PEDIATRICS®
OFFICIAL JOURNAL OF THE AMERICAN ACADEMY OF PEDIATRICS

The Medical Home, Access to Care, and Insurance: A Review of Evidence

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Pediatrics 2004;113;1493-1498
DOI: 10.1542/peds.113.5.S1.1493

The Medical Home, Access to Care, and Insurance: A Review of Evidence

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ABSTRACT. *Objective.* **To review the extent to which the literature supports the position that a medical home is important and to review the extent to which insurance is related to having a medical home.**

Methods. **A review of literature concerning the benefits of a medical home on effectiveness, costs, and equity (reducing disparities) was conducted.**

Results. **International and within-nation studies indicate that a relationship with a medical home is associated with better health, on both the individual and population levels, with lower overall costs of care and with reductions in disparities in health between socially disadvantaged subpopulations and more socially advantaged populations. Although important in facilitating use overall, insurance does not guarantee a medical home.**

Conclusions. **A medical home, with its 4 key features, provides better effectiveness as well as more efficient and more equitable care to individuals and populations. A concerted attempt to provide a means of universal financial access as well as a medical home should be of high priority for the United States.** *Pediatrics* **2004;113: 1493–1498;** ***medical home, primary care, access, utilization, insurance.***

ABBREVIATIONS. CHC, community health center; HMO, health maintenance organization.

Almost everyone assumes that health insurance will solve most of the problems concerning access to services and that it should greatly reduce or eliminate disparities in services between more and less advantaged children. In fact, this notion is so ingrained that insurance has come to signify "access" to health services, despite a large literature that documents other aspects of access. According to Penchansky and Fox,[1] financial access is only one of several factors that enable access to health services. Insurance is an important enabler to the use of health services, but its presence is hardly a guarantee of appropriate use or receipt of high-quality services.

This article starts with the assumption that the most appropriate goal of a health services system is to provide effective, efficient, and equitable health services to the population and population subgroups. It reviews the extent to which having a "medical home" (or "regular source of care") is important and documents the extent to which lack of insurance and other factors contribute to not having a medical home. The literature review focuses on studies conducted in >1 facility or geographic area (to enhance the likelihood of generalizability) and covers studies done since 1990, because the vast majority of relevant studies were done since then.

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PEDIATRICS (ISSN 0031 4005).

IMPORTANCE OF A MEDICAL HOME

Evidence of the importance of a source of primary care, sometimes known as the "medical home," is rapidly accumulating. Although a medical home might theoretically exist in the form of a relationship with a specialist, the criteria for a source of primary care[2] closely resemble the characteristics of primary care as specified in seminal reports.[3–5] Furthermore, there is evidence that specialty services, even when provided in the community rather than in hospitals, are much less likely to meet requirements for adequate primary care than are services provided by family physicians, general internists, or general pediatricians.[6]

A substantial literature documents the contributions of each of the characteristics of primary care: accessibility for first-contact care for each new problem or health need, long-term person-focused care ("longitudinality"), comprehensiveness of care in the sense that care is provided for all health needs except those that are too uncommon for the primary care practitioner to maintain competence in dealing with them, and coordination of care in instances in which patients do have to go elsewhere. (Family orientation, community orientation, and cultural competence are also sometimes considered as important to primary care, but achieving them generally follows from high achievement of the above 4 basic features.) The evidence for the benefits of these features has been systematically reviewed.[7]

A more relevant issue for health systems, however, is whether these features of primary care must be present together in a medical home rather than separate by a combination of different sources of care. That is, is there an advantage of a medical home, as one unit, whether a particular place or a particular practitioner? Table 1 documents the advantages of having a particular practitioner or a particular place. It is clear that, for most aspects of care and health outcomes, identification of a particular practitioner provides better services than mere identification of a particular place; exceptions are for appointment keeping and for preventive care needed by all children at defined times, for which having a particular

TABLE 1. Benefits of a Particular Place or Person as the Medical Home

	Identification With a Person	Identification With a Place
Better problem/needs recognition	++	
More accurate/earlier diagnosis	++	
Better concordance		
Appointment keeping	++	++
Treatment advice	++	
Less emergency department use	++	
Fewer hospitalizations	++	+
Lower costs	++	+
Better prevention (some types)	++	++
Better monitoring	+	
Fewer drug prescriptions	+	
Fewer unmet needs	++	+
Increased satisfaction	++	

++ indicates evidence good; +, evidence moderate.
Source: Starfield.

place (rather than no place at all) provides equal benefit.

Two international comparisons, with 13 industrialized countries characterized by the strength of their primary care health systems, document the relevance of primary care to effectiveness and efficiency of health services in general. Primary care–oriented countries (namely Denmark, Finland, Netherlands, Spain, and United Kingdom) achieve notably better outcomes for health in early childhood: low birth weight ratios, postneonatal mortality, infant mortality, and child mortality,[8–10] including deaths from injury.[11] It is notable that the United States ranks near the bottom or at the bottom on all of these measures and is rated the lowest in primary care orientation of all of the countries.[8] The advantages of primary care are most notable for health outcomes in childhood, although they are also marked for some health outcomes later in life.

Of the many characteristics that contributed to the ranking of primary care orientation, 5 seem to be most critical. Three of these are a result of national health policies: regulated resource distribution, government-provided health insurance, and no- or low-cost sharing for primary care services. That is, countries that do not permit or provide strong incentives against locating health facilities or personnel in areas with an already sufficient supply, countries in which health insurance is under the control of a publicly accountable body, and health systems that do not permit more than minimal cost sharing for primary care achieve better outcomes and at lower overall costs. Two additional characteristics are related to the nature of primary care practice: comprehensiveness of primary care services and family orientation. The greater the extent to which a wide range of services are provided by primary care practitioners and a family orientation of these services are associated with better health outcomes at lower costs.[8]

A more recent time series (1985–1995) analysis with 18 Organization for Economic Cooperation and Development countries examined the relationship between the strength of primary care and mortality, while controlling for other possible influences such as gross domestic product per capita, total physicians per 1000 population, percentage of elderly people, average number of ambulatory care visits, per capita income, and alcohol and tobacco consumption. The stronger the primary care orientation in the country, the lower the all-cause mortality; potential years of life lost (all causes); potential years of life lost as a result of influenza and pneumonia, asthma and bronchitis, cerebrovascular disease, heart diseases, and, in male individuals, all-cause mortality; and life expectancy.[12] This is despite the evidence that the stronger the primary care base of health systems, the lower the overall costs for health services.[8,13]

In another international study, depressed patients in primary care centers where patients have a relationship with a particular primary care physician were found to be more likely to have a frank presentation of their depression than patients at centers where such a relationship was not characteristic. In this World Health Organization study of 1146 patients with a diagnosis of major depression in 15 primary care centers in 14 countries on 5 continents, depressed patients in centers without this relationship were more likely to present themselves with somatic symptoms.[14]

Evidence of the benefits of a primary care orientation is also available from studies done within countries. In the United States, having a regular source of care is the only factor significantly associated with seeing a physician within 1 year for adolescents; not race, ethnicity, family income, or the absence of insurance contributes to the likelihood of seeing a doctor once having a regular source of care is considered.[15] Adolescents with 1 regular source of care are much more likely to have received indicated preventive care and much less likely to have received emergency department care than comparable adolescents without a regular source of care or >1 source of care.[16]

Delay in receiving indicated measles, mumps, and rubella immunization in a northern California health plan (in which all enrolled patients have a place from which they receive care) is much greater in the absence of a particular primary care practitioner—greater even than when the family lacks knowledge about the importance of immunizations.[17]

Community health centers (CHCs) provide an im-

portant source of primary care to >9 million financially disadvantaged people in the United States (Shi L, personal communication, 2003). These community centers provide primary care services to underserved communities. To receive grants from the federal government, these centers (known as federally qualified health centers) must meet criteria for high-quality primary care. Evidence indicates that care received in such centers is associated with better outcomes than is the case for comparable populations that have no access to such centers. The percentage of children with age-appropriate interval since their last routine care visit is much greater when they have a particular physician with whom they relate in these centers (88%) than when they have no specific clinician (82%), have a non-CHC place where they receive care (80%), or have no sick care site (76%).[18]

When the adequacy of primary care, measured with regard to the extent to which it achieves first contact care, ongoing care over time, comprehensiveness of care, coordination of care, and community orientation, is assessed, CHCs are found to outperform health maintenance organizations (HMOs) on primary care characteristics overall, in providing ongoing care, on coordination of care, on comprehensiveness of services received by users, and in community orientation and to perform comparably to HMOs on first-contact care and comprehensiveness of services available.[19]

In 3 major metropolitan areas of the United States, a lower rate of pediatric hospitalizations was found in communities in which primary care physicians are more involved in the care of children before and during hospitalization. Particularly influential were CHC sources of primary care in 1 of the cities. The findings were robust after controlling for other possible differences, including gender, income, and severity of illness.[20]

Rates of avoidable hospitalization for adults with 6 conditions (angina pectoris, congestive heart failure, hypertension, pneumonia, asthma/bronchitis, and diabetes) were, on average, lower in areas of the US state that had a higher ratio of family physicians to population, but there was no significant relationship for hospitalizations for these conditions and the general internist per population ratio.[21] In the same study, rates of avoidable hospitalizations for diabetes and pneumonia among children were lower in areas where the family physician-to-population ratios were higher, but this was not the case for the pediatrician-to-population ratio.[21]

A 5-year follow-up study of adults in a national probability sample survey showed that those who had a primary care physician as their regular source of care had one third lower costs and were 19% less likely to die, even after controlling for several other predispositions to dying.[22] One of the first studies of primary care done in all 50 US states showed that the number of primary care physicians per population was the only characteristic consistently related to better outcomes, including overall mortality rates, mortality rates from heart disease and cancer, neonatal mortality, life span, and low birth weight. In contrast, the number of specialty physicians per population was related to poor outcomes of all of these types.[23]

The greater the number of primary care physicians (family physicians, general internists, and general pediatricians) in the 50 US states, the higher the life expectancy. However, some states have much lower life expectancy than would be expected given the number of their primary care physicians, indicating that other factors, some sociodemographic, some socioeconomic, and some possibly related to social policy, also influence health indicators.[24]

A path analysis to examine the relationship between primary care physician supply and various measures of health at the state level in all 50 US states found that the more primary care physicians (measured as number per 10 000 population), the lower the total mortality, postneonatal mortality, total infant mortality, and stroke mortality and the greater the life expectancy—even when income inequality in the states was included in the analysis.[24]

A pooled cross-sectional time series (1985–1995) using state-level data found that the greater the primary care physician supply, the lower the infant mortality and low birth weight, after controlling for state-level education, unemployment, racial/ethnic composition, income inequality, and urban/rural differences.[25]

The benefits of primary care for socioeconomically disadvantaged people is also demonstrated in the case of prenatal care. Not having a regular source of care before pregnancy is one of several factors independently associated with untimely initiation of prenatal care among low-income California women; other factors are inadequate knowledge of the importance of early care, grand multiparity, high school education or less, transportation problems, feared disclosure of pregnancy, and unwanted or unplanned pregnancy. Not significant once the above are considered are family income, Medicaid coverage, age, race, ethnicity, smoking, and stress.[26] Thus, not only is primary care more effective in timely initiation of prenatal care, it also is conducive to reducing socioeconomic, racial, and ethnic disparities in receipt of prenatal care.

Having a regular source of care was found to be the most important factor associated with receiving preventive care services, even after considering the effect of demographic characteristics, financial status, and need for ongoing care. Receiving optimal primary care (in terms of availability, continuity, comprehensiveness, and communication) from the regular source of care further increases this likelihood.[27]

A US study that examined factors related to premature mortality found that greater availability of primary care physicians predicted fewer years of life lost in metropolitan areas, although not in rural areas, perhaps as a result of difficulty in access because of distances in rural areas. In this study, several other characteristics were also independently associated with premature mortality, including the proportion of female-headed households and blacks, as well as a constellation of community factors including unemployment, vacant housing, and welfare spending.[28]

Even some disease-oriented studies show the benefits of primary care. A study in which a continuity score was assigned for each patient with diabetes in 5 CHCs showed that higher primary care continuity is associated with better control of diabetes, with some of the effect mediated by better diet.[29]

For each 10-percentile increase in the primary care physician supply at the county level, the odds of late-stage diagnosis of colon cancer decreased by 5%, with a comparable increase with each 10-percentile increase in specialty physician supply. The effect is greater in urban areas than in nonurban areas. It was also greater in higher socioeconomic areas than in lower ones, perhaps because of poorer access to existing primary care services in areas of lower socioeconomic status.[30]

A case-control study of visits by hypertensive men in 1 low-income inner-city hospital emergency department in a low-income area compared those whose hypertension was controlled with those whose hypertension was not controlled. After controlling for a variety of other related factors (eg, race, education), men whose hypertension was not controlled were >4 times as likely to have no primary care source as those whose hypertension was controlled. This was by far the most salient correlate of hypertension control of the several factors that were studied.[31]

A study of 965 children who had acute asthma and presented to 36 emergency departments in large urban areas found significantly lower likelihoods of having a primary care provider for children on Medicaid or uninsured children, compared with those who were enrolled in managed care or had indemnity insurance. Poorer outcome was found among the former 2 groups of children, even after controlling for age, race/ethnicity, parents' education level, median household income, previous hospitalizations for asthma, and previous intubations for asthma.[32]

Studies also have documented the importance of primary care in other countries. In the United Kingdom, the number of general practitioners per 100 000 population was found to be related to lower in-hospital standardized mortality.[33] Although the reasons that the number of general practitioners per population should be related to lower in-hospital mortality are unexplained and may be attributable to unmeasured confounding factors (eg, severity of illness), this British study suggests that at least some aspects of primary care practice may be related to important outcomes of hospitalization.

In Japan, older people who have a regular physician are less likely to be taking many prescribed drugs, compared with comparable people who have no regular source of care.[34] In Japan, there is no designated family physician or general internist or pediatrician, but most physicians who practice in the community are believed to be delivering reasonably adequate primary care.

Comparisons of the rate of decline for avoidable mortality in the United States and Canada show that it was more rapid in Canada than in the United States. The lowest avoidable mortality ratios in Canada were for disease groups in which public health or primary care would be expected to play a major role: asthma, cervical cancer, hypertension and cerebrovascular disease, tuberculosis, and maternal mortality), as opposed to those generally requiring specialist treatment in the hospital (Hodgkin's disease, cholecystitis, and abdominal hernia).[35] As the authors noted, "One of the most frequently cited differences between Canada and the US is the degree to which comprehensive health care is freely available at the point of use, . . .and the Canadian emphasis on primary care, demonstrated by a higher per capita proportion of primary care physicians than in the US."

In Spain, a national primary care reform was implemented in stages, with the most deprived areas undergoing the reform first. Within a 10-year period after the reform was started, those areas in which it was implemented first had the largest decline in mortality rates associated with hypertension, followed by those areas with somewhat later implementation, and then followed by areas with late implementation. Hypertension-related conditions are known to be responsive to primary care–level interventions. In contrast, deaths associated with perinatal causes, which are responsive to specialty care (rather than primary care) intervention, declined but in no particular pattern relative to the primary care reform.[36]

DOES PRIMARY CARE REDUCE DISPARITIES ACROSS POPULATION SUBGROUPS?

Some of the previously mentioned studies concerning effectiveness of primary care also suggest that better primary care improves equity in health. Additional evidence comes from studies specifically designed to assess this. A comparison of referral-sensitive (discretionary) hospitalizations and "marker" admissions (urgent, insensitive to primary care) found that compared with the case for marker admissions, an increased supply of primary care physicians was associated with a higher probability of black hospitalizations than white admissions for referral-sensitive admissions. That is, the greater presence of primary care resources may significantly narrow the racial disparity in specialty referrals and improve the referral process for disadvantaged populations.[37]

As noted previously, evaluations indicate that federally qualified health centers overall provide a higher quality of primary care than other forms of organization of primary care services, including doctors offices and HMOs.[19,38] Only recently, however, has a similar effect been shown in reducing disparities across population subgroups.

Because low birth weight is more common among black than white infants, an appropriate test of the equity-enhancing effect CHCs is a comparison of the low birth weight percentage in CHCs compared with the general population. The low birth weight percentage among black urban infants (1991) was 13.6 compared with 10.4 for black users of urban CHCs; for black rural infants, it was 13.0 compared with 7.4 for rural health center black infants. For urban areas, the difference between all versus black infants was

4.8%, whereas it was 2.9% for CHC users; for rural infants, the differences were 6.2% versus 1.4%—a notable decrease in the differences between all and black infants in users of CHCs.[39]

When "healthy life" is conceptualized as a weighted combination of perceived health and limitations of activity and CHC patients are compared with a sample of the US population not using CHCs, health center patients are found to have less healthy lives, undoubtedly as a result of greater socioeconomic disadvantage. Although blacks in the national sample have poorer "healthy life" scores than whites, this is not the case in the CHC sample, where there is no such difference. Furthermore, patients who use CHCs experience significantly less healthy life than the overall nonpoor population, but the disparity is much less than the disparity found between poor and nonpoor people in the national sample.[40]

The equity-enhancing effect of primary care resources (measured as primary care physicians to population ratio) also was shown in a study that examined postneonatal mortality rates in the 50 US states. Socially inequitable states (those with high income inequality) had a 17% decrease (from the median) if they were well endowed with primary care physicians but a 7% increase in postneonatal mortality if they were relatively deprived of primary care physicians. States with relatively equitable distribution of income had a small positive effect of relatively high primary care physician to population ratio and a small negative effect (increased mortality) if primary care resources were relatively low.[41]

The same positive effect on equity was shown in the case of stroke mortality. States with high income inequality and relatively high primary care physician to population ratios had lower stroke mortality, whereas those relatively deprived of primary care physicians had an increased stroke mortality. States with low income inequality also showed the same effect of high and low primary care resources: a higher ratio of primary care physicians was associated with lower mortality, whereas a lower ratio of primary care physicians was associated with higher mortality.[41]

The equity-enhancing effect of primary care is also evident for self-reported health. In a study in 60 nationally representative US communities, areas with high income inequality (ie, large differences in income between the wealthy and the nonwealthy) had a one-third higher rate of reporting poor or fair health if the area was poorly endowed with primary care physicians. Areas with moderate income inequality and poor primary care resources had an increase of reporting fair or poor health of half that magnitude.[41]

INSURANCE AND THE MEDICAL HOME

The beneficial effects of insurance on use of health services in the United States is well documented. What is less well known is that insurance enhances the likelihood but does not guarantee a medical home. Approximately 90% of children are insured; >80% have a regular source of care; 75% of uninsured children have a regular source of care.[42] Fewer than 50% of children younger than 3 years have a regular source of care that is a particular person.[43] Regardless of the strength of the safety net in states, lack of insurance is a powerful predictor of not having a regular source of care.[44]

Gaps in insurance, especially if >6 months in duration, are among the 6 factors significantly associated with not using a regular source of care. In contrast, many common sociodemographic factors, such as parental education and ethnicity, are not associated with using a regular source of care in a year.[45] Not having insurance has a much more important influence on not having a regular source of care than it does on various other aspects of access and use of services.[46] Continuity of well and sick care, a characteristic of a medical home, is significantly associated with having insurance, as is having an HMO as the source of well-child care.[47]

Increased eligibility for Medicaid significantly reduced rates of hospitalization for ambulatory care sensitive conditions, especially for children younger than 6 years, for whom the Medicaid expansions were greater.[48] Increasing Medicaid eligibility leads to greater coverage and greater presence of a regular source of care. However, black children are more likely to use poor regular sources (not doctors' offices). Thus, just providing insurance may increase disparities between population subgroups unless good sources of primary care are available.[49]

CONCLUSIONS

Although important for use overall, insurance (in the context of the insurance-based US health care system) enhances the likelihood but does not guarantee a medical home. A medical home, which consists, at the least, of a source of first-contact care, person-focused care over time, comprehensiveness of care, and coordination of care when people have to go elsewhere, provides better effectiveness of services as well as fewer disparities and more equity in health across population subgroups. A concerted attempt to provide health insurance for all of the country's population as well as a medical home for everyone should be of high priority if the United States is to take its place among countries with the best health statistics.

ACKNOWLEDGMENTS

This work was supported in part by Grant No. 6 U30 CS 00189-05 S1 R1 of the Bureau of Primary Health Care, Health Resources and Services Administration, Department of Health and Human Services, to the Primary Care Policy Center for the Underserved at Johns Hopkins University.

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