and improvements in health appear to converge all over the industrialized world. Results from this study indicate that population health is ultimately affected by social variables such as the level of socioeconomic inequality rather than by the way countries organize health care.

keywords: convergence ✦ individualism ✦ institutional theory ✦ national organizations ✦ organizational change ✦ public policy ✦ social stratification ✦ socioeconomic inequalities

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Theoretical Framework

Existing research has not satisfactorily answered the question of whether countries are evolving in a common direction. Some scholars have argued for convergence of national institutions in correspondence to the requirements of the modern economy. Others have argued for divergence along lines set by political and cultural factors (for reviews, see Deutsch, 1973; Kerr et al., 1960; Meyer et al., 1975; Millar, 1972; Weinberg, 1969).

Convergence theorists assert that industrial nations become increasingly alike in their institutions despite cultural, political and historical differences. Societies supposedly converge as they strive for efficiency and create institutions adapted to industrial economies (Kerr et al., 1960; Inkeles and Rossi, 1956; Rostow, 1960; Töennies, 1963). In reaction to these functionalist lines of thought analyzing nation-states as isolated actors evolving independently of other nation-states, post-Second World War theorists have continued the convergence debate, arguing both for and against convergence among industrial nations in areas such as economic life, political systems and stratification systems (Baum, 1974; Grew, 1984; Meyer et al., 1975).

Among these theorists are neoinstitutionalists, who argue that nation-states are embedded in an exogenous, and more or less worldwide, rationalistic culture that defines the nature, purpose, resources, technologies, controls and sovereignty of the 'proper' nation-state (Meyer, 1994). The linkages to other nation-states, international organizations and scientific communities play an important role in making the general internal characteristics of national systems converge over time. National trends follow similar patterns, highly influenced by 'the wider system'. This worldwide system produces a great deal of powerful discourse despite its lack of authority to act. There are several studies analyzing the impact of world institutional models on national systems. Changes at the nation-state level are driven by opportunities and pressures from exogenous universalistic and rationalized cultural models in a wide range of social sectors, e.g. economy (Meyer et al., 1975), education (Meyer et al., 1992), human rights (Boli, 1987; Tsutsui, 1999), woman's rights (Berkovitch, 1993; Charles, 1992; Ramirez and Weiss, 1979), science (Wuthnow, 1987), environment (Frank, 1992), welfare models (Strang and Chang, 1993) and models of management (Guillén, 1994).

Certain national sectors are more likely to incorporate practices and procedures that have been institutionalized as rational in society rather than standardized technical rules of efficiency. As Meyer and Scott (1992) suggest, in the late 19th century most developed countries went through an 'organization revolution'. Societal systems were rationalized in formal organizations.[1] Schooling, science activities, health delivery and welfare

systems in general are perceived as less rational organizational structures according to defined techniques of efficiency (i.e. functional reasons associated with national development). These are examples of national systems less bounded by their technical environments and more embedded in institutional ones. Organizations in technical environments are those in which a product or service is produced and exchanged in a market where organizations are rewarded for having efficient controls of their production. In technical environments, organizations are therefore encouraged to develop structures that coordinate and control their activities. These structures increase the efficiency of organizations and give them a competitive advantage over less efficient ones. By contrast, institutional environments are those characterized by the elaboration of rules and requirements to which organizations must conform if they are to become legitimate and receive support. In institutional environments, organizations are rewarded for utilizing structures and processes that are desirable; failure to follow the correct structural principles makes organizations look irrational and threatens their expansion and survival over time (see Meyer and Rowan, 1977).

In the case of the organization of national health care systems (HCSs), the technical rules that define their bases are still unclear. It is not obvious to what extent technology and resources need to be mobilized to promote population health efficiently. There are no universal principles for an efficient management of HCSs; social scientists have yet to establish aggregate performance indicators on the improvements to in-patient care and reduced chances of disablement. Furthermore, it is difficult to distinguish which proportion of health improvements is brought about by the medical system, and which by non-medical factors, such as an increase in balanced diets, a cleaner environment, safer transportation and workplaces, and a fairer distribution of income and education.

In contemporary societies, national health is given much attention and value, and is increasingly defined as a collective good. However, the national organization of HCSs does not necessarily follow from standard scientific, economic and technological factors. This means that national HCSs' goals, technologies and resources do not proceed to any consensual and universally standardized formulations regarding their efficiency. Instead, some institutional circumstances have motivated the adoption of certain HCSs over time in different types of nation-states. National patterns of organizing HCSs are better predicted by linkages to other nation-states or international associations than by internal functional factors. The percentage of GDP spent by developed nation-states or the percentage of people covered against medical costs have followed similar patterns, highly influenced by the international discourse on health provision. The worldwide institutionalized system composed of

nation-states, international organizations and professional associations promotes improvement in population health and increased equality in access to health services. In this sense, there is a convergent trend with respect to general national health care characteristics, in both the expenditure on health and the level of public coverage. National HCSs become more similar over time. Thus, I suggest:

Proposition 1: Variation in the general forms or characteristics of national HCSs decreases over time.

In addition to the consideration of national standardized characteristics and tendencies to isomorphic change, institutional arguments help to explain the decoupled character of the links between world trends, and particular national models. This is because worldwide institutional rules predict convergence in what countries do but not in how they specifically do it. National structures, in this sense, are never completely consensual across nations. National cultures and interest groups affect the way specific structures are defined and organized within each country. Although the more general dimensions of national health systems tend to reflect world models and change in similar directions, there are still clear national differences in specific health structures and policies, particularly those concerning the availability and utilization of national health care resources. From this decoupling argument, I suggest that:

Proposition 2: Variation in the composition and utilization of national HCSs does not decrease over time.

Despite the overall convergent trend in the general forms of national HCSs, there are still variations across countries. National HCSs are constructed following not only worldwide scripts but also national cultures. In this sense, it is important to understand how the differences in the specific organization and utilization of HCSs across countries can be explained by variations in national cultures and values. For example, the level of individualism as a national cultural trait (Jepperson, 1992; Hofstede, 1980, 1983; Triandis, 1995) should have an effect on the amount of public expenditure on health as well as the degree of social protection, among others:

Proposition 3.1: Individualist nation-states tend to spend less in public health care than collectivist ones.

Proposition 3.2: Collectivist nation-states tend to offer higher social protection than individualist ones.

Countries not only tend to have healthier populations over time but also improvements in their health appear to converge despite the different and diverging national HCSs. As convergence theorists predict, politically and culturally diverse industrial nation-states are becoming more and more alike with regard to their population health status:

Proposition 4: Variation in national population health status declines over time.

In looking at the association between the dimensions of national health structures and improvements in population health, welfare theorists have tended to emphasize the benefits of additional public expenditures on population health. By 'welfare theory' I refer to the social theories of developed welfare states. In comparing welfare states across OECD countries, this body of literature includes analyses of health policy and other social policies (for a review, see Castles and Mitchell, 1992; Esping-Andersen, 1996; Moran, 1992; Olsen, 2002; Swank, 2002; Orloff, 1993; Sainsbury, 1996).[2] Many of these quantitative and qualitative studies demonstrate that public expenditure on education, child care and employment programs (just to name a few examples) are correlated with improvements in the general health and well-being of people in any given society.[3] Moreover, in the discussion of access to medical care in this literature, it is frequently assumed that not only increasing but also equalizing access to health care delivery systems reduces disparities in health, and therefore increases health status overall.[4] In contrast, several studies have shown that this association between public expenditures and health has been overemphasized. In the US, for example, research has found that public expenditure on medical care explains no more than 10 percent of the variation in the US health status (US Department of Health, Education, and Welfare, 1979). The correlation between national health resources and population health is believed to be weak and tends to diminish or even disappear over time (for a review, see Williams, 1990). After controlling for the level of national development, I therefore expect to refute the two following welfare propositions:

Proposition 5.1: Countries that spend more on public health care have healthier populations.

Proposition 5.2: Countries that provide higher social protection have healthier populations.

One possible explanation for the rejection of these hypotheses is that population health depends more on social variables than on the national structure of spending on health itself. The association between social stratification and health is viewed as a classic problem in the study of social structure and personality. Theorists in this field (House, 1981; Inkeles, 1959) predict that because social structures shape individual values and behavior, socioeconomic differentials in health are due at least in part to conditions of life that derive from an individual's structural position. In this line of thought, many health scholars have already suggested that there is a persistent association between social stratification and health status (Kaplan et al., 1996; Kawachi and Kennedy, 1997;

Kennedy et al., 1998; Wilkinson, 1992a, 1992b, 1996, 1997; Williams, 1990). There seems to be consensus in that the current preoccupation with issues of increasing expenditure on health care or equalization of preventive health care is not the most fruitful approach to correcting differentials in health outcomes. The point is not that increases in health care delivery make no difference. What it implies is that overall national health status will not change as long as their national occupation and education systems remain unchanged. In this sense, economic policies that influence income and wealth inequality may have an important impact on the health of countries. In short, countries that experience low levels of inequality in the distribution of income tend to have lower socioeconomic differentials in health, and therefore their populations are healthier overall:

> *Proposition 6:* High socioeconomic inequality in the distribution of assets reduces national population health.

Research Design

Data

The evolution of national institutions is examined using cross-national longitudinal data on national health care structures, and population health status across OECD countries during the period 1960–90.[5] The study refers both to public welfare efforts by national governments and to health outcomes as reflected in 'quality-of-life' measures. The data analyzed are national-level aggregate data for 22 OECD countries, mainly obtained from the *OECD Health Data 1995* (OECD, 1995a). This data set provides relevant statistics of health and health care in the OECD region during the 1960–90 period, by single years and by each country. The choice of data set was mainly based on two factors. First, specific and extensive data on national population health and HCSs are only available for rich, industrialized countries. Second, the data provide comparable measures across countries, which are available for at least four points in time since 1960 separated by five or 10 years. The variables for this study have been selected on the basis of (1) their relevance to the description of the major dimensions of national HCSs and population health status; (2) their comparability of measurement across nations and over time; and (3) the availability of time-series observations in a significant number of countries.[6]

Measurement, Hypotheses and Methodology

In the preceding discussion, a series of general propositions accounting for the most important aspects of national HCSs by the end of the 20th century are developed. In this section, I present a set of measures and

testable hypotheses that derive from these propositions. I also describe the methodology I use for testing these theoretical explanations. To test propositions regarding similarities and disparities among national health systems, a series of longitudinal analyses of change are performed. Propositions related to the effects of national HCSs on population health are tested using longitudinal regressions and multivariate analysis of variance during the 1960–90 period. Regression analyses are also used to test propositions about the impact of the degree of individualism on the general characteristics that national institutions take on, as well as hypotheses referring to the effects of social inequalities on population health status.

In this study, variation is measured using the coefficient of variation (i.e., the ratio of the standard deviation to the mean, expressed as a percentage) rather than the more common alternatives such as the standard deviation or variance.[7] The greater the decrease in the coefficient of variation over a specified period of time, the greater the convergence. Since the data were available for different time periods, I also present a measure of the annual rate of change for each of the variables. The annual rate of change in the coefficient of variation (expressed as a percentage) is calculated as follows (Williamson and Fleming, 1977):

$$\frac{\left(\frac{CV_{T2} - CV_{T1}}{CV_{T1}}\right) \times 100}{(T_2 - T_1)}$$

where CV_{T1} = coefficient of variation at the earliest year, and CV_{T2} = coefficient of variation at the latest year. Positive values of the annual rate of change indicate that variation increases across countries over the 1960–90 period.[8] In other words, the more negative the rate of change, the stronger the trend toward convergence.

Proposition 1 asserts that there is convergence in the forms of national HCSs. The form of national HCSs refers to the major characteristics of national HCSs as operationalized in this article by using health expenditure and social protection: (1) the public and total expenditure on inpatient care, ambulance care and medical goods; and (2) the level of public coverage against health costs. According to Proposition 1, I derive the following testable hypothesis:

> *Hypothesis 1:* The coefficient of variation in health expenditure and percentage of population covered against health costs decreases over time; that is, the annual rate of change in the variation of these general indicators is negative.

Proposition 2 is about divergence regarding the composition and utilization of national HCSs. The term 'composition and utilization of HCSs'

here refers to the availability and use of national health care resources and employment. In particular, it is measured by the following indicators: (1) professional activity such as total health employment and the number of active physicians; (2) hospital facilities and staff such as available beds, hospital staffing ratios, nursing staffing ratio and private hospital beds; (3) hospital utilization such as per capita use of in-patient care, admission rates, average length of stay, bed occupancy rates and hospital turnover rates; and (4) utilization of ambulatory care such as physician's workload and pharmaceutical consumption per person. In agreement with Proposition 2:

> *Hypothesis 2:* The coefficient of variation in the indicators of the composition and utilization of national HCSs – more specifically in the availability and use of national health care resources, as well as health employment – does not decrease over time; that is, the annual rate of change in the variation of such indicators is not negative.

The persistence of different national HCSs and different utilization of these systems is explained by the particular cultural features of individualist and collectivist countries. Propositions 3.1 and 3.2 assert a relationship between the levels of individualism and the major dimensions of public national HCSs.[9] The question is whether individualist countries spend less in health and cover a lower proportion of people against health costs than collectivist ones. Following Triandis's (1995) work on individualism and collectivism, there are a variety of attributes that indicate whether a particular country is individualist or collectivist. Triandis points out that collectivist countries tend to favor attitudes that reflect sociability, interdependence, communication and family integrity. In contrast, individualist countries believe in self-reliance, hedonism, competition and emotional detachment from in-groups. From Propositions 3.1 and 3.2, and given the observed international trend toward increasing public health expenditure and social coverage over time, I derive the following two testable hypotheses:

> *Hypothesis 3.1:* The level of individualism has a negative impact on the growth rate of public expenditure on health care.

> *Hypothesis 3.2:* The level of individualism has a negative impact on the growth rate of population covered against health care costs.

In order to test these hypotheses several multiple regression models are estimated. The sample of observations used in the analysis is a panel data set of 22 OECD countries for the years 1970, 1980 and 1990. To test Hypothesis 3.1, the average annual growth rates of public expenditure on health (as measured by the value per capita) are regressed on GDP per capita and on a measure of the country's degree of individualism. To test

Hypothesis 3.2, the regression equations treat the annual growth rate of social protection (as the percentage of population covered against inpatient care cost) as the dependent variable. Given that the data set combines time-series and cross-sections, ordinary least square (OLS) estimation of regression models is not feasible; instead regression models using a generalized estimating equation approach (GEE) are estimated.[10]

Hypotheses 3.1 and 3.2 predict that the level of individualism should have a significant and negative impact on the growth rate of both public expenditure on health and the percentage of population covered against health care costs. I use Hofstede's (1980) individualism index (HII) as a measure of individualism for each country. Despite its limitations, the HII is still the most recent continuous index that ranks 40 countries in a consistent and systematic manner according to the level of individualism.[11] The index is the result of a factor analysis explaining national differences in employees' answers to 14 questions.[12] The higher the index, the more individualist the country. The index of individualism ranges from 0.27 (Portugal) to 0.91 (US). The highest individualism index values are found for the US, Australia, Great Britain, Canada and the Netherlands. Among the most collectivist countries there are some Mediterranean countries like Portugal, Spain, but also Japan, Austria and Finland.

Proposition 4 refers to the process of convergence in population health status. The major indicators for measuring the relative health performance of each country available for the 1960–90 period are male and female life expectancy at birth, at age 40 and at age 60 (in years), infant mortality (as a percentage of live births), death crude rate (as the number of deaths per 1000 population), percentage of population 65 years old and older and mean/median age.[13] Proposition 4 implies that:

> *Hypothesis 4:* The coefficient of variation in the major indicators of population health status declines over time; in other words, their annual rate of change is negative.

In this study, I expect to reject the 'welfare' theses about the benefits of additional public expenditures and equalizing access to health care delivery systems on population health.[14] Propositions 5.1 and 5.2 suggest that countries characterized by spending a relatively higher per capita amount on health and having universal public coverage against medical costs should have healthier populations than other countries. Thus, I expect to reject that:

> *Hypothesis 5.1:* Public expenditure on health has a positive effect on population health.
>
> *Hypothesis 5.2:* The level of public coverage against health care costs has a positive effect on population health.

Instead, I want to show that population health depends more on social variables than on the national structure of spending on health itself. Likewise, Proposition 6 suggests that countries with low levels of socioeconomic inequality will have healthier populations than countries with high levels of inequality:

> *Hypothesis 6:* The level of socioeconomic inequality has a negative effect on population health.

To test Hypotheses 5.1 and 5.2 together with Hypothesis 6, a set of regression equations are again estimated using the GEE method of estimation. The level of population health status is regressed on some of the major characteristics of the countries. Again, the panel data set of 22 OECD countries for the years 1970, 1980 and 1990 is analyzed.

Few aggregate measures of population health status exist. To test Hypothesis 6, I use life expectancy at birth for females and for males, and infant mortality as dependent variables. I control for the level of socioeconomic development using GDP per capita (lagged five years). Due to the relatively small sample of countries with available and comparable data, attention is restricted to the two major dimensions of national HCSs: (1) public expenditure and (2) public coverage. Public expenditure on health is measured by the value per capita in current prices.[15] One disadvantage of this continuous variable is that it can vary widely from year to year for a given country. To control for possible fluctuations, I averaged per capita public expenditure on health over the 1960–5, the 1970–5 and 1980–5 periods. Public protection is measured using the proportion of population covered against in-patient care costs (also lagged by five years).[16]

The socioeconomic inequality argument is operationalized by computing the ratio of the percentage of income received by the richest 20 percent of households to the percentage of income received by the poorest 20 percent of households. It is calculated from several issues of the *Human Development Report* during the 1960s, 1970s and 1980s.[17] The lower the ratio, the less the income inequality. On this measure, the US is found to have more income inequality than most European countries. In the 1980s, OECD countries have an average of 6.3 (compared to 16.8 for developing countries). This means that the percentage of income received by the richest 20 percent of households is six times the percentage received by the poorest 20 percent of households.

Health Care Systems and Demographic Developments

Trends in Social Expenditure on Health

Health care is the second largest item of social expenditure in OECD countries, approaching 8.4 percent of GDP in 1993, and accounting on average for 12 percent of all public expenditure. It is also a large employer, absorbing over 6 percent of the total employment (OECD, 1995a). For OECD countries, total health expenditure expressed as a percentage of GDP rose from almost 4 percent in 1960 to nearly 8.5 percent in 1993. This represents a growth rate twice that of GDP over the 1960–90 period.

The public share of total health expenditure increased even faster (from 2.4 percent in 1960 to 6.2 percent in 1990), and, on average, was nearly 75 percent of total health care expenditure in 1993. Much of the increase is associated with the enlargement of the coverage of health services by the public sector prior to the mid-1970s, by which time both physical and financial access to public hospitals was almost universal throughout OECD countries, and public provision of ambulatory and primary services was almost equally widespread.

Since 1975 there has been a slowdown both in the rate of growth in total expenditure and in the public component of expenditure. This has been associated with slower economic growth since the mid-1970s and with conscious policies to restrain the growth of health care costs, with respect to both prices and utilization or intensity of care. The average annual growth rates were 8.3 and 5.9 percent during the 1960–70 and 1970–80 periods, respectively. The rate went down to 3 percent in the 1990s.

There are considerable differences between countries both in the share of GDP devoted to health care and in per capita levels of expenditure. Traditionally, these differences have been attributed to differences in standards of living (e.g. expenditure on health typically rises more than proportionally with increases in personal incomes).

Access to health services, both primary and hospital care, has become nearly universal in the industrialized world. There has been an effort to increase the percentage of the population eligible for public coverage. In the 1980s, 75 percent of the OECD countries had quasi-universal public coverage against medical care costs in comparison with only 58 percent of OECD countries in the 1970s. By 1990, the average percentage of population eligible for coverage against total medical expenditure in the OECD area was 95.5 percent.

Trends in Population Health

It is difficult to measure changes in the health status of populations, to place a value on the outcomes of health programs, or even to distinguish

the role played by national health services from that of more general factors – such as environmental conditions, general lifestyles and health education. Nevertheless, the OECD data reveal some national health trends. Overall, there is improvement in health in industrial countries. Infant mortality has declined. In 1960, across the 22 OECD countries under analysis, three children in 100 died within a year of their birth. The figure is now less than one in 100 (OECD, 1995a). Life expectancy has also increased for those in the older age groups. Females born in 1990 are expected to live almost seven years longer than those born in 1960, in comparison with males, who live five years longer. Women, now aged 60, live almost four years longer than women who were aged 60 in 1960, and men two years. The improvement has been greater for women.[18]

Over the 30 years studied most industrialized countries experienced first an increase and subsequently a marked decline in total fertility rates, to the point that fertility rates in almost all OECD countries are now below the level needed to ensure the replacement of the population (OECD, 1995a). As a consequence of both the longer-term trend toward lower birth rates and greater longevity, almost all OECD countries experienced rapid aging of their population by the end of the century. The proportion of population aged 65 or over increased from 9.6 percent up to almost 14 percent in the 1960–90 period. By the year 2040, 20–29 percent of the population in OECD countries will be over the age of 65. This aging of the population is one of the most significant changes of this new century and is likely to have a strong impact on the evolution of social programs.

Results

Convergence in the General Forms of National HCSs

This section examines the convergence thesis as it relates to the general forms of national HCSs. The general form of HCSs refers to their major broad internal characteristics as operationalized by using public and total expenditure on health and the level of public coverage against medical costs. The data for the trend in these general characteristics between 1960 and 1990 are presented in Table 1. Based on the institutionalist predictions of convergence in general forms, one would expect a decline in the coefficient of variation of the major dimensions of national health systems during the period (i.e. a negative value of the annual rate of change in the coefficient of variation). Notwithstanding the large differences that exist in the amounts countries devoted to medical goods and services, this study supports the convergence thesis as it relates to the general dimensions of national HCSs (Hypothesis 1). The trend in total public expenditure and total expenditure on health is weak, but in the direction of convergence. Moreover, the trend in public expenditure on in-patient

care, ambulance care and medical goods is also in the direction of convergence.[19]

The results of the convergence analysis for the proportion of population covered against medical costs, ambulatory medical care, pharmaceutical costs, in-patient care services and therapeutic appliances offer strong support for the convergence theory. Clearly, countries become similar in their proportions of GDP spent on health, health dollars spent per capita, as well as proportions of population covered by their national health systems.

Despite the trend toward isomorphic national policies in relation to spending on health and social protection, there still exist major disparities among countries. For example, although all OECD countries shared a common experience of expansion and subsequent slowdown of social expenditure on health between 1960 and 1990, there are major differences between countries, both in the level of expenditure that has been reached, as well as in recent rates of growth. In the 1980s, the privately funded expenditure on health concentrates in the US$42–601 per capita range. This range is even bigger (i.e. 426–1126) in the case of public expenditure. In 1990, of the 22 OECD countries, Ireland, the US and the UK spend less than 5.3 percent of GDP on public expenditure on health. At the other end of the scale, five countries spend around 7 percent of their GDP (i.e. Belgium, Canada, Iceland, Norway and Sweden). Although the decrease in expenditure has been apparent in all OECD countries, four countries reduced their expenditure shares whereas nine countries increased their health expenditure shares by half a percentage point or more over the 30 years studied. Of particular interest are the cases of Switzerland and the Netherlands, whose expenditure shares increased by 1 percent.

Divergence in the Composition and Utilization of National HCSs

This study supports the existence of high coefficients of variation in the specific national health care characteristics (Hypothesis 2) – due to the decoupled character of the links between general models defining the characteristics of proper national HCSs, and the specific ways countries decide to provide health care. Almost all indicators measuring professional activity, hospital facilities and staff, and utilization of ambulatory care suggest a divergent trend over the 1960–90 period (Table 2). It is of interest that the coefficient of variation in the number of in-patient care beds increases at an annual rate of 3 percent. Regarding hospital throughputs, the trend in per capita use of health institutions, admission rates and average length of stay is very strong in the direction of divergence – with the coefficients of variation increasing, at least, at a rate of 2 percent every year.

Table 1 *Trends in the General Forms of Health Care Systems: Expenditure on Health and Social Protection (1960–90)*

Dimension	Indicator		1960	1965	1970	1975	1980	1985	1990	Annual Rate of Change in the Coefficient of Variation (%)
Total public expenditure	Value per capita (current PPP US$)	Mean	533.54	747.72	1262.23	2247.07	3771.17	5612.05	7425.57	
		CV (%)	9.29	34.70	28.12	25.25	30.83	29.57	28.07	–0.95
	Percentage of GDP	Mean	30.56	33.06	37.68	41.86	43.10	46.51	46.50	
		CV (%)	21.25	22.92	22.46	21.81	23.63	20.99	19.24	–0.32
Total expenditure on health	Value per capita (current PPP US$)	Mean	67.14	102.76	174.09	343.18	605.45	892.73	1267.36	
		CV (%)	47.19	41.22	42.40	34.87	33.66	36.80	36.71	–0.74
	Percentage of GDP	Mean	3.88	4.51	5.30	6.60	7.09	7.39	7.83	
		CV (%)	23.47	18.81	20.87	16.40	17.38	17.73	18.84	–0.66
Public expenditure on health	Value per capita (current PPP US$)	Mean	39.23	65.23	125.64	261.50	460.04	666.18	934.82	
		CV (%)	49.60	42.48	40.02	33.36	31.12	31.33	29.22	–1.37
	Percentage of GDP	Mean	2.36	2.99	3.86	5.05	5.45	5.55	5.83	
		CV (%)	34.06	29.02	27.65	21.51	21.31	17.66	16.61	–1.71
Social protection	Total medical consumption	Mean	74.65	81.10	87.40	90.29	94.20	95.16	95.51	
		CV (%)	34.79	28.55	22.45	17.34	14.28	13.79	13.92	–2.00
	Ambulatory medical care	Mean	70.77	77.40	84.91	87.79	91.23	92.01	92.21	
		CV (%)	41.50	36.95	24.61	23.15	20.19	19.61	19.77	–1.74
	Pharmaceutical	Mean	66.19	72.95	78.46	82.83	84.96	87.44	87.64	
		CV (%)	49.79	43.92	39.13	33.30	31.07	29.42	29.40	–1.36
	In-patient care services	Mean	75.05	81.45	89.60	93.60	94.82	95.49	95.62	
		CV (%)	33.87	28.72	18.79	14.15	13.87	13.41	13.53	–2.00
	Therapeutic appliances	Mean	66.19	72.95	78.46	82.83	84.96	87.44	89.40	
		CV (%)	49.79	43.92	39.13	33.30	31.07	29.42	28.20	–1.45
Total expenditure on in-patient care	Value per capita (current PPP US$)	Mean	25.77	40.50	78.71	161.71	293.90	432.80	593.90	
		CV (%)	54.05	49.93	48.62	42.10	39.51	40.78	41.27	–0.79
	Percentage of GDP	Mean	1.55	1.78	2.33	2.98	3.36	3.50	3.65	
	CV (%)	25.82	30.49	37.08	32.54	28.35	26.09	28.27	0.32	

Table 1 *Continued*

Dimension	Indicator		1960	1965	1970	1975	1980	1985	1990	Annual Rate of Change in the Coefficient of Variation (%)
Public expenditure	Value per capita	Mean	22.29	35.32	67.09	142.77	260.86	367.64	496.45	
on in-patient care	(current PPP US$)	CV (%)	72.10	62.47	60.29	50.22	48.84	43.52	41.60	–1.41
	Percentage of GDP	Mean	1.16	1.51	2.09	2.73	3.05	3.05	3.09	
		CV (%)	46.89	52.61	52.57	44.00	42.78	36.68	35.06	–0.84
Total expenditure	Value per capita	Mean			55.58	110.93	169.61	267.29	390.35	
on ambulance care	(current PPP US$)	CV (%)			34.29	38.67	49.76	47.69	47.39	1.91
	Percentage of GDP	Mean			1.71	2.03	1.88	2.04	2.23	
		CV (%)			19.88	22.18	37.73	38.27	37.92	4.54
Public expenditure	Value per capita	Mean			26.06	58.28	90.33	149.68	216.95	
on ambulance care	(current PPP US$)	CV (%)			58.74	46.26	57.76	52.46	53.40	–0.45
	Percentage of GDP	Mean			0.81	1.11	1.10	1.23	1.32	
		CV (%)			57.36	48.90	53.51	46.29	47.09	–0.89
Total expenditure	Value per capita	Mean			29.20	47.72	73.86	107.41	161.67	
on medical goods	(current PPP US$)	CV (%)			41.26	36.94	42.87	43.53	38.86	–0.29
	Percentage of GDP	Mean			0.93	0.93	0.90	0.93	1.03	
		CV (%)			37.71	40.13	38.68	38.55	30.30	–0.98
Public expenditure	Value per capita	Mean			12.63	25.40	38.73	58.05	85.36	
on medical goods	(current PPP US$)	CV (%)			67.13	58.34	61.09	62.24	57.94	–0.68
	Percentage of GDP	Mean			0.38	0.50	0.49	0.50	0.54	
		CV (%)			70.62	58.03	53.20	55.88	53.72	–1.20

Note: CV = Coefficient of variation. The coefficient of variation is the ratio of the standard deviation to the mean, expressed as a percentage.
Source: OECD (1995a).

Table 2 *Trends in the Composition and Utilization of National Health Care Systems: Availability of Resources (1960–90)*

Dimension	Indicator		1960	1965	1970	1975	1980	1985	1990	Annual Rate of Change in the Coefficient of Variation (%)
Professional activity	Total health employment	Mean	2.17	2.68	3.17	4.19	5.01	5.64	5.23	
	(as % of total employment)	CV (%)	44.30	40.57	41.01	41.29	37.64	35.54	35.73	–0.64
	Active physicians	Mean	1.12	1.20	1.30	1.58	1.89	2.26	2.53	
	(as % of total population)	CV (%)	23.84	21.96	17.83	18.59	21.01	23.97	26.53	0.38
Hospital facilities and staff	In-patient care beds	Mean			9.99	10.40	10.34	9.86	9.55	
	(all medical institutions) '(per 1000 people)'	CV (%)			29.00	30.29	33.55	37.18	46.81	3.07
	Acute care hospital beds	Mean			5.49	5.67	5.59	5.11	4.71	
	'(per 1000 people)'	CV (%)			23.65	19.07	22.04	24.46	30.79	1.51
	Psychiatric beds	Mean				2.25	2.07	1.75	1.46	
	'(per 1000 people)'	CV (%)				41.60	44.50	46.24	46.64	0.81
	Nursing home beds	Mean				2.98	3.50	3.73	3.57	
	'(per 1000 people)'	CV (%)				61.76	84.20	77.14	72.90	1.20
	Hospital staffing ratios	Mean				1.25	1.51	1.78	1.96	
	(personnel per available bed)	CV (%)				42.64	35.44	42.60	40.27	–0.37
	Nursing staffing ratios	Mean				0.34	0.57	0.65	0.81	
	(nurses per available bed)	CV (%)				32.37	63.10	40.15	45.73	2.75
	Private hospital beds	Mean			40.58	36.79	29.73	29.54	24.54	
	(as % of total bed stock)	CV (%)			62.31	63.20	87.28	83.58	95.97	2.70
Hospital throughputs	Per capita use of in-patient care	Mean	3.03	2.95	3.03	2.96	3.09	2.99	2.73	
	(bed-days per person)	CV (%)	27.93	29.48	32.62	35.67	39.76	42.50	44.87	2.02
	Per capita use of acute hospital	Mean					1.61	1.47	1.34	
	care (bed-days per person)	CV (%)					22.78	31.14	32.85	4.42
	Admission rate in in-patient	Mean		11.52	12.63	14.10	15.30	16.31	16.99	
	care institutions (patients as % of population)	CV (%)		29.11	29.42	28.02	27.97	29.81	33.41	0.59

Table 2 *Continued*

Dimension	Indicator		1960	1965	1970	1975	1980	1985	1990	Annual Rate of Change in the Coefficient of Variation (%)
Hospital throughputs	Admission rate in acute care hospitals (patients as % of population)	Mean					14.96	15.14	15.90	
		CV (%)					15.90	23.20	24.26	5.26
	Average length of stay in in-patient care institutions (patient days per admission)	Mean		25.52	23.73	21.08	19.37	17.66	15.96	
		CV (%)		38.14	42.81	48.27	52.77	56.57	63.78	2.69
	Average length of stay in acute care hospitals (patient days per admission)	Mean			13.81	11.95	10.66	9.87	8.51	
		CV (%)			24.00	22.82	25.47	25.53	27.87	0.81
	Bed occupancy rate in in-patient care institutions (as % of available beds)	Mean				80.35	80.79	81.36	79.47	
		CV (%)				8.67	9.70	8.84	10.38	1.31
	Bed occupancy rate in acute care hospitals (as % of available beds)	Mean				76.45	76.97	76.31	76.45	
		CV (%)				7.22	6.80	8.14	7.49	0.25
	Hospital turnover rate (cases treated per bed excluding psychiatric hospital)	Mean		17.96	19.42	20.44	22.20	23.74	24.55	
		CV (%)		26.76	27.72	30.08	29.05	32.03	29.91	0.47
Utilization of ambulatory care	Physician's workload (average number of patient contacts per physician)	Mean			4.18	5.62	5.84	5.91	6.057	
		CV (%)			40.22	52.95	47.61	41.52	38.31	−0.24
	Pharmaceutical consumption per person (average number of physical units per person)	Mean			8.88	9.53	10.25	10.12	12.03	
		CV (%)			55.15	63.14	64.00	75.98	76.34	1.92

Note: CV = Coefficient of variation. The coefficient of variation is the ratio of the standard deviation to the mean, expressed as a percentage.
Source: OECD (1995a).

In sum, large disparities exist in the health care services provided by national HCSs. Most of these differences in the amount of available resources as well as in the utilization of medical services and resources have become more prominent during the last decades.

Individualism and Collectivism

Table 1 shows that the coefficients of variation in the general characteristics of national HCSs were very high in 1960 and dropped from 1960 to 1990. However, these coefficients of variation remain relatively high, especially when compared with the low levels of variation associated with population health. For example, although national differences have diminished over time (e.g. the annual rate of change is 1.4 for public expenditure on in-patient care, 0.4 for ambulance care and 0.7 for medical goods), these differences were still large in 1990 (e.g. the average coefficient of variation for public expenditure on in-patient care, ambulance care and medical goods is 45 percent). These differences in the forms of national HCSs are associated with national variations in their internal social and cultural processes.

Table 3 reports the results of two regression models analyzing the panel data of the 22 countries in 1970, 1980 and 1990 ($N = 66$). These regression models are estimated using the GEE approach, which corrects for correlated errors that occur when the dependent variable is measured

Table 3 *Multivariate Regression Models of the Change of Two National Health Care Variables on the Level of National Development and Individualism Using GEE Estimation; Pooled Sample of 22 OECD Countries in 1970, 1980 and 1990 (*N = *66)*

	GLS Regression Coefficients of Average Annual Growth Rates of Two National Health Care Variables[a] (as a percentage)	
Independent Variables	Per Capita Public Expenditure on Health	Public Coverage against In-Patient Care
Constant	42.54***	8.01***
GDP per capita in thousands	–1.18**	–2.00**
National individualism index (Hofstede, 1980)	–0.14**	–0.07*
Chi-square statistic	32.67***	26.03***
N	66	66

* Significant at the 0.10 level; ** Significant at the 0.05 level; *** Significant at the 0.01 level.
[a] The average annual growth rate is calculated for the most recent five years, as follows: average annual growth rate percent in the most recent five years = [((Y2 – Y1)/Y1]*100)/5 where Y2 is the the value of variable Y at the beginning of the decade (that is, 1990, 1980 and 1970), and Y1 is the value of Y five years earlier (i.e. 1985, 1975 and 1965 respectively).
Sources: *OECD* (1995a; Hofstede, 1980) and *Human Development Report* (various issues).

for nations at multiple times.[20] The goal of these equations is to explore the effects of cultural factors such as individualism upon the governmental decision of health spending and social coverage. Each column lists a separate equation, with the slopes associated with GDP per capita and the national level of individualism. The first equation (column 1 of Table 3) explaining the variance in the amount of public resources spent on health reveals that there is a significant negative effect of the level of individualism on the growth rate of per capita public expenditure on health (at the $p < .05$ level, one-tailed test). Thus, collectivist societies tend to have a higher annual growth rate of public expenditure than individualist ones.

By the same token, since collectivist countries place a greater value on the collective welfare, they are hypothesized to offer a higher social protection against health expenses than individualist countries. The regression equations treat average annual growth rates of social protection against in-patient care costs as the dependent variable. Table 3 (column 2) shows that the coefficient of the individualism index on the growth rate of the proportion of population eligible for care benefits is negative and significant (at the $p < .05$ level, one-tailed test). This supports Hypothesis 3.2 that collectivist countries tend to provide a higher level of social coverage against medical costs over time.

In summary, more individualist societies spend less in public health care and provide a lower level of social coverage against medical costs than collectivist societies, especially in recent years.

Convergence in Population Health

This section examines the convergence thesis regarding population health. Table 4 presents the trend for all available measures of health for certain years over the 1960–90 period. Evidence here supports an important convergence process in the improvement of population health (Hypothesis 4). The coefficient of variation for life expectancy at birth was 3.2 percent in 1960 and 1.5 percent in 1990; this averages out to a 1.8 percent decrease per year. In the case of female life expectancy at birth, the mean rate of decrease is 1.6 percent; 1.7 in the case of male life expectancy at birth. These results offer strong support for the convergence theory.

Data for mortality rates also support the convergence thesis. In the case of infant mortality rate, the coefficient of variation decreases from 47.2 percent in 1960 to 18.5 percent in 1990, which averages out to a 2 percent decrease per year. In the case of crude death rate, the coefficient of variation decreases from 17.9 percent to 16.7 percent, which averages out to a 0.2 percent decrease per year. The trend is not strong, but in the direction of convergence.

The coefficients of variation for the percentage of population 65 years old and over, and national mean/median age also decrease over the

Table 4 *Trends in National Population Health Status (1960–90)*

Dimension	Indicator		1960	1965	1970	1975	1980	1985	1990	Annual Rate of Change in the Coefficient of Variation (%)
Life expectancy	Overall	Mean	70.21				73.71		76.21	
		CV (%)	3.21				1.61		1.51	–1.77
	Females at birth	Mean	73.00		75.00		77.63		79.54	
		CV (%)	2.75		2.1		1.65		1.44	–1.59
	Females at 40	Mean	36.69		37.61		39.49		40.90	
		CV (%)	2.44		2.61		3.00		2.74	0.41
	Females at 60	Mean	19.10		19.90		21.46		22.68	
		CV (%)	3.76		4.54		4.78		4.25	0.43
	Males at birth	Mean	67.97		68.83		71.01		73.16	
		CV (%)	3.66		2.60		2.21		1.81	–1.68
	Males at 40	Mean	32.69		32.67		33.94		35.56	
		CV (%)	4.52		4.37		3.66		3.27	–0.92
	Males at 60	Mean	16.27		16.22		17.17		18.33	
		CV (%)	6.63		6.50		5.87		4.85	–0.89
Mortality	Infant mortality	Mean	2.93	2.42	2.03	1.60	1.15	0.92	0.75	
	(as % of live births)	CV (%)	47.22	46.27	47.04	41.52	34.86	30.04	18.56	–2.02
	Death crude rate	Mean	9.59	9.64	9.71	9.51	9.41	9.46	9.37	
	(per 1000 population)	CV (%)	17.91	17.48	17.44	18.85	18.27	17.69	16.79	–0.21
Demography	Population 65 years old	Mean	9.56	10.13	10.94	11.69	12.45	12.83	13.54	
	and over (as % of total population)	CV (%)	18.87	19.41	19.32	19.47	19.03	16.09	15.39	–0.61
	Mean age	Mean	31.27	31.53	32.59	33.43	34.56	35.61	36.51	
		CV (%)	9.41	7.54	7.21	6.06	6.90	6.33	5.58	–1.36
	Median age	Mean	29.24	28.56	30.03	30.69	31.84	33.57	34.60	
		CV (%)	14.53	17.03	9.89	9.90	9.47	9.26	8.75	–1.33

Note: CV = Coefficient of variation. The coefficient of variation is the ratio of the standard deviation to the mean, expressed as a percentage.
Source: *OECD* (1995a).

1960–90 period. In the case of mean age, the coefficient drops from 9.4 percent to 5.6 percent in 1990; this averages out to a 1.4 percent decrease per year. Again, support is found for the convergence thesis.

Health, Health Care Systems and Socioeconomic Inequalities

Preliminary multivariate analyses of variance of population health within OECD countries show that higher public protections and higher per capita expenditure on health do not seem to predict national population health.[21] Table 5 reports the GEE estimates of the coefficients obtained for four of the regression models analyzing the panel data of the 22 countries in 1970, 1980 and 1990. Each column lists a separate equation, with the slopes associated with several independent variables.

In column 1, life expectancy at birth is regressed on national health care variables and the level of national development and socioeconomic inequality. Columns 2, 3, and 4 report the regression results for female life expectancy, male life expectancy and infant mortality, one at a time. Not surprisingly, in all models, the level of socioeconomic development as measured by the GDP per capita has a positive and significant effect on the propensity of a country to have healthier populations (at the $p < .05$ level, one-tailed test). None of the models provides strong support for the thesis that higher public expenditure on health improves population health (Hypothesis 5.1). On the contrary, the sign of the coefficients is opposite to the prediction of those 'welfare' theorists who argue that higher public expenditure on health care results in improved population health. One possible explanation for this result is that since OECD countries have a high level of development, additional spending on health does not have much positive effect on the health status of the population since such populations already live relatively longer. Following this line of thought, health economists have stated that greater reductions in mortality rates and improvements in life quality are possible through additional expenditure on formal education rather than through additional expenditure on medical care (Auster et al., 1969; Fuchs, 1979).

The adoption of universal public coverage against in-patient care benefits appears to have an insignificant effect on population health (Hypothesis 5.2). Although the sign of the coefficient is the one predicted by many welfare theorists, all the coefficients are never significant at the $p < .1$ level.

It seems that either the 'health care' variables considered in this study do not adequately capture the benefits of universal and efficient HCSs, or perhaps, HCSs do not necessarily improve the health status of citizens. Moreover, HCSs may even have a negative impact on national health

Table 5 *Multivariate Regression Models of Four Population Health Status Variables on National Health Care Variables and Level of National Development and Socioeconomic Inequality Using GEE Estimation. Pooled Sample of 22 OECD Countries in 1970, 1980 and 1990 (*N = *66).*

	GLS Regression Coefficients of Four Population Health Indicators			
Independent Variables	Life Expectancy At Birth	Female Life Expectancy At Birth	Male Life Expectancy At Birth	Infant Mortality (as % of Live Births)
Constant	69.82***	69.79***	65.45***	4.99***
Lagged GDP per capita in thousands (T – 5)	0.23***	0.50***	0.48***	–0.15***
Lagged per capita public expenditure on health in thousands (T – 5)	–0.07	–3.01**	–2.57*	1.30***
Public protection against in-patient care as % of population covered (T – 5)	0.03	0.06	0.03	–0.04
Household income inequalities (T – 10)[a]	–0.23*	–0.11*	–0.08*	0.08***
Chi-square statistic	239.29***	401.29***	380.63***	300.69***
N	66	66	66	66

* Significant at the 0.10 level; ** Significant at the 0.05 level; *** Significant at the 0.01 level.
[a] As measured by the ratio of the percentage of income received by the richest 20 percent of households to the percentage of income received by the poorest 20 percent of households. It was calculated from the *Human Development Report* (various issues).
Sources: *OECD* (1995a); and *Human Development Report* (various issues).

outcomes unless they are supplemented by other public policies regarding education, housing, etc. National stratification systems do play a significant role in affecting population health. In fact, many scholars writing on developed welfare states agree that changes in the level of social inequality have the greatest impact on population health.[22] My analysis lends support to Hypothesis 6 that public policies adopted in order to reduce socioeconomic inequalities should have a positive effect on the propensity of a country to have a healthier population. The four regression models predict that the higher the levels of socioeconomic inequality, the higher the differentials in health, and therefore the lower overall population health. These negative effects of inequalities on health are always statistically significant (at the $p < .1$ level, one-tailed test).

Discussion

This article presents an institutional account for the process of change in national institutions over time. This change is not necessarily attributable to economic and technological factors. Instead, the adoption of certain models of national organization over time in different types of societies is better predicted by the evolution of world patterns due to the action and discourse emerging from other nation-states, international associations and organizations. This article has examined the evolution of one of the most important national institutions, health care institutions. Studying the organization of health care across countries is of interest because it is not clear to what extent technology and resources need to be mobilized in order to promote health. As predicted by institutionalist arguments, my analysis shows that there is some convergence and divergence of national HCSs over time. There is convergence because nation-state forms, in many specific areas, reflect world models, and change in similar directions despite obvious diversities in local cultures and resources. Thus, the percentage of GDP spent by developed nation-states and the percentage of people covered against medical costs have followed similar patterns, highly influenced by the international trend in the provision of health care. My analysis shows that, as predicted by institutionalist arguments, the general dimensions of national HCSs have tended to develop and change in isomorphic ways (convergence thesis).

At the same time, there is some divergence in terms of how health money is spent and used in different countries. This is because countries tend to accomplish similar institutional arrangements in different ways. Countries have adopted different health policies in selective ways during the 20th century, depending on the problems they were facing as well as internal factors such as degree of individualism, activities of professional groups and other interest groups, and the role of the state.[23] In this respect, I find no evidence of convergence regarding the composition and utilization of national HCSs such as professional activity, hospital facilities and staff, hospital throughputs, and utilization of ambulatory care over time.

The differences in the organization and utilization of national HCSs are associated with national variations in social and cultural variables. The regression analysis suggests that individualism as a cultural factor accounts for some of such differences. Individualist countries spend less on public health than collectivist ones. Collectivist societies cover a higher percentage of population against medical care costs.

The analysis also supports the convergence thesis regarding population health status. Countries are becoming more and more alike with regard to life expectancy, mortality rates and other demographic characteristics. Not only do countries have healthier populations over time, but also

improvements in health are in the direction of convergence despite differences in national HCSs. The correlation between national health resources and population health is indeed weak. Furthermore, this correlation tends to diminish or even disappear over time. Countries characterized by spending a relatively higher amount per capita on health and having universal public coverage against medical costs do not necessarily have healthier populations. In this sense, social variables accounting for both national divergences in health apparatuses and national convergences in health status need to be further explored. It is suggested that the structures of inequalities in the distribution of assets such as income and education, as well as national ascriptive processes play a significant role in shaping national HCSs as well as in affecting population health.

This study has tested some of the arguments that sociological and economic factors affect the propensity of a country to have healthier populations. Support is not found for the thesis that increasing public expenditure on health and equalizing access to medical care have a positive effect on population health status. On the contrary, the sign of the impact is even negative in some models. What really affects national health outcomes is not the way national care systems are organized, but social variables such as the level of socioeconomic inequality. My analysis supports the proposition that public policies adopted to reduce socioeconomic inequalities should increase national health. Moreover, HCSs could even have a negative impact on national health outcomes unless they are supplemented by other social public policies. The point is not that increases in health care make no difference. This empirical study shows that there seems to be a persistent association between social stratification systems and relative health status; and further improvements of population health will not be achieved unless national economic and social policies are directed to decrease occupational and educational inequality.

My examination of empirical evidence for OECD countries suggests the necessity of cross-national and broadly comparative research for a more comprehensive and complete evaluation of national institutions and inequality over time. Social scientists interested in comparative analyses on health need more data on lifestyles, family structures, income and educational differentials that could account for such differences in health across countries. Health should no longer be reduced to the interaction of economic and biological factors; health and its organization are sociological processes.

Notes

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Social Problems Annual Paper Award (1997). I am indebted to Jesús M. de Miguel for his constant guidance and support. I have benefited greatly from the comments and suggestions of Elisa Bienenstock, Roberto Fernández, Mark Granovetter, David Grusky, Hokyu Hwang, William Lorié, John W. Meyer, Francisco Ramirez, Nancy B. Tuma, Kiyoteru Tsutsui, Morris Zelditch and the two *International Sociology* anonymous reviewers. I also wish to thank the members of the Comparative Workshop at Stanford University. The views expressed here are exclusively those of the author.

1. By 'rationality', institutionalists refer to the process by which human activity is increasingly controlled and universally structured around purpose, sense and meaning in order to segregate this activity from the more irrational, chaotic, or corrupt aspects of social life and behavior.
2. I am thankful to an anonymous reviewer for this clarification and suggestion.
3. For examples of this body of research, see: Castles and Mitchell (1992), Ellingsaeter (1998), Esping-Andersen (1990, 1996), Korpi (1989), Moran (1992), O' Connor and Olsen (1998), Olsen (2002), Orloff (1993), Sainsbury (1996) and Swank (2002). This literature also points out that political institutions, party structures and electoral systems either encourage or hinder distinct clusters of norms, values and ultimately behaviors that shape national political debates. These factors encourage changes in welfare state policy in one direction rather than in another.
4. As an anonymous reviewer pointed out, many scholars writing on developed welfare states will agree that changes in the level of social inequality have the greatest impact on population health.
5. The original member countries of the Organization for Economic Co-Operation and Development (OECD) are Austria, Belgium, Canada, Denmark, France, Germany, Greece, Iceland, Ireland, Italy, Luxembourg, the Netherlands, Norway, Portugal, Spain, Sweden, Switzerland, Turkey, the UK and the US (1960). The following countries became members subsequently through accession at the dates indicated hereafter: Japan (1964), Finland (1969), Australia (1971), New Zealand (1973) and Mexico (1994).
6. Due to the limits set by data availability and sample size, the analysis performed here has several limitations which, if overcome, could improve future research. First, questions about the sampling scheme and problems of selection bias are in order. The theoretical propositions regarding national HCSs are more general in their scope and are believed to hold true for all national institutions. However, future research is needed to examine whether these general propositions also operate in developing and newly industrializing countries, as well as other aspects of national institutions. Future analyses of national HCSs should also include some health variables other than life expectancy at birth and mortality rates. More sophisticated performance indicators to capture the variability in population health status (e.g. quality of life) would be of interest to social scientists.
7. One of the advantages of the coefficient of variation is that it adjusts for shifts in the mean. Thus, a 10-point spread is likely to have a different interpretation around a mean of 100 than around a mean of 10.

8. Implicit in this rate is the simplifying assumption that any 10-, 20-, or 30-year period is equivalent to another. Such a statistic was calculated for different length time-spans, and clearly there was some variation in the rate of change from one period to another. However, the trend was quite consistent, in the direction of either convergence or divergence over time.
9. See Meyer et al. (1995).
10. GEE is a variation of the generalized least square method of estimation (GLS). Information on the GLS method of estimation can be found in Greene (1990: Ch.16). Since in this data set there are a large number of panels (i.e 22 countries) relative to three time periods (i.e 1970, 1980 and 1990), the population-averaged panel data model using GEE is better than the standard GLS. The GEE model provides a richer description of the within-group correlation structure for the panels than standard GLS. For a comprehensive introduction to GEE in the estimation of GLS models, see Liang and Zeger (1986). Other articles on various applications of GEE are Zeger et al. (1988) and Liang 1987).
11. A factor analysis showed that almost one-half of the variance in country mean scores in employees' answers to 14 work goals questions could be accounted for by just two factors: the individualism index and the masculinity index. The individualism index is based on the first of these factors, which accounts for 24 percent of the variance in the country mean 'work goals' scores. The individualism index is strongly related to the mean importance attached in a country to 'personal time' (i.e. 'have a job which leaves you sufficient time for your personal or family life') and negatively related to 'training' (i.e. 'have training opportunities – to improve your skills or learn new skills').
12. Hofstede provides an explanation of the general societal norms behind the 'low' and 'high' individualism index manifestations (Hofstede, 1980: 235). A low individualism index implies the following characteristics: (1) in society, people are born into extended families or clans which protect them in exchange for loyalty; (2) 'we' consciousness; (3) collectivity-orientation; (4) identity is based in the social system; (5) emotional dependence of individual on organizations and institutions; (6) emphasis on belonging to an organization or clan; (7) private life invaded by organizations or clans to which one belongs; (8) expertise, order, duty, security provided by organization or clan; (9) friendships predetermined by stable social relationships; but need for prestige within these relationships; and (10) belief in group decisions. By contrast, a high individualism index implies the following: (1) in society, everyone is supposed to take care of themselves and their immediate family; (2) 'I' consciousness; (3) self-orientation; (4) identity is based in the individual; (5) emotional independence of individual from organizations and institutions; (6) emphasis on individual initiative and achievement; leadership ideal; (7) everyone has a right to a private life and opinion; (8) autonomy, variety, pleasure, individual financial security; (9) need for specific friendships; and (10) belief in individual decisions.
13. Recently, data on life expectancy of members of the population in good health have become more available, but cross-national longitudinal data are still too scant to be of use for the present study.
14. See note 2.

15. Total expenditure on health care, as defined in the OECD health data, comprises: (1) household final consumption on medical care and health expenses including goods and services purchased at the consumers' own initiative, such as non-prescription or over-the-counter medicines, and the cost-sharing part of publicly financed or supplied care; (2) governmental health services including schools, those in prisons and the armed forces, as well as specific public programs such as vaccination campaigns, services for minority groups, etc.; (3) investment in clinics and laboratories; (4) administration costs; (5) research and development, excluding outlays by pharmaceutical firms; (6) industrial medicine (often treated as intermediate consumption); and (7) outlays of voluntary organizations, caritative institutions and non-governmental health plans. The public expenditure on health (as measured by the value per capita in current prices in dollars) measures the quantity of total expenditure on health care, as defined in the OECD health data, financed by national public sectors. This measure of public health funding includes expenditure by government-managed social security institutions and compulsory private health insurance schemes.
16. The private–public mix of national HCSs has been at the heart of policy debate during much of the past three decades. A comparative analysis of the efficiency of health systems is impossible without reference to the social protection they offer.
17. Other measures of inequality such as Gini coefficients were available for only one period of time, and therefore could not be used in the present analysis.
18. Life expectancy measures are purely indices based on cross-sectional mortality in a given year and may prove not to be closely related to the actual lengths of life. So there are obviously some limitations in the use of expectation of life in health analyses in general.
19. There has been a substantial history of debate about the OECD data and what lessons can be drawn from it. In particular, critics of this data (as well as UN data) argue that there are major differences in the reporting of health spending and the interpretation of vital statistics among countries. Evidence of convergence in this study also supports an institutionalist account in a different way – it might be that the internalization of health statistics and reporting practices are responsible for the apparent convergence of national health care systems. If so, this is, in itself, evidence of convergence.
20. See note 7.
21. The results of these analyses are available upon request. Hypotheses 5.1 and 5.2 were also tested by using the multidimensional analysis of variance (MANOVA) where indicators of population health are the dependent variables and the level of development of the health care system is the exploratory factor. The MANOVA test is appropriate in this case since the method requires a set of interrelated continuous dependent variables and one factor or grouping variable (Finn, 1974). In one group of countries, I included those OECD countries with relatively high per capita public expenditure on health and whose social protection is close to universal during the 1960–90 period: Austria, Denmark, Finland, Iceland, Italy, Norway, Sweden and Switzerland. Consequently, the other group included the rest of OECD countries that either

have a relatively low per capita public expenditure on health or whose social coverage was not universal during the 1960–90 period. There were six dependent variables: life expectancy at birth, female/male life expectancy, population 65 years old and over, mean age, infant mortality and crude death rate. The multivariate *F*-test (and the univariate *F*-tests) indicates that there is no reason to reject the null hypothesis that all population health means are equal across the two groups of countries. In other words, population health in mainly northern European countries with expensive policies on public health is not significantly different from population health in countries with a much cheaper public structure of health care. This holds true for different periods of time.

22. In general, most of these quantitative and qualitative studies suggest that public expenditure on education, child care and employment programs tend to reduce socioeconomic inequality, and are consequently strongly correlated to improvements in the general health of people. I thank an anonymous reviewer for pointing this out.
23. Following institutional arguments, it is believed that the propositions considered in this article hold for Third World countries as much as for the developed OECD countries. Even though such countries are characterized by a good deal of traditional social organization, extreme social inequality and relative lack of autonomy due to their subordination to the developed countries, they are nonetheless still engaged in the same progress-oriented societal framework as their richer counterparts.

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