

## Life Expectancy and Mortality at Older Ages

### 1. Substantial gains in life expectancies at older ages have been made since 1950

Life expectancy at age 65 (also denoted as e65) for the world's population increased from 11.4 years in 1950-1955 to 16.2 years in 2005-2010, a gain of 4.8 years (figure 1). This translates into a gain of 0.8 years per decade, which is significantly higher than the estimated gain of 0.3 years per decade from 1850 to 1950 in many developed countries.<sup>1</sup>

Similar to the world as a whole, the more developed countries gained 4.8 years during that period, while the least developed countries experienced less progress, adding 3.5 years to the initial value of 9.9 years in 1950-1955. The other less developed countries (i.e. the less developed countries excluding the least developed countries), experienced a larger gain, estimated at 5.3 years.

### 2. Large diversities exist across major areas and regions

Older persons at age 65 in Latin America and the Caribbean (thereafter referred to as Latin America) outlived their counterparts in Africa and Asia by 2.5 years on average in 1950-1955. Sixty years later, the gap in expected remaining life at age 65 between Latin America and Africa has almost doubled to 4.8 years. The

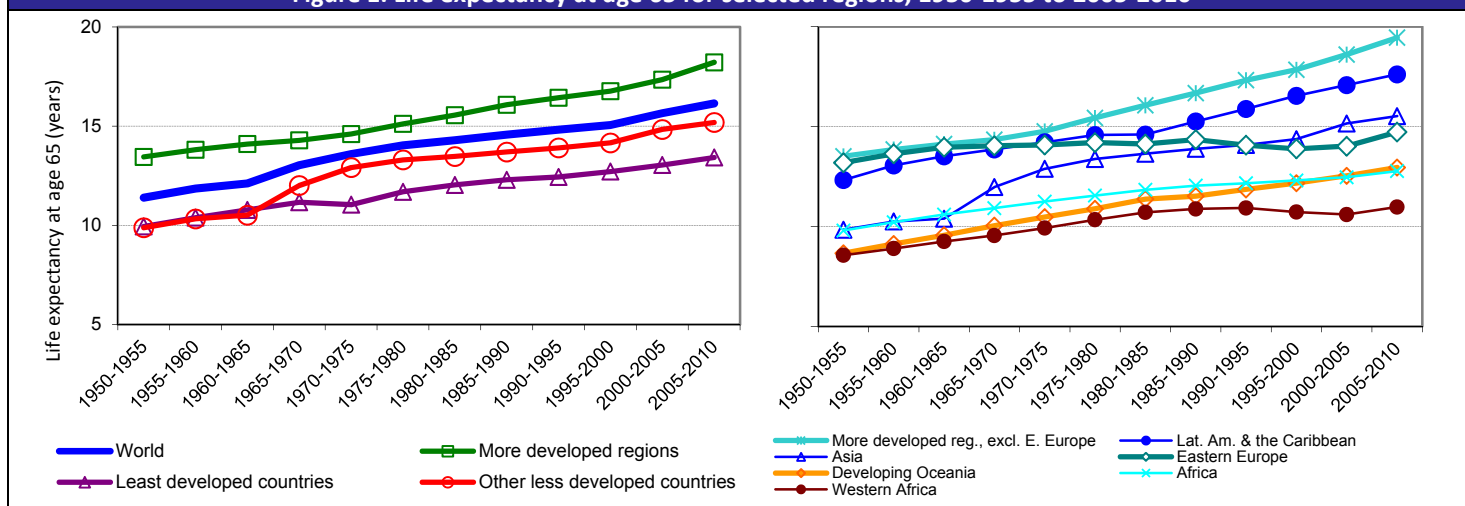
gap between Latin America and Asia has fluctuated over time from 2.5 years at the beginning of the period to less than 1 year around 1980-1985, to around 2.1 years today.

In the developed regions, Eastern Europe has had little improvement in life expectancy at age 65 since the 1950s, while the other developed regions witnessed a substantial increase. Indeed, the level of e65 in Eastern Europe has been lower than the world average since 1980 and lower than Asia since 1990. When Eastern Europe is excluded from the category "more developed regions", the average level of e65 in the remaining countries rose to 19.5 years in 2005-2010.

Within the less developed regions, Western Africa has had the lowest life expectancy at age 65 for at least the last sixty years, ranging from 8.6 years in 1950-1955 to 11 years in 2005-2010. Developing Oceania had a similar level of e65 as Western Africa in 1950-1955 but the gap between these two regions has increased since then and the level of e65 in Developing Oceania is now closer to that of Africa.

<sup>1</sup>All data are from: United Nations, Department of Economic and Social Affairs, Population Division (2013). *World Population Prospects: The 2012 Revision. Extended Dataset in Excel and ASCII formats, DVD Edition* (United Nations publication, ST/ESA/SER.A/334) except otherwise stated. Data on life expectancy prior to 1950 come from the human mortality database ([www.mortality.org](http://www.mortality.org)).

Figure 1. Life expectancy at age 65 for selected regions, 1950-1955 to 2005-2010



### 3. Large gaps in e65 remain

By 2005-2010, five countries or areas had e65 levels greater than 20 years,<sup>2</sup> the highest in the contemporary world. Among these “longest-lived” populations, the average length of the expected remaining life at age 65 was 20.6 years.

**The gap in e65 relative to the highest recorded is largest in Western African countries.** At just 11 years, on average, in 2005-2010, e65 in Western Africa lagged nearly 10 years behind that of the “longest-lived” populations. The five countries with the lowest levels of e65 in the world in 2005-2010 were all in Western Africa: Guinea (11.5 years), Côte d'Ivoire (10.8 years), Nigeria (10.4 years), Togo (10.2 years), and Sierra Leone (9.5 years).

**The gaps in other developing countries are also quite large.** The gap between countries in Latin America and the “longest-lived” populations was around 3.4 years on average, with the largest found in Haiti (7.1 years). For Asian countries, the average gap was around 5.1 years, with the greatest found in Afghanistan (8.2 years). The gap for countries in Developing Oceania was around 6.2 years, with the largest gap found in Papua New Guinea (8.7 years).

**With the exception of countries in Eastern Europe, e65 in the more developed countries is high;** e65 in today's Eastern European countries is on average nearly 6 years below that of the “longest-lived” populations, ranging from about 3.5 years in Poland to 7.5 years in the Republic of Moldova.

### 4. Mortality rates at older ages have declined substantially

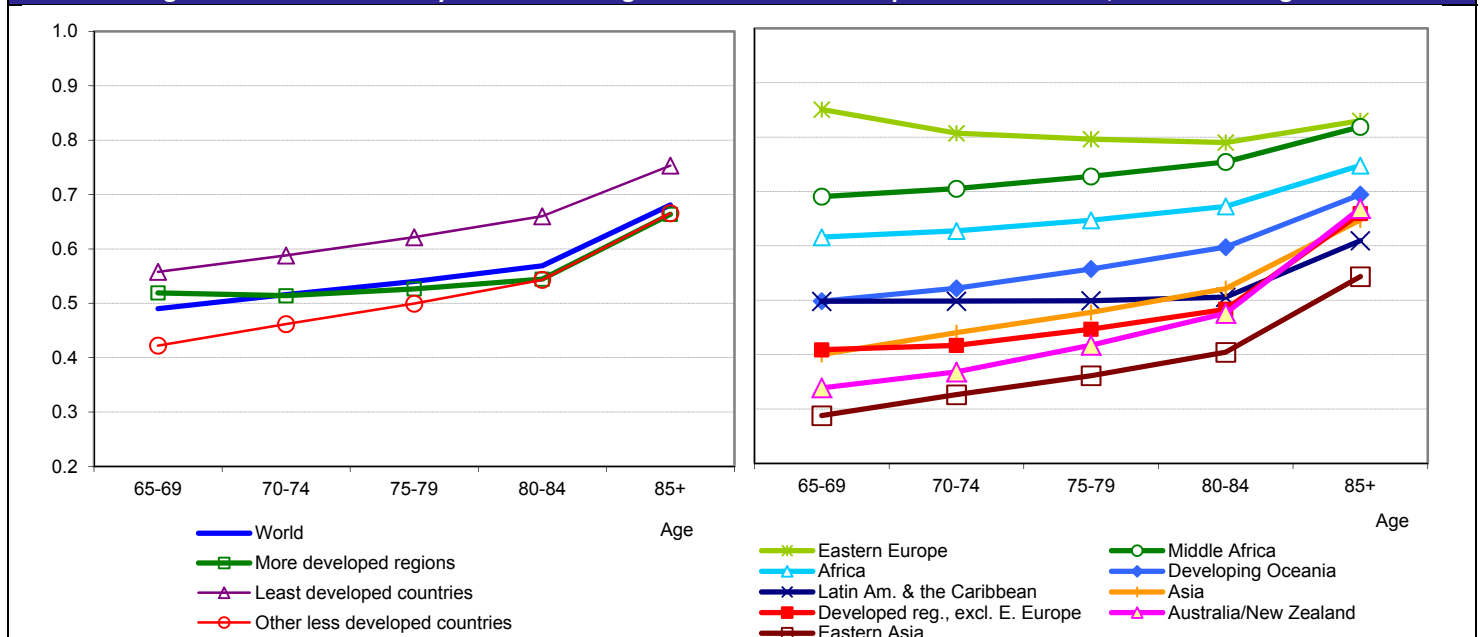
Today, mortality rates for the four five-year age groups from ages 65-69 to ages 80-84 at the world level are 50-60 per cent lower than they were sixty years ago, whereas the corresponding figure for ages 85 or over is about 68 per cent (figure 2). Among development groups, the more developed regions witnessed a smaller decline than the other less developed countries; however, if Eastern Europe is excluded from the comparison, the more developed regions had a greater decline than the other less developed countries. Mortality rates in the least developed countries today are 55-75 per cent lower than they were in 1950-1955, the smallest change of any of the development groups.

**Mortality rates in Asia are around 40-65 per cent of those in 1950-1955 for the all five age groups;** such declines are greater than those in Latin America and Africa.

**By region, Eastern Asia witnessed the greatest decline, with mortality rates today being 30-55 per cent of those sixty years ago for all five age groups.** Australia/New Zealand had the second largest decline. Australia/New Zealand had the second largest decline. Eastern Europe had the lowest decrease among all regions, smaller than that of the least developed countries as a whole, with current mortality rates being 80-85 per cent of those in the early 1950s. Mortality rates in Middle Africa today are 70-80 per cent of 1950-1955 levels, the smallest decrease in Africa (figure 2).

<sup>2</sup> The five countries with the highest life expectancy at age 65 in 2005-2010 are Australia, China, Hong Kong SAR, France, Japan and Switzerland.

Figure 2. Ratio of mortality rates at older ages in 2005-2010 as compared to 1950-1955, for selected regions



## 5. More people are surviving to older ages

**In 1950-1955 only 13 per cent of the world population at age 65 lived to age 85 (figure 3).** Sixty years later, this figure reached 33 per cent. About 43 per cent of the population who have reached age 65 today in the more developed regions will live to age 85 or over, in comparison to 21 per cent sixty years ago. The survival probability from age 65 to age 85 was around 8 per cent in least developed countries and other less developed regions in 1950-1955 and is now 21 per cent and 29 per cent, respectively.

**Northern America had the highest survival probability from age 65 to age 85 among six major areas in 1950-1955 (25 per cent),** yet this probability today is around 47 per cent, the second highest after Oceania (49 per cent). Africa has a probability of 18 per cent today, the lowest in the world, an improvement from 7 per cent in 1950-1955. Asia had a similar number as Africa sixty years ago (8 per cent), yet Asia has now reached 31 per cent.

**Mainly because of the very slow gains among the oldest-old in Eastern Europe, the survival probability from age 65 to age 85 in Europe only increased from 20 per cent in 1950-1955 to about 40 per cent in 2005-2010.** Although its survival probability (16 per cent) was lower than Europe in 1950-1955, Latin America now has a probability above 40 per cent, slightly higher than that of Europe.

**As a region and with a value of 54 per cent Australia/New Zealand ranked at the top in 2005-2010 in terms of survival probability from age 65 to age 85 followed by Western Europe (50 per cent) and Southern Europe (47 per cent).** Western Africa had the lowest value, with only 10 per cent in the same period. Middle Africa and Melanesia were the other two regions with the lowest

survival probabilities at older ages. Eastern Asia had the largest gain in survival at older ages over the last sixty years, from 6 per cent to 37 per cent (figure 3).

**At present, Japan, France, and Switzerland are the only three countries whose survival probability from age 65 to age 85 is greater than 55 per cent;** whereas Sierra Leone, Nigeria, and Togo are the only three countries whose survival probability from age 65 to age 85 is 10 per cent or less.

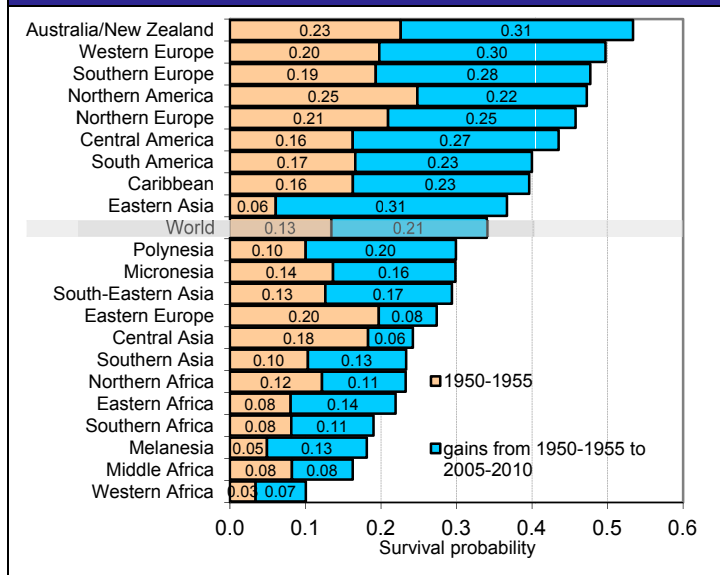
## 6. The proportion of deaths that occur at ages 80 or over has increased

**Globally, less than 6 per cent of all deaths were attributable to ages 80 or over in 1950-1955,** yet this figure reached nearly 22 per cent in 2005-2010 (figure 4).

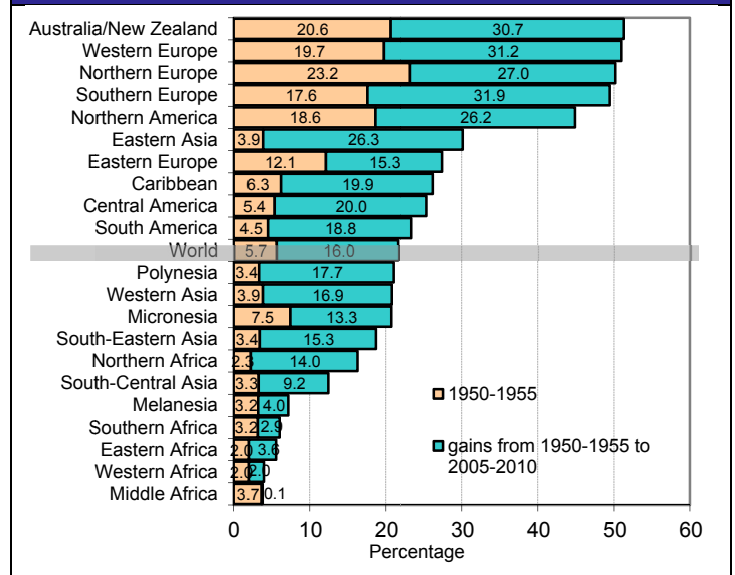
**Disparities across regions are growing.** On the one hand, regions such as Australia/New Zealand, Europe, and Northern America, that already had better survival prospects in 1950-1955 than the other regions, have made substantial gains (mostly by 25 or more percentage points). Eastern Asia has had an enormous increase in its proportion of deaths that occur at ages 80 or over, rising from 4 per cent to 30 per cent during the past 60 years. On the other hand, the regions of Middle, Western, Eastern and Southern Africa have made little gains, with less than a 4 percentage point gain during the past sixty years.

**There were thirteen countries in 2005-2010 whose share of death by ages 80 or over was above 50 per cent, including Japan, Australia and certain countries in Northern and Western Europe.** At the other end of the spectrum, there were twenty-two countries whose share of death by ages 80 or over was less than 5 per cent in 2005-2010. These countries were, for the most part, in Western, Middle and Eastern Africa.

**Figure 3. Survival probability from age 65 to age 85 in 1950-1995 and 2005-2010**



**Figure 4. Percentage of deaths that occur at ages 80 or over in 1950-1995 and 2005-2010**



## 7. Significant gains in life expectancies and steady decline in mortality rates by cohort

**Gains in remaining life expectancies at age 65 by birth cohort are similar to those by period.** The cohorts born in 1885-1890 lived on average about 12.2 years once they reached age 65, whereas the cohorts born in 1900-1905 and 1915-1920 lived 14.0 years and 15.0 years, respectively, after reaching age 65 (figure 5). The cohorts born in 1915-1920 lived 2.8 years longer than their counterparts born thirty years earlier, a gain of 0.9 years per decade.

**In the more developed regions, the gain in remaining life expectancy for the birth cohorts of 1915-1920 as compared to the cohorts of 1885-1890 is 2.6 years (16.7 vs. 14.1).** The corresponding figure for least developed countries is 2 years (12.5 vs. 10.5) and 3.3 years (14.0 vs. 10.7) for the other less developed countries.

**Death rate at ages 65-69 has gradually declined from nearly 50 per thousand for cohorts born in 1885-1890 to 25 per thousand for cohorts born in 1935-1940.** The death rates at ages 80-84 also witnessed a steady decrease from more than 150 per thousand for cohorts born in 1870-1875 to nearly 90 per thousand for cohorts born in 1920-1925.

## 8. Persistent gender gaps in life expectancy and mortality at older ages

**The gap in life expectancy at age 65 between men and women increased from 1.5 years in 1950-1955 to 2.5 years in 1975-1980 and has remained virtually unchanged since then (figure 6).** The female advantage in the more developed region increased from about 2 years in 1950-1955 to 3.5 years in 1975-1980, then plateaued for the next 20 years and subsequently declined slightly after 2000. As for the least developed countries, the gap was maintained at relatively low levels, ranging from 0.5 years before 1970 to 0.8 in 2005-2010. With a fluctuation in the

1960s, the gap in the “other less developed countries” witnessed a gradual increase from 1.1 years in 1950-1955 to 2.1 years in 2005-2010.

**The larger gender gaps in life expectancy at age 65 in 2005-2010 were found in Eastern Europe (4.0 years), Western Europe (3.7 years) and Southern Europe (3.6 years),** while the smaller gaps were found in Western Africa (0.4 years), Middle Africa (0.9 years) and Eastern Africa (1.1 years). Unlike other regions in Africa, Southern Africa’s gap (3.6 years) was the fourth largest in 2005-2010, and the fifth largest in 1950-1955.

**Worldwide, the gender gap in death rates at ages 65-69 and 85 and over have increased since 1950. In 2005-2010, the female death rate at ages 65-69 was about one-third lower than that of their male counterparts.** At older ages, the gap narrowed, reaching about 15 per cent at ages 85 or over. The corresponding figures for 1950-1955 were 25 per cent and 5 per cent, respectively.

**Today, in Eastern, Southern and Western Europe female death rates are about 50 per cent lower at ages 65-69 and 10-15 per cent lower at ages 85 or over than that of males.** The gender gap in mortality rate is smaller in Western, Middle, and Eastern Africa regions, with female rates being lower by 10 per cent at ages 65-69 and 2 per cent at ages 85 or over.

**The global gender gap in terms of survival probability from age 65 to age 85 is widening over time.** About 11 per cent of males and 16 per cent of females at age 65 in 1950-1955 were expected to live to age 85. In 2005-2010 these two figures increased to 28 per cent and 40 per cent. The gender difference in terms of share by the oldest-old out of the total deaths has also increased. The proportion of deaths shared by the oldest-old in 1950-1955 among females and males was 5 and 7 per cent, respectively; whereas these two figures reached 17 and 27 per cent in 2005-2010.

Figure 5. Death rate at old ages for selected birth cohorts

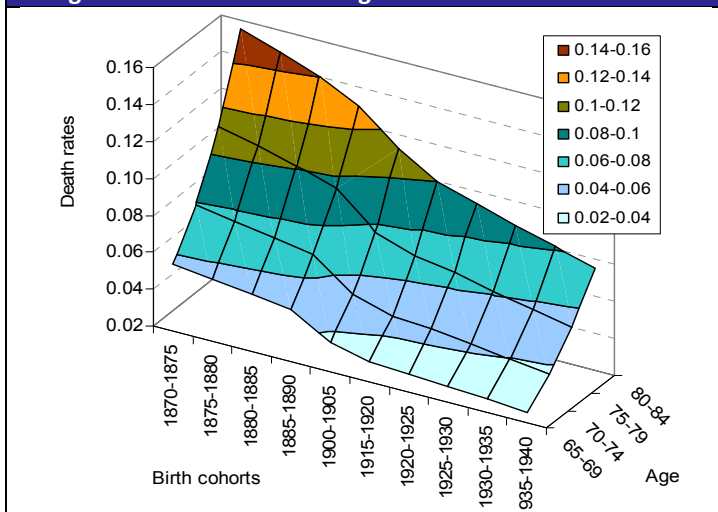


Figure 6. Gender gap (female-male) in life expectancy at age 65 by development group

