Progress towards Equity and Challenges Ahead
The Declaration of the Millennium Development Goals

reflects an unprecedented political consensus on the state of the world and its vision for the future. It sets measurable goals and specific timetables to gauge humankind’s progress.

Mirta Roses Periago
Inauguration Speech as Director of PAHO
Progress in Health Indicators

As the goal of “health for all” reached its target date, most of the countries in the Region of Americas had achieved the objectives set for several health indicators. In fact, the Region’s health situation, as measured by national average indicators, has never been better. For example, countries in the Americas had been able to reduce infant mortality to an average of 24.8 deaths per 1,000 births for 1995–2000—a decrease of approximately 12 deaths per 1,000 births, compared to the 1980–1985 period, or nearly 50%. Life expectancy at birth in Latin America, too, reached an average of 72.9 years, which is the target set for the end of the 20th century. Due to an increase in vaccination coverage from 48% to 93% between 1980 and 2000, the incidence of measles in the Region of Americas fell from 408 new cases per 1,000,000 population in 1980 to 2 new cases in 2000. In 2002 there were 2,576 new cases, however, which highlights the need to boost coverage. The number of physicians per 10,000 inhabitants also soared in the Region in recent years, rising from 13.1 in 1980 to 19.8 in 1999.

It is well known that relying on average indicators may mask important differences, both between and within countries. So, to truly gauge achievements in equity in health, health indicator distributions must be examined.

Achievements towards Equity, 1980–2000

Life expectancy at birth (LEB) was chosen for this analysis because it can be considered a summary indicator of the population’s health status. Between 1950–1955 and 1995–2000 the median LEB for countries in the Americas increased from 55.2 years to 72.9 years (Figure 1). This represents an increment of 17.7 years, or 32% of LEB in the Region.

To measure achievements in the decrease of LEB inequality in the Region, interquartile ratios (IQR = third quartile/first quartile) were used. This indicator shows how far apart are high and low LEB of extreme countries. Along with the observed increase of LEB in the Region, the IQR decreased from an excess of 20% (IQR = 1.20) in 1950–1955 to an excess of 9% (IQR = 1.09) in 1995–2000. These values represent a decrease in the absolute differences from 9.7 years in 1950–1955 to 6.4 years in 1995–2000.

There are important discrepancies in this analysis, however. For example, although most countries showed a constant increasing slope for LEB, some did not. This is particularly true of Haiti, which almost always has the lowest values (the minimum line in Figure 1). Haiti had an estimated LEB of 37.6 years in 1950–1955, which increased to 52.0 years in 1995–2000, clearly de-

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1 The LEB interquartile ratio (IQR) was calculated as the ratio of the LEB in the country ranked at the 75th percentile (3rd quartile) to the LEB in the country ranked at the 25th percentile (1st quartile). It is a measure of the variation of the LEB distribution among countries in a group.
creasing its initial rate of LEB gain around the 1980s.

An analysis of how causes of death have an impact on the loss/gain of LEB over the past years might help to understand the described trends of this indicator in the Region. This analysis was carried out based on information from 18 countries for which data were available from both the early 1980s and the late 1990s.

The average years of life expectancy at birth gained (YLEG),\(^2\) by contributions of broad groups of causes of death, were calculated. Figure 2 summarizes the contributions of broad groups of causes of death for YLEG in the Americas between the early 1980s and the late 1990s, by age and sex. The impact that the reduction of mortality in children under 5 years of age has had on the LEB gain in the Region is noteworthy, translating into an average of 2 YLEG for both sexes and representing 50% of the total gain for men and 40% of that for women. The gain for both sexes combined was mainly due to a reduction of mortality from communicable diseases (60% or 1.2 YLEG) and from diseases originating in the perinatal period (25% or 0.5 YLEG). LEB gains derived from a reduction in mortality from external causes among persons aged 15 to 39 years old, and from cardiovascular diseases in adults, are most evident in women. This, added to the greater negative impact of mortality from residual causes, communicable diseases, and neoplasms among adult males, explains why women have gained, on average, more LEB years (4.9 years) than men (3.8 years). It is important to note that the negative impact of mortality from communicable diseases in men aged 25–40 years old and in women aged 30–40 years old is essentially attributable to AIDS.

\(^2\) Average years of life expectancy at birth gained, or in some cases lost (YLEG), were calculated using weights based on population sizes, and disaggregated into the specific contributions of causes of death, following the methods suggested by E.E. Arriaga (Los años de vida perdidos: su utilización para medir el nivel y cambio de la mortalidad. Notas de población. 1996, 24(63):7–38).
FIGURE 2. Contribution of causes of death to changes in life expectancy (YLEG), by age groups, for men (A) and women (B), Region of the Americas, beginning of the 1980s to the end of the 1990s.

Men: average total change in LEB = 3.8 years

Women: average total change in LEB = 4.9 years
The main specific causes of death with negative and positive impacts on YLEG were also analyzed for males and females for the same period (Figures 3 and 4). The infectious disease cause that had the greatest negative impact was AIDS, particularly in the male adult population (Figure 3). Countries such as Barbados (−1.5 years), Panama (−0.7), Puerto Rico (−1.0), and Trinidad Tobago (−0.6) suffered the largest negative impacts. The regional average loss of LEB years in males, −0.32 YLEG, almost tripled that of females, −0.11 YLEG (Figure 4). The contribution of diabetes mellitus also was negative on LEB (−0.18 YLEG), with similar impact for male adult and female adult and for elderly populations. With the exception of Argentina, Chile, and Costa Rica, countries where small gains were observed, this negative impact was observed in the vast majority of countries, ranging from −0.3 to −0.7 YLEG. Regarding lung cancer, all the countries experienced negative effects in YLEG among females, particularly Canada and the United States (Figure 4). In contrast, half of the countries experienced a modest positive impact on LEB from this cause of death among males (data not shown).

The most important positive change in LEB was due to a decrease in intestinal infectious disease mortality in both
male and female populations, particularly among children under 5 years old and younger (Figures 3 and 4). These changes might be related to efforts to promote and use oral rehydration salts. Other relevant positive changes in mortality that generated gains in LEB were: ischemic heart disease, contributing to an increase of 0.42 YLEG and 0.38 YLEG for female and male populations, respectively; acute respiratory infections, with 0.37 YLEG for females and 0.34 YLEG for males, mainly among children; and cerebrovascular diseases, accounting for 0.39 YLEG for females and 0.23 YLEG for males.

Factors Related to Health Inequalities, 1980–2000

Observations of the leading causes of death that affected LEB in countries over past years help to understand proximal determinants of change in this indicator. It is well known, however, that inequalities in health, especially in LEB, reflect structural socioeconomic inequalities. In fact, despite overall achievements in LEB inequality in countries of the Americas—as indicated by the IQR ratio—the distribution of LEB in recent years shows important
differences regarding country income levels and income gaps. Given that, for the following analysis countries were grouped according to their income level and income gap (as described in Table 1) as an approximation of their socioeconomic wealth and inequality of wealth distribution, respectively.

The distribution of LEB at the end of the period, by sex and by income level and income gap classification of countries, is presented in Figure 5. In addition to the LEB inequality that favors females over males, these distributions highlight two basic points: (1) for the same income gap, the median LEB is greater in countries with higher income levels, and (2) for the same income level, median LEB is greater in countries with narrow income gaps. The group of countries with high income level and narrow income gap showed the highest median LEB for male and female populations, compared to other groups. These results clearly suggest that a country’s income level and income gap may have independent effects on the health status of its population.

The path through which countries’ income level and income gap may generate an unequal distribution of LEB may be further investigated by considering the distribution of other macrodeterminants of health in the same country grouping. For example, inequalities in education—one of the most significant macrodeterminants of health and human development—can be analyzed through the


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distribution of the literacy rate. The regional median literacy rate increased from 84.9% in 1990 to 91.9% in 2000, with a slightly higher annual growth rate for women (0.50%) than for men (0.38%). At the end of the period, however, the literacy rate was consistently lower in countries with wide income gaps, especially in those that also have low income levels (Figure 6). Moreover, gender-related literacy inequalities were more pronounced in low income countries and, among them, in countries with wide income gaps, especially in those that also have low income levels (Figure 6). Moreover, gender-related literacy inequalities were more pronounced in low income countries and, among them, in countries with wide (median difference of 5%) compared to narrow (2%) income gaps. Overall, countries that tend to be more equitable in their income distribution also tend to have higher literacy rates, and this indicator is more evenly distributed between men and women.

Another macrodeterminant of health in the Region that has as much significance as an indicator of infrastructure development is access to basic water and sanitation services. Median water and sanitation coverage in the Americas increased from 66.3% to 86.9% between the early 1980s and the late 1990s, at a rate of 1.4% per year. Regarding the distribution of this indicator by urban and rural areas and by country groups, three aspects stand out: (1) urban areas achieved median coverage levels above 90%, and the distribution was similar regardless of income levels and income gaps; (2) given the same income level, countries with wide income gaps had lower access to water and sanitation in rural areas; and (3) inequalities between urban and rural areas are
more accentuated in the groups of countries with wide income gaps, regardless of their income levels (Figure 7). This evidence suggests that countries which tend to distribute their income more equitably also tend to have better water and sanitation coverage with smaller urban-rural disparities.
Moving Away from the “Tyranny of Averages:” The Infant Mortality Inequality Example

As illustrated in the above sections, despite gains made in the average regional levels of health indicators, there are still vast differences in their distribution and determinants at the subregional level and within country groups. The data presented suggests that this variation is modulated by the underlying socioeconomic country profile. In addition, these findings are consistent with the assumption that investments targeting overall reductions on average health indicators are not necessarily translated into reduction of inequalities.

An analysis of infant mortality trends can exemplify this statement. As mentioned earlier, the decrease in infant mortality (IM) in the Americas was significant in the last decades. The median regional IM rate was 42.5 per 1,000 live births in the early 1980s, dropping to 32.0 by the late 1990s—a 25% reduction in the absolute risk of dying in the first year of life. Moreover, this reduction was consistent across all country groupings by income level and income gap. The reduction in IM medians during that period ranged from 7.1 deaths per 1,000 live births in countries with high income and narrow income gap, to 19.5 in countries with a low income and wide income gap. Consequently, all IM median ratios for that period were under 1 (data not shown).

However, the interquartile ratios (IQR) of the IM rates—a measure of IM inequality—remained almost unchanged between the 1980s and the 1990s, at around 3.3 among low income and narrow income gap countries, 1.2 among low income and wide income gap countries, 2.0 among high income and narrow income gap countries, and 1.1 among high income and wide income gap countries. This resulted in IQR ratios virtually equal to 1 (IQR from 1.14 to 0.99) across all country groups, suggesting that within-group differences were not altered despite their overall IM rate decrease (data not shown).

In other words, although a decrease of the overall magnitude of the risk of dying in the first year of life was evident and consistently observed across all country groups in the past decades, IM inequalities did not change significantly in the same time period. These results point out that great achievements may be reached by central tendency measures (means and medians) of a given health indicator, without having a corresponding repercussion on the relative magnitude of the gaps (distributions) between and within population groups. Overall, these findings point to the need for international cooperation and political commitment to confront a double challenge: continue to pursue decreases in average health risk, and specifically support the definition and implementation of health strategies that have inequality reduction as a clear target.
Challenges Ahead on Health Equity Issues

Considering the uneven distribution of health indicators, it is desirable to promote health interventions that specifically aim at correcting or minimizing such inequality. Health situation analyses with the goals of translating health information into timely and effective interventions, assisting in setting priorities and target groups, and quantifying potential impacts are required.

The indicator YLEG discussed above provided information on changes—gains or losses—in years of LEB due to specific causes of death, based on previous mortality profile experiences. Another useful indicator, years of life expectancy lost (YLEL), defines the differential impact of specific causes of mortality based on the current mortality profile, considering an expected number of years of life to be lived, set at 85 years in this analysis. This target was arrived at based on the LEB already achieved by the world’s most developed countries. The impact shapes characteristic regional scenarios that make it possible to determine the mortality burden and identify health priorities that will help advance towards equity, and show the challenges ahead in these regard. To address this issue, this indicator was estimated for each socioeconomic country grouping.

The impact of mortality on LEB is more pronounced in those countries of the Region of Americas that have greater inequality in their income distribution. For example, men living in countries with a low income level and a narrow income gap lost, on average, 13.2 YLEL, a level similar to that seen in countries with high income level and narrow gaps (13.4 YLEL). In contrast, men living in countries with wide income gaps, regardless of whether they had low or high income levels, lost more years, 17.6 and 19.1 YLEL, respectively. A similar impact is also seen among women.

Existing scenarios in the Region, defined according to country groupings by income level and income gap, were further analyzed to determine the specific contribution of broad groups of causes of death on LEB, by age groups and for male (Figure 8) and female (Figure 9) populations. Given the same income level, countries with wide income gaps have markedly more YLEL (more than 2.5 years or more than twice higher) in the youngest groups among both males and females than do narrow income gap countries. This difference is attributable mostly to mortality from communicable diseases and perinatal causes. In addition, it is interesting to note that communicable diseases are more important at older ages among countries with wide income gaps, although the relative magnitude is lower. Moreover, especially in the male population, the impact of violent death at young adult ages is around twice as great (>0.3 years) in countries with wide income gaps compared to that in those with the same income level but narrow income gap (Figure 8).

As may be inferred from the above results, the dissociation between level and distribution of health, and the contrast-

Countries with low income and narrow income gap
Male average total loss to age 85 = 13.2 years

Countries with low income and wide income gap
Male average total loss to age 85 = 17.6 years

Countries with high income and narrow income gap
Male average total loss to age 85 = 13.4 years

Countries with high income and wide income gap
Male average total loss to age 85 = 19.1 years

Cancer
Communicable
Cardiovascular
Perinatal
Violence
Residual

ing effects of income levels and gaps, reflect the multicausal model under which health determinants operate and interact. On the one hand, the Region’s health situation shows that scenarios with greater socioeconomic disadvantage are not just those in which available resources are scarce and poverty is rampant, but also those in which there is more inequity in income distribution. On the other hand, it shows that improvements in average levels of health
that are not accompanied by improvements in the distribution of health gains are insufficient to generate human capital and accumulate sustainable development. In light of this analysis and given the urgent need to steer interventions toward promoting development and equity in health, decision makers must step up to the challenge and include both the level and the distribution of health when they set health policy targets and priorities.
Monitoring Health and Human Development: the “Millennium Development Goals”

It is essential to monitor and evaluate initiatives that pursue equity in health in order to stimulate debate, assess improvements, and exchange experiences, as well as to identify the need for technical support and international cooperation.

Historically, a set of initiatives has been used to monitor health indicators and to set priorities for improving health in the Region of Americas, as an end of human development. An example was “Health for All,” a WHO/PAHO initiative that encouraged the implementation of health policies and interventions to reach the target year of 2000 with better health indicators in the Region of Americas. A more recent initiative, the Millennium Development Goals (MDG), covers a broader set of targets that go beyond health—reducing poverty, improving health and education, and protecting the environment—which emerged from resolutions adopted at major United Nations conferences. These goals represent an invaluable opportunity for placing public health issues in the highest level agendas.

The challenge set by MDG could become a driving force among development agencies and international cooperation processes. The time frame agreed upon for most of the goals is the period between 1990 and 2015. Among the indicators for monitoring the attainment of MDG, are 12 directly related to morbi-mortality,\(^3\) plus other health-related events such as immunization, births attended by health personnel, and contraceptive use. There also is a set of indicators that deal directly with the determinants of or the consequences of poor health, such as those related to poverty, hunger, education, gender equity, access to water and sanitation, access to essential drugs and technologies, among others. Monitoring these two sets is critical, since health and development, and poverty, usually generate a cyclic causal change, where poor health may impair development and increase poverty, which, in turn, jeopardizes health.

In terms of the indicators directly related health status, it is interesting to note some important issues. First, some data needed for monitoring may not be readily available or reliable. The aim of monitoring a health indicator that was defined, by consensus, as relevant for development, implies that there must be the necessary technical and political commitment for improving sustainable data sources and management as a secondary desirable gain. In this regard, efforts for developing national health information systems or routine health basic data, such as those initiated around PAHO’s Regional Core Health Data Initiative, may be an asset in monitoring MDG.

Secondly, MDG targets are mainly set as average reductions. As discussed

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\(^3\) Indicators directly related to morbid-mortality include infant mortality rate, mortality of children under 5 years of age, maternal mortality, HIV/AIDS outcomes, malaria, and tuberculosis morbi-mortality.
above, great improvements were achieved in health indicators in the Americas in past decades, which must continue to be pursued. However, as also stressed, the decrease in averages is not linked to a decrease in inequalities. Therefore, the decrease in health indicator gaps between and within countries must be, by itself, a target for specific monitoring and interventions.

Finally, considering the diversity of scenarios for interventions and the vast inequality in available resources, the means through which seemingly similar MDG can be achieved may differ drastically from one country to another, and even within countries. For example, to decrease the infant mortality rate by 50% in countries or areas with already low values may require an extraordinary effort to deal with the genetic or health service determinants of death in this early age group. In contrast, to achieve the same goal in countries with much higher infant mortality rates may just entail organizing basic health services for acute diarrhea and respiratory infection management, as well as breast feeding reinforcement. Finding adequate interventions coordinated with a given country’s specific resources and political commitment constitutes an additional challenge for achieving MDG.