Comment: Health Systems' Effects on Health Status—Financing vs the Organization of Services

In the US health policy community, interest in the experiences of other countries is confined largely to issues related to how health systems are financed. In general, the assumption is made that it is the difference in methods of financing health systems that explains the large differences in expenditures on health-related care. These analyses hardly address the impact of different organizational characteristics on differences in outcomes of care. This situation is all the more curious, given the diversity of organizational arrangements and the consequent possibilities for exploring their relationship to improvements in the health of the populations.

As US attention shifts more to the outcomes rather than the processes of health services, cross-national research that explicitly addresses mortality, morbidity, and functional status is beginning to emerge. Such endeavors are represented by a study published in this issue of the Journal that analyzes the relationship between certain aspects of health systems and three indicators of outcome. Elola and colleagues postulated that countries with national health systems would be superior in their achievements to countries with national health insurance.[1] National health systems, such as those in Great Britain, the Scandinavian countries, Spain, Ireland, and Greece, are financed by general taxation and are publicly managed. National health insurance systems (called social security systems by the authors) are financed through mandatory payroll premiums and are privately managed. Such systems are found in central European countries such as Germany, France, and Switzerland.

Overall, the countries did not differ in infant mortality, potential years of life lost, or life expectancy. However, after controlling for the significant effect of gross national product and health care expenditures, which are higher in countries with national health insurance systems, infant mortality (but not the two other measures of health status) was found to be lower in countries with national health systems. Furthermore, a greater reduction in infant mortality in national health systems is associated with each unit increase in health expenditures than is the case in countries with national health insurance systems.

Why are the significant findings limited to infant mortality and not valid also for life expectancy and years of potential life lost? Could it be that the model followed by the authors is incomplete, or is the effect of different approaches to financing really limited to only certain manifestations of health? What is it about the ways in which services are financed that influences their effectiveness? Prior research suggests that regionalization of prenatal services and appropriate access to neonatal intensive care have a considerable impact on infant mortality.[2] It seems reasonable to postulate that services would be more regionally allocated in national health systems than in national health insurance systems because the former is more likely to involve conscious planning for the distribution of resources. Mortality at other ages may not be as sensitive to this aspect of the organization of services.

However, it may be that the different mechanisms of financing, as represented by national health systems vs national health insurance systems, are associated with system characteristics which, when explored, would have a more extensive influence on health. To explore this possibility, I contrasted the findings of this study of financing mechanisms with another comparative study[3,4] of the relationship between characteristics of the organization (rather than financing) of services. In the latter study, 11 countries were ranked on 14 indicators of health: infant mortality and its two components (neonatal and postneonatal mortality); life expectancy at age one (which removes the effect of infant mortality), at age 20 (which removes the effect of child mortality); at age 65, and at age 80, each for males and females separately; years of potential life lost; age-adjusted death rate, and low birthweight ratio. In addition, 16 indicators involving deaths from injuries and, separately, deaths from medical causes in four different child age groups for males and females separately, and immunization rates in the preschool period for three communicable diseases were available for most of the countries. Categorization of these countries according to the criteria of Elola et al.[1] results in six countries with national health insurance systems (Australia, Belgium, Canada, Germany, the Netherlands, and the United States) and five with national health systems (Denmark, Finland, Spain, Sweden, and the United Kingdom). When the health indicators in the two groups are ranked, countries with national health insurance for the infant mortality indicators ranked lower (average rank 6.88) than countries with national health systems (average rank 4.95). For the most part, each of the countries with national health systems ranked higher (had lower infant mortality rates) than countries with national health insurance systems. In contrast, the countries did not differ in the ranking of indicators at other ages (6.02 for countries with national health insurance systems vs 6.11 for countries with national health systems), thus corroborating the findings of Elola et al. that the benefit from national health insurance seems to be confined to infant mortality.

However, if the 11 countries are recategorized according to the strength of their primary care infrastructure, using 11 different characteristics[3] rather than looking at how they are financed, significant differences appear for all of the indicators, as well as for other outcome indicators including overall costs, satisfaction with care, and medication use.[4] Countries in the bottom third of the rankings for adequacy of a primary care orientation (Belgium, Germany, United States) have much lower average rankings on the health indicators (8.17 for infant mortality and 8.55 for the other indicators) than countries in the top third (5.00 and 6.74, respectively).[3,4] That is, when the countries are characterized according to their emphasis on providing a strong infrastructure of primary care services, countries that do better in this regard achieve better health levels for a variety of health indicators across the age span. Although there is a relationship between a focus on primary care and mode of financing services (countries with a strong primary care focus are more likely to be national health systems than national health insurance systems), there are exceptions: the Netherlands is a prime example because it has national health insurance financing but an excellent primary care system.

Increased attention to the importance of primary care in health services reform has resulted in studies which, for

Editor's Note. See related article by Elola et al. (p 1397) in this issue.

the first time, include primary care as a variable. All of them show primary care to be the most salient variable, even more important than health insurance itself.[5–7] That is, although financing influences access to primary care services, it is the organization of services around a primary care infrastructure that has been shown to be associated with many aspects of better health. Thus, it appears that the mode of financing services (i.e., national health insurance vs a national health system) affects health status *indirectly* through the way in which services are organized, rather than directly.

Despite the apparent importance of primary care as a major contribution to improved health status, it is useful to remember that primary care may be only a marker for social systems that focus on achieving equity in the distribution of health and social services in general. Thus, for example, countries with more equitable distribution of wealth[8] are those countries with better primary care systems. Also, countries with less disparity in educational achievement[9] are those countries with better primary care systems.

Subsequent research is needed to elucidate the mechanism by which primary care exerts its effect. Is it primarily by facilitating ingress to the health care system by virtue of assuring a consistent point of first contact? In the United States, a recent study has shown that use of a designated primary care source as the point of first contact for illnesses is associated with fewer visits and lower costs of care.[10] Or is the beneficial impact of primary care associated with its other cardinal features: longitudinality, comprehensiveness, and integration? A host of research questions might form the basis for subsequent research. To what extent does a person-focused relationship between practitioners and patients (longitudinality) enhance the effectiveness of care? At least one study[11] showed that a period of 2 years is necessary for such a relationship to be established. This suggests that managed care organizations in the United States (which are not necessarily oriented towards the goals or attributes of primary care because they often require individuals to shift their source of care when their insurance arrangements change) are not likely to achieve the benefits of primary care. Does an enhanced benefit package that covers a broader range of services within primary care produce better health outcomes? Or is the effect primarily a result of the primary care function that facilitates better integration between primary care services and other services? As information about health services becomes available from newly developing information technologies, it will be increasingly possible to draw the linkages between various structural aspects of care (including both financial as well as organizational aspects), the processes of care that they encourage, and the resulting impacts on various aspects of health status. With the imperative towards some type of health care reform, it is important to keep critical issues in the forefront. Assuring financial access to services is essential, but it is the organizational arrangements that facilitate more effective receipt of primary care services and, through them, needed specialty services, that will determine how well the United States does in relationship to its peers throughout the world. □

Barbara Starfield
School of Hygiene and Public Health
The Johns Hopkins University
Baltimore, Md

References

1. Elola J, Daponte A, Navarro V. Health indicators and the organization of health care systems in Western Europe. *Am J Public Health.* 1995;85:1397–1401.
2. Shapiro S, McCormick M, Starfield B, Crowley B. Changes in infant morbidity associated with decreases in neonatal mortality. *Pediatrics.* 1983;72:408–415.
3. Starfield B. *Primary Care: Concept, Evaluation, and Policy.* New York, NY: Oxford University Press; 1992:chap 15.
4. Starfield B. Primary care: is it essential? *Lancet.* 1994;344:1129–1133.
5. Farmer F, Stokes CS, Fiser R, Papini D. Poverty, primary care and age-specific mortality. *J Rural Health.* 1991;7:153–169.
6. Shi L. Primary care, specialty care, and life chances. *Int J Health Serv.* 1994;24:431–458.
7. Shea S, Misra D, Ehrlich M, Field L, Francis C. Predisposing factors for severe, uncontrolled hypertension in an inner-city minority population. *N Engl J Med.* 1992; 327:776–781.
8. Wilkinson RG. Income distribution and mortality: a 'natural' experiment. *Soc Health Illness.* 1990;12:391–412.
9. Kunst A, Mackenbach J. The size of mortality differences associated with educational level in nine industrialized countries. *Am J Public Health.* 1994;84:932–937.
10. Forrest C. *Opening the Gate to Primary Care: How First Contact Care Influences Costs of Ambulatory Episodes of Care.* Baltimore, Md: The Johns Hopkins University; 1995. Thesis.
11. Hjortdahl P. Continuity of care: general practitioners' knowledge about and sense of responsibility toward their patients. *Fam Pract.* 1992;9:3–8.