

## Public Health and Primary Care: <sup>3</sup> A Framework for Proposed Linkages

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### Introduction

Rapid change within the US health system is creating an opportunity to reassess and reorient the relationships between the public and private sectors. The medical care system, operating largely under private aegis, has provided services that are directed at diagnosis and management of the ailments of people who seek the services; public health agencies have undertaken this role as a provider of last resort for the socially disadvantaged. On the other hand, public health has assumed the primary responsibility for organizing programs directed at environmental interventions. Clinical preventive services have been divided between the two, largely through opportunity rather than by design. The advent of new forms of organization in the personal health services sector is creating strains in the already tenuous linkages between the two sectors. Organizations such as "integrated health systems," with their professed orientation toward primary care, are now assuming responsibility for the care of populations, heretofore the defining characteristic of the public health focus.

### Primary Care and Health

The long history of unstable coexistence between public health and private medicine has not been conducive to maximizing the health of the US population. Although many tenaciously hold the view that the United States has the best health care system in the world (if only its high costs could be contained), evidence on outcomes of care suggests otherwise. Furthermore, the disadvantage suffered by our population falls most heavily on infants and children. Consider, for example, data obtained from various sources, in comparable ways, in 11 Western indus-

trialized nations. Countries oriented toward a strong primary care infrastructure achieve better health outcomes, as assessed by a variety of measures. These include statistics related to mortality, morbidity (such as low-birthweight ratios), and preventive health care (such as immunization rates). The disparity in health outcomes between countries with strong primary care and other countries is greatest in the youngest age group and decreases with increasing age. In the elderly, the differences disappear, the United States achieving the highest or next highest rank for life expectancy at the age of 80 years.<sup>1,2</sup>

Two points about these data should be noted. First, countries with better primary care tend to be countries that strive toward equity in distribution of health services and toward more equitable income distributions.<sup>3</sup> Apparently, a commitment to social equity goes along with a commitment to equity in the distribution of health care resources. Second, it is not the number of primary care physicians, or even the ratio of primary care physicians to specialists, that accounts for the differential effects of the health services across these countries. Rather, the differences are a result of how the resources are distributed, whether or not they are organized to achieve the functions of primary care, and whether they clearly specify the roles and interrelationships between primary care and specialist physicians.<sup>4</sup>

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**TABLE 1—Health Status of Infants and Children in Western Industrialized Nations: Relative Rank of United States and France, Late 1980s through Early 1990s**

	Rank	
	US	France
<b>Infant indicators<sup>a</sup> (13 countries)</b>		
Low birth weight	13	6
Neonatal mortality	13	1
Postneonatal mortality	10	12
Infant mortality	13	9
<b>Child indicators</b>		
Life expectancy at 1 y (13 countries) <sup>b</sup>		
Female	11	9
Male	7.5	5
Child/youth deaths: injuries (8 countries) <sup>c</sup>		
1–4 y		
Female	7	4
Male	7	5
5–9 y		
Female	7.5	4.5
Male	7	4
10–14 y		
Female	7	6
Male	8	4
15–19 y		
Female	8	5
Male	7	5
Child/youth deaths: medical (8 countries) <sup>c</sup>		
1–4 y		
Female	4	5
Male	7	5
5–9 y		
Female	5	6
Male	4	7
10–14 y		
Female	5	7
Male	4	5
15–19 y		
Female	4	8
Male	3	8
Immunizations in preschool period (11 countries) <sup>d</sup>		
DPT	11	2
Measles	9	10
Polio	11	4

Note. DPT = Diphtheria-pertussis-tetanus.  
<sup>a</sup>Source: reference 23.  
<sup>b</sup>Source: reference 24.  
<sup>c</sup>Source: reference 25.  
<sup>d</sup>Source: reference 26.

These data raise questions about the extent to which the special health disadvantage of infants and children in the United States may be reversed or mitigated by policies aimed at explicit linkages

**TABLE 2—Health Status of Adults in 13 Western Industrialized Nations: Relative Rank of United States and France, Late 1980s through Early 1990s**

	Rank	
	US	France
Life expectancy at 20 y		
Female	11	5
Male	8	9
Life expectancy at 65 y		
Female	6.5	1
Male	5	1
Years of person-life lost <sup>b</sup>	12	11
Life expectancy at 80 y <sup>c</sup>		
Female	2	3
Male	1.5	3.5
Age-adjusted death rate <sup>b</sup>	9	7

<sup>a</sup>Source: reference 23.  
<sup>b</sup>Source: reference 27.  
<sup>c</sup>Source: reference 28.

between public health and private health systems. In this regard, the maternal and child health services system in France may be instructive. France is very similar to the United States in the thrust of its health care system. Although it has the notable feature of universal financial access to health services, its health system is not well directed at primary care,<sup>5-9</sup> at least in comparison with countries such as Denmark, the Netherlands, Finland, Sweden, Spain, and the United Kingdom. In this regard, it more resembles the United States, Australia, Germany, and Belgium. It does, however, have a superb program, Protection Maternelle et Infantile, for attention to pregnant women and children. This program, which is supported by the Ministry of Health, relies on private-sector medicine linked to and overlapped by public services strongly oriented toward epidemiologic concepts, a decentralized structure of community surveillance and risk assessment, close ties to child care and education, and parent education and outreach.<sup>10</sup> The French mortality and morbidity statistics for children are generally better than those of the United States, perhaps reflecting the influences of this supplementary system (Table 1). As can be seen in Table 1, France, in comparisons with other Western industrialized nations (including Norway and the countries mentioned earlier), ranks 1st (best) in terms of neonatal mortality, 6th in terms of low-birthweight

ratio, 9th in terms of total infant mortality, and 12th in terms of postneonatal mortality (as compared with the US ranks of 13th, 13th, 10th, and 13th, respectively). In terms of indicators after infancy, it ranks 9th and 5th, respectively, for female and male life expectancy at 1 year of age (as compared with 11th and 7.5th in the United States). In terms of child and youth deaths due to injuries in four separate female and male age groups, it ranks 4th to 6th (out of 8 countries with available data), as compared with the US ranking of 7th or 8th. In terms of deaths due to medical causes in eight different age-gender groups, however, it ranks 5th to 8th among the 8 countries, as compared with 3rd to 7th in the United States. Immunization rates in the preschool period, with data available for 11 of the countries, show France ranking near the top (2nd) for diphtheria-pertussis-tetanus (DPT), 4th for polio, and 10th for measles (as compared with the US ranks of 9th for DPT and 11th for the others). Both countries rank in the bottom half of the distribution for most of the illness and death indicators, with only neonatal mortality and some immunizations standing out as an achievement in France.

It thus appears that the Protection Maternelle et Infantile program is able to improve indicators of pregnancy and preventive health services but is not able to overcome the deficiencies of a highly technological, specialty-oriented health system after the neonatal period. France, like the United States, ranks near the top for indicators in old age (Table 2). In France, the United States, and other countries with poor primary care infrastructures, infant and child health suffer the most. The health-compromising deficiencies of an inadequate health system are unlikely to be reversed by even an excellent maternal and child health subsystem. In contrast, a health system organized on a strong primary care infrastructure and a strong public health sector, each with carefully defined complementary roles, appears necessary to achieve optimum health levels.

### Challenges of Managed Care

Although both the primary care and public health sectors have declined in importance in the United States over the past century, de facto health care reform in the form of managed care is posing challenges to and providing opportunities concerning the conventional patterns of interaction of the two sectors. It could, in fact, provide the basis for attempts to strengthen both primary care and public health.

Managed care is not a strategy designed to manage care in the sense of primary care; it is a strategy designed to reduce the financial burden of care on third party payers by managing use of health resources by both patients and providers. Managed care, as currently constituted, does not fulfill the criteria for primary care. In contrast to the prior generation of integrated health systems, such as the Group Health Cooperative of Puget Sound, the Health Insurance Plan of New York, the Kaiser-Permanente organization of California, and, later, the Harvard Community Health Plan, most of the newer organizations do not hold to a standard of accountability other than accountability to shareholders. Current standards of accountability consist primarily of standard marketing techniques to assess consumer satisfaction and a spare set of indicators of quality of care, most of them involving secondary prevention activities.<sup>11</sup> Perceived satisfaction is inadequate as a measure of quality in the absence of information on how well health needs are met; there is no evidence that satisfaction with the amenities of care influences health outcomes. Absent from the marketing approach to accountability is attention to the effectiveness of health services in meeting health needs as experienced by consumers, rather than as defined by managers.

As managed care expands to include greater proportions of the population, the challenge to hold it accountable to the standards of primary care will grow. This includes assurance of adequate access when people experience problems, facilitation of long-term relationships between people and a particular professional or team of professionals, comprehensiveness of care as assessed by the availability and provision of care to meet community needs, and coordination of all of the various aspects of care beyond primary care that are needed from time to time.

In managed care, barriers (e.g., high levels of cost sharing and various types of hurdles that must be surmounted to obtain an appointment) are often placed between people and their primary care provider to discourage use of services. This is the case despite evidence that the denied or discouraged services involve needed care as well as discretionary care.<sup>12</sup> Furthermore, most of the newer generation of managed care organizations—in contrast to the older ones—are not designed to provide long-term relationships between people and their practitioners. The employer or insurer decides on the range of options for enrollment, which can change, sometimes frequently.

Target	type of function*		
	Primary	Secondary	Tertiary
Generalized Populations	Environmental Planning	Environmental Monitoring & Product Control	Public Advocacy Community Mobilization (legal & social remedy)
Individuals	Health Education Campaigns Immunizations	PKU Screening Breast Cancer Screening	Information systems:** data standardization, collection, analysis & dissemination
Selective	Genetic Engineering***	Blood Lead Screening	Outreach/access e.g. home visiting
Indicated	Communicable disease control Prophylactic antibiotics Practice guidelines	Frequent follow-up for disease recurrence	Address problems: Quality assessment of clinical services

\*Primary: intervention to prevent a problem from occurring; secondary: intervention at a stage before problem is manifested; tertiary: remediation to reverse manifestations of problem.  
 \*\*Activities involve monitoring health statistics and surveys of health status, access, and people's experiences with services.  
 \*\*\*Should such an effort ever be considered ethical or practical.

FIGURE 1—Examples of interventions, by type of function and target group.

A recent Commonwealth Fund survey showed that more than half of those enrolled in managed care plans had changed their affiliation with a provider or group of providers within the previous 3 years, three quarters of them involuntarily. Employment-linked coverage was the primary cause of plan changes; 61% of those who changed involuntarily did so either because of an employer's decision to change options or because of a job change.<sup>13</sup> Such a situation precludes attaining longitudinality of care, the feature of primary care that provides the benefits of a long-term relationship with a health professional. Furthermore, there is nothing inherent in the concept of managed care that ensures a package of benefits designed to meet all of the health needs of the enrolled population. In fact, managed care is increasingly splintering care into managed care entities oriented toward diseases rather than people. The first inroad into this splintering was managed mental health; the approach is rapidly spreading to other disease entities wherein both children and adults are shunted off into disease-oriented care, thus depriving them of the benefits of good primary care backed up by an adequate system of consultation and referral. A 75-year history of increasing specialty orientation and decreasing patient and community orientation may continue and even worsen under the guise of supposedly more effective "case management"; even the

rhetoric about primary care is likely to disappear in the interest of managing costs and protecting specialism. Coordination of care is also not ensured by managed care arrangements, many of which are explicitly nonintegrating (e.g., preferred provider organizations and point of service options).

Virtually all such threats to primary care are in sharp contrast to true primary care as practiced in many other nations: few barriers to access in the form of copayments, free choice of primary care provider fostering long-term relationships, and much better integration of services through explicit cooperation and collaboration of public health, primary care, and specialty services.

Managed care also poses a threat to the conventional roles of public health. If the focus of managed care is on enrolled populations and on prevention (as a cost-saving strategy), both of which have traditionally been the focus of public health, what is the need for a public health sector? A framework that considers the various components of health services, as well as the targets and purposes of such services, may be helpful in addressing this issue.

### Types of Health Services Interventions

Figure 1 describes the major types of health care activities and their targets. On

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Target	type of function*		
	Primary	Secondary	Tertiary
Generalized Populations	PH	PH	PH
Individuals	PH/CM	PH/CM	PH/CM
Selective	?	PH/CM	PH/CM
Indicated	PH/CM	PH/CM	CM

*Note.* PH = public health; CM = clinical medical care.  
 \*Primary: intervention to prevent a problem from occurring; secondary: intervention at a stage before problem is manifested; tertiary: remediation to reverse manifestations of problem.

**FIGURE 2—Locus of responsibility for interventions, by type of function and target group.**

one axis are the types, divided into three categories of prevention: primary, secondary, and tertiary. Primary prevention is prevention of the occurrence of pathology; secondary prevention is detection of pathology before the occurrence of symptoms. Tertiary prevention is avoidance of progression of pathology or reversal of its effects, and such prevention is therefore essentially good illness management. These activities may be directed at various segments of the population. Gordon stratified the possibilities into generalized, selective, and indicated.<sup>14</sup> "Generalized" implies that the entire population (either the population as an entity or separate individuals within the population) is targeted. "Selective" implies a focus on subgroups at high risk; "indicated" implies individuals at high risk. Figure 1 provides examples of health services activities within each of the 12 cells. Figure 2 indicates the locus of responsibility for the activity: public health or clinical medicine. Interventions in the top row of Figure 1, which are directed at entire populations regardless of whether the interventions are primary, secondary, or tertiary, are likely to fall largely within the province of public health. It is unlikely that health services entities in the clinical medicine sector would assume primary responsibility for all or most activities concerning environmental planning, environmental monitoring, and product control or for social interventions or legal remedies to address threats to the health of the population. The cells at the bottom right, concerning interventions motivated by indi-

cations in individuals (either of the secondary or tertiary type), are classical personal health services interventions that are most likely to be offered primarily by organizations in the clinical medicine sector. However, public health often plays a role in secondary prevention at the individual level (e.g., case detection in contacts of individuals with communicable diseases). Public health also plays a direct role in management of many diseases with which the private sector has little experience and competence. Conditions such as many sexually transmitted diseases and a considerable proportion of substance abuse problems fall in this category.

Services in the second row of Figure 1, which are directed at individuals on a population level, could fall in either the public or private sphere. Either public health agencies or clinical facilities could take responsibility for organizing health education campaigns or immunization drives (both primary prevention activities), screening programs (secondary prevention), or health surveys to document unmet needs (tertiary prevention), even though the ultimate target may be the individual.

Interventions in the third row, which are directed at subpopulations at special risk, could also fall in either sphere. Consideration of the locus of responsibility for genetic engineering interventions (primary prevention) is a potential challenge for the distant future if the benefits of research and development ever translate to practical interventions. Screening for early clinical pathology (secondary

prevention) that is concentrated in particular population subgroups could be either a public health or a clinical medicine responsibility; controversy over the appropriateness of clinical preventive guidelines for lead poisoning in various population subgroups suggests that there is considerable room for debate about the appropriate aegis.<sup>15</sup> Responsibility for outreach and special access to services for health-compromised subpopulations might also accrue either to public health agencies or clinical medicine services organizations. Currently, responsibility falls primarily on the public health sector, especially when the clinical problem (e.g., sexually transmitted diseases, tuberculosis, and other health problems associated with social deprivation) is concentrated in members of a population group shunned by conventional health services. In the future, contracting by health facilities with public health nurses for home visiting in particular geographic areas with high concentrations of health problems might provide a more effective mechanism for coordinating services.

At the extreme lower left-hand corner of Figure 1 are interventions aimed at individuals for the purpose of primary prevention in others. Many of these activities, such as exclusion of infected individuals from public places (such as schools), have traditionally been the responsibility of the public health sector. Others, such as provision of prophylactic antibiotics to contacts of individual patients, are sometimes in one domain and sometimes in the other.

Thus, for at least 7 of the 12 cells in the matrix, the locus of responsibility could be either public health or clinical medicine or a collaboration between the two. The advent of managed care, with its stated intent to care for populations, may lay increasing claim to activities in many of these as well as other cells, thus further weakening the public health role. On the other hand, public health is likely to have an enhanced monitoring function, consistent with its role as an agent for assessment, policy development, and assurance.<sup>16</sup> Ensuring the accountability of managed care requires systems to document the adequacy of such care in meeting health needs. Some states are already experimenting with ways to do this. For example, at least two states have begun to monitor physician practices, particularly adherence to guidelines.<sup>17</sup> Maintenance of vital statistics data and conduct of surveys have always been part of the public health role; the expansion of such activities

into monitoring of medical care services is a natural extension of this role.

Public health professionals in general, and maternal and child health professionals in particular, have a wealth of expertise in community orientation that can be expanded into new roles to the benefit of the community. Apart from its monitoring role, the maternal and child health profession could contract with managed care entities to offer services that are more efficiently provided by the public health sector (e.g., community immunization and other preventive health campaigns). An Institute of Medicine report included, within the assurance function, a role for public health agencies in either "encouraging (necessary) actions by other entities (private or public sector), or by providing services directly."<sup>16</sup> There are models of effective collaboration: the Group Health Cooperative of Puget Sound has successfully worked with the public sector in these types of activities.<sup>18</sup> Other services traditionally in the public health domain that might be contracted are home visiting services for the homebound and case management services for patients requiring coordinated community resources for their clinical care. Since managed care is not likely to assume sole responsibility for services that do not require intervention at the individual level (see the top row of Figure 1), public health's role needs to be consolidated and strengthened by support from managed care, which stands to gain financially by enrolling populations made healthier by their environment.

Public health should also be the guarantor of equity. Public health professionals are naturally leaders in developing mechanisms to assess equity of services provided by community providers, whether they are managed care providers or not. To do this, states and localities will need tools of measurement. Some states are already conducting household surveys to ascertain functional status, health behaviors, and use.<sup>19</sup> New tools for assessing the adequacy of primary care received by communities and populations are being developed that specifically address the cardinal features of primary care: first contact access, longitudinality, comprehensiveness, and coordination, as well as the associated features of community orientation, cultural sensitivity, and family-centeredness.<sup>20</sup> The development of tools to assess the health status of children and youth has lagged behind the development of such tools for adults,<sup>21</sup> but recently the gap has begun to close. For

example, we now have a validated and reliable tool for health status measurement of adolescents to document needs and to track changes over time and in response to interventions.<sup>22</sup>

Better tools of measurement, more consistent approaches to obtaining and analyzing data, and more concerted efforts in terms of placing the data in a health system context will be important in our effort to meet the critical challenge of ensuring the accountability of managed care. New paradigms guiding relationships among public and personal health services will eventually take hold. With clear goals and a clear sense of a mission in a changing health system, we might yet, in time, create a much better system than we now have. □

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