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Confronting The Chronic Disease Burden In Latin America And The Caribbean

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ABSTRACT The United States is not alone in facing increasing incidence and prevalence of chronic conditions as a contributor to poorer health and growing health care spending. Latin America and the Caribbean face similar burdens, but they have fewer resources with which to respond. Much remains to be done to cope with the emerging public health and fiscal threat posed by increases in chronic conditions. However, a set of studies sponsored by the Inter-American Development Bank bring good news on potentially cost-effective strategies to improve coverage and outcomes. They should help move the growing epidemic of chronic diseases in Latin America and the Caribbean to the forefront of health policy in the region.

Chronic conditions and their risk factors are now the major causes of death, disability, and illness in Latin America and the Caribbean. Cardiovascular disease—the leading cause of disability and death in these countries—was responsible for 35 percent of all deaths in 2004 and 68 percent of the total disease burden.[1] In contrast, communicable diseases such as tuberculosis, malaria, and HIV/AIDS account for 10 percent of deaths.

Poor countries are particularly affected, with worse outcomes than the overall numbers for the region. In 2002, for example, Haiti and Guyana had the highest mortality rates for stroke in the region.[2] Poor populations within countries are also dramatically affected; 30 percent of the premature deaths from stroke are in the poorest 20 percent of the population, whereas 13 percent of those premature deaths are in its richest 20 percent.[3] Furthermore, national budgets for health care remain constrained, while these countries face increased costs associated with the management of the growing burden of chronic disease.

Recognizing the scope of the challenge, in 2009 the Inter-American Development Bank invited researchers to examine how well Latin American health systems fared on the health system–based prevention and management of chronic disease. Papers were submitted on programs in Brazil, Chile, Colombia, Jamaica, Trinidad and Tobago, and Mexico, while a regional paper dealt with the potential cost-effectiveness of combined drug therapies to reduce cardiovascular disease risk in several countries in the region. Although not fully representative of the region, the cases selected used adequate databases to clearly link health system actions or design features with a variety of chronic disease outcomes.

The results of some of these studies are presented in this issue of *Health Affairs*. They demonstrate that health systems in the region are developing potentially cost-effective responses that could be adapted and expanded to improve chronic disease outcomes in Latin America and globally. This introduction outlines the growing burden in the region and provides a brief synopsis of the studies, highlighting potential areas for further scaling up of successful programs and reducing barriers to successful implementation.

Chronic Disease Mortality Trends

Mortality resulting from cardiovascular disease and stroke declined in the United States and Canada by about 60 percent for each condition between 1970 and 2000. Latin America experienced much lower reductions: 25–40 percent among men and 20–50 percent among women.[4]

DEMOGRAPHICS The differing trends between North and South may be driven by differences in the evolution of the demographic profiles. North Americans are dying at older ages, as are people in Latin America, but the mortality transition is occurring more quickly in the United States and Canada. However, the comparatively older US and Canadian population structure is not sufficient to explain the changes. Over the same period, 1970–2000, age-adjusted cardiovascular disease mortality actually trended upward in Mexico, Costa Rica, and Venezuela.[5,6]

RISK FACTORS The slower rate of decline in Latin America may also be attributable to rapid lifestyle changes, including poorer diets, increased smoking, increased obesity and less exercise, and perhaps more limited access to effective health care and medications. Levels of chronic disease risk factors in the region are relatively high. The population-based Cardiovascular Risk Factor Multiple Evaluation (CARMELA) study in seven major Latin American urban areas[7] estimated the prevalence of obesity at 23 percent and that of smoking at 30 percent of the population over age twenty-five.[8] This put the region at the high end of obesity figures for Organization for Economic Cooperation and Development (OECD) countries.

Similarly, a population study in the Brazilian state of Rio Grande do Sul found that 55 percent of adults older than age twenty were obese or overweight—a dramatic increase from the prior decade, when these rates were under 32 percent.[9] The same study found that more than a third of the population smoked—a stable rate from the prior decade. Hypertension was diagnosed in 18 percent of patients in the CARMELA study; however, subnational studies show the prevalence to be even higher in certain areas.[10]

DIABETES Diabetes is an emerging epidemic for most Latin American countries, and in particular for Mexico. Diabetes prevalence in Mexico City has been estimated at 9 percent of the adult population, compared with an average prevalence of 7 percent for the region.[8] Estimates from the 2006 Mexican National Health and Nutrition Survey place the prevalence of type 2 diabetes at 14.4 percent of the adult population.[11] Diabetes-related mortality increased 23 percent from 1998 to 2002 in Mexico, reaching 53 deaths per 100,000 and making it the leading cause of mortality in women and the second cause in men.

HIGH CHOLESTEROL Urban diets have led to an alarming rise in hypercholesterolemia (elevated levels of "bad" cholesterol)—a risk factor tightly linked to chronic conditions such as ischemic heart disease and stroke. In a nationwide survey of Brazilian cities, 53 percent of the adult population was found to have high cholesterol. Extremely high cholesterol levels were seen in 14 percent of the population in the CARMELA study.

In Mexico, prevalence of hypercholesterolemia is slightly lower, at 9 percent. But it has reached a striking level—8 percent—in those younger than age thirty,[12] which suggests that the worst is yet to come.

Health System Performance

In response to chronic conditions, on the whole, regional health systems seem to perform poorly on measures of the effectiveness and quality of care.

AVOIDABLE DEATHS An estimated 39 percent of total deaths in Mexico during 2000–2004 have been categorized as avoidable by the Secretariat of Health. The bulk of these deaths are related to noncommunicable diseases.[13] Avoidable chronic disease hospitalizations in Brazil accounted for 23 percent of all public-sector hospitalizations in 1999, and 20 percent in 2007, for adults ages 20–79.[14]

Only 5–10 percent of breast cancer cases in Mexico are detected during early stages of the disease, leading to high case fatality rates. In contrast, in the United States more than 50 percent of cases are detected in early stages, and mortality is lower as a result.[15]

QUALITY OF CARE There are few comparative studies of quality of care in Latin America and the Caribbean. However, small-scale studies suggest that there are major differences between official clinical guidelines and care actually delivered to patients.

For example, rural Mexican public-sector clinics participating in the *Oportunidades* (Opportunities) conditional cash transfer program—a program that pays poor beneficiaries for obtaining preventive care—provided only 32 percent of the specific number of interventions established in national protocols to treat diabetic patients.[16] According to a study of 400 cities in Mexico, diabetes treatment was being offered to 85 percent of patients, but fewer than 50 percent were achieving satisfactory levels of control.[12]

Of those diagnosed with hypertension in Rio Grande do Sul, Brazil, half were unaware of their condition, and only 10 percent were being adequately treated.[17] In Costa Rica—where the

public health system is thought to be accessible to 98 percent of the population—a quarter of the population older than age twenty has hypertension.[18]

PREVENTION POLICIES Unhealthy population-level policies also present challenges. Tobacco and alcohol control must be strengthened. Tobacco prices actually decreased in many Latin American countries between 2002 and 2007, making tobacco more accessible to more of the population.[19] Meanwhile, among other health-promoting policies, efforts to achieve healthy levels of salt intake and reductions in trans-fat content in foods remain limited.[20]

Economic Challenges

At the current standard of care, and with little emphasis on prevention, direct and indirect costs of chronic conditions will pose important fiscal challenges for the region. A forthcoming study that models the impact of current trends in risk factors on disease prevalence and health care spending in Brazil illustrates a potentially preventable wave of cases and costs during 2010–50 (see Exhibit 1 and the online Appendix).[21,22]

Other literature confirms this tendency. In Mexico, for example, if current trends in diabetes and hypertension increase at a rate that is unchecked, an increase of 5–7 percent of the health budget would be required annually.[23]

In Argentina, a 2010 study found that it would be possible to prevent an annual loss of 420,000 healthy life-years to cardiovascular disease and stroke. Avoidable costs would amount to US $395 million per year.[24]

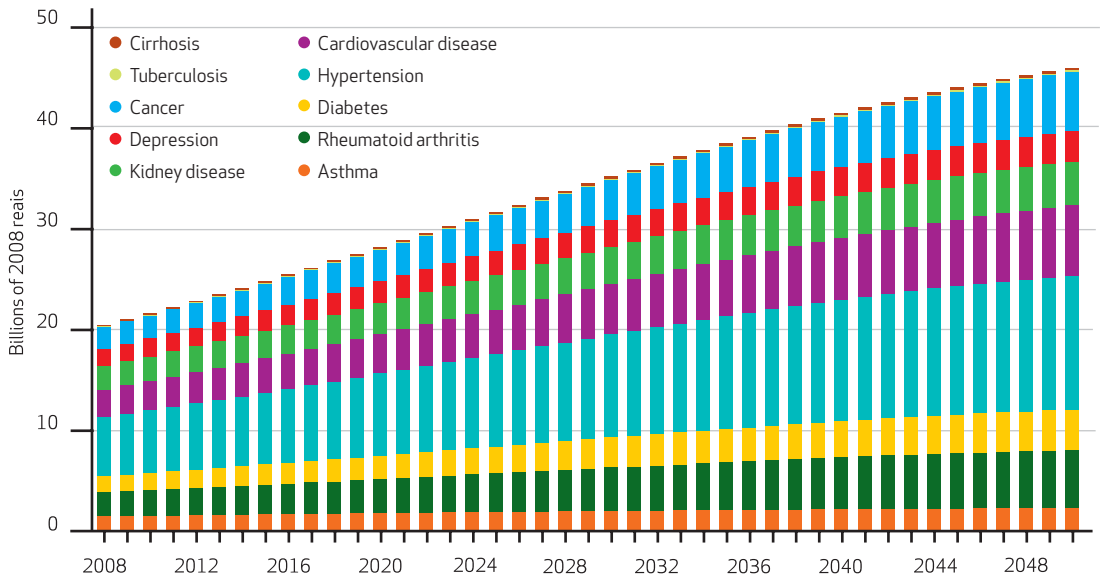
Tobacco use alone costs Mexico US$627 million per year in health care expenditures, employee absenteeism, reduced labor productivity, forgone taxes, and premature death.[23] Other economic and social costs may also be significant.[25]

Yet spending on health has stagnated in the region since 2000. This may provide some explanation for the disappointing system performance observed. Total average spending on health in the region increased only marginally from 6.4 percent of gross domestic product (GDP) in 2000 to 6.5 percent in 2007. Public spending on health is also low and flat as a share of GDP.[26] Fortunately, per capita spending levels on health are increasing in absolute terms in some countries. But the costs of treating chronic conditions—in personnel, equipment, medications, hospitalizations, and continuity of care—will probably exceed the costs associated with preventing and treating communicable diseases. This could particularly be the case in the short term, as more cases of disease are detected in strengthened screening and primary care programs.

Furthermore, increased access to consumer goods such as automobiles and cellular phones,

EXHIBIT 1

Health Spending Projections By Chronic Condition In Brazil, 2008–50



SOURCE Authors' analysis based on the 2008 Pesquisa Nacional por Amostra de Domicilios (PNAD). **NOTE** More details are in the online Appendix, which can be accessed by clicking on the Appendix link in the box to the right of the article online.

The primary health care approach helps complete the unfinished agenda in communicable disease control in poor communities.

as well as high rates of violence that affects street safety, may lead to decreased levels of physical activity and thus higher need. The accumulation of education and wealth should also strengthen population demand. In combination, these factors may have led to rationing in the form of low quality of care, exclusion of the poor, and a high burden of preventable mortality.

Potential Solutions

STRENGTHEN PRIMARY CARE As in other parts of the world, strengthened primary health care is seen as a promising strategy for management of risk factors and disease in a resource-constrained environment. Current financing mechanisms in the region generally promote the use of "curative" rather than preventive care and direct utilization at hospitals, bypassing primary health care.

In Brazil, reductions in avoidable hospitalizations resulting from chronic conditions have been linked to aggressive community outreach, establishment of care guidelines, and intergovernmental fiscal incentives for strengthened primary health care via the Family Health Program.[14] The primary health care approach also helps complete the unfinished agenda in communicable disease control in poor communities, by providing integrated prevention and counseling to households in a clinic's catchment area. As a result, the necessary health and nutrition conditions will be created to avoid chronic disease risk factors in the future.

REDUCE ECONOMIC BARRIERS TO ACCESS Reduced economic barriers to access have had an impact. In Colombia, health insurance coverage has resulted in greater preventive effort by patients with diabetes, and there is little evidence that the insurance coverage has led them to engage in less healthy behavior.[27] Studies in Mexico indicate that public subsidies via insurance have a significant impact on access to medications for hypertension and diabetes by the elderly.[28] They also show that a conditional cash transfer program, which conditions monthly monetary transfers to poor adults on use of preventive health care twice a year, has improved measures of adult health and reduced risk-factor prevalence.[29]

ADDRESS PROVIDER INCENTIVES Aligning incentives for provider performance holds promise. In Chile, the enforcement of provider use of clinical guidelines through financial, reputational, and legal incentives and disincentives has seemed to yield improvements in outcomes.[30] Chile's program of access, quality, opportunity, and financial protection guarantees has been linked to significant declines in case-fatality rates for six chronic conditions.

ADOPT COST-EFFECTIVE INTERVENTIONS Adoption of cost-effective interventions can represent a major step forward. Examples include the use of proven screening algorithms to identify the highest-risk patients[20] and combined drug therapy to reduce blood pressure and cholesterol.[21,31] Given the high prevalence of risk factors and other precursors to chronic disease among those living in Latin America and the Caribbean, it is possible that many borderline cost-effective interventions in other settings may in fact be cost-effective in this high-prevalence region. Cost-effective prevention, screening, and chemotherapy exist for certain highly prevalent cancers in the region, for example, and they are affordable in many countries.[15]

SET PRIORITIES In the context of stagnant public spending and increasing needs, governments will increasingly need to strengthen explicit priority-setting mechanisms based on cost-effectiveness criteria. Prospective cost-effectiveness analyses can provide the kinds of information needed to make an informed decision on the scaling up of programs—including those in Mexico—for screening and preventive care for prediabetes and prehypertension.[32]

Public consultation processes, such as those used in Chile to select priority interventions, also could be used to protect decisions from subsequent legal demands[33] while assuring that the best interests of the population's health are served. These efforts can also support countries in developing quantitative assessments that compare the costs associated with investing in prevention versus dealing with the disease consequences of the status quo.

ADDRESS SYSTEMIC BOTTLENECKS Systemic bottlenecks to better quality and availability of care must also be addressed. These include the quality of the health care workforce in the re-

gion; the structure of incentives in the health care system for improving productivity and quality; allocation of human and financial resources; procurement systems for medicines and other inputs; and aging and outdated protocols for addressing disease, as well as infrastructure and equipment. Furthermore, limited use of data, evidence, and information systems for decision making in clinical care and policy making are probably linked to the poor quality observed.

FOCUS ON CLINICAL AND POPULATION-LEVEL PREVENTION Finally, although this set of papers has focused on prevention and management through health system tools, a comprehensive effort to address the chronic disease epidemic will be most effective when clinical prevention is combined with population-level prevention policies. The World Health Organization (WHO) estimates that up to 80 percent of heart disease, stroke, and type 2 diabetes could be prevented by eliminating shared risk factors such as tobacco use, unhealthy diet, physical inactivity, and the harmful use of alcohol.[1]

There are many examples of successful prevention programs in developed and developing countries. Cost-effective measures include tobacco taxation, food labeling, salt restrictions, and educational efforts.[34]

Conclusion

We hope that the studies presented in this issue will help move the growing epidemic of chronic diseases in Latin America and the Caribbean to the forefront of health policy discussion in the region. ■

Amanda Glassman was principal technical lead for health at the Inter-American Development Bank when preparing this paper. The authors thank the Inter-American Development Bank, authors, and external peer reviewers who participated in the research network. This work represents the views of the authors and does not represent the views of the Inter-American Development Bank or its Board of Executive Directors.

NOTES

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Amanda Glassman, Thomas Gaziano, César Patricio Bouillon Buendia, and Frederico Guanais de Aguiar offer an overview of a set of studies sponsored by the Inter-American Development Bank (IDB) on fighting chronic disease in Latin America and the Caribbean. Also appearing in this month's *Health Affairs*, the studies provide analysis of potentially cost-effective strategies to improve health care and outcomes. The authors' collaboration on this paper, they say, reflects their participation in the IDB-sponsored chronic disease research network and their shared commitment to "reducing preventable morbidity and mortality related to chronic disease in the region and the hope that this work will inspire policy action."

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