



## Cost of Non-Communicable Diseases

The R&D-based pharmaceutical industry recognizes the increasing burden that Non-Communicable Diseases (NCDs) place on patients and health systems around the world. In our fight to improve the health and quality of life of all patients, we are committed to continue our partnerships to tackle these complex issues including extensive investment in R&D programs dedicated to the development of new NCD preventative and treatment products. Both prevention and treatment play an important role in increasing our ability to tackle NCDs.

The pharmaceutical industry has long recognized the economic and social burden of non-communicable disease and has been working with governments, health care providers, patients groups and other stakeholders as an active solution partner in lessening this burden. The industry promotes and supports health prevention and promotion strategies and patient-centered approaches to managing chronic conditions and their risk factors. At the same time the global biopharmaceutical industry leads the search for new cures and the research and development of new medicines to treat or prevent non-communicable diseases. There are currently thousands of medicines either in clinical trials or awaiting approval to treat NCDs.

The World Economic Forum's 2009 *Global Risks Landscape Assessment Report* identified NCDs and chronic diseases as one of the most significant threats facing global economies.<sup>i</sup> In fact, there is universal agreement that chronic disease is one of the main drivers of health care costs. When determining the cost that chronic diseases have on national and global economies, both direct and indirect costs must be evaluated. Direct costs are those associated with treatment of a disease while indirect costs include the lost production caused by the disease.<sup>ii</sup>

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### Impact of Non-Communicable Diseases on Productivity

Countries throughout the world are expected to lose significant amounts of national income as a result of chronic disease's negative impact on labor supplies and a reduction in GDP. Labor supplies are reduced as a result of premature death or illness causing inability to work.

In 2005, heart disease, stroke and diabetes caused an estimated loss in national income of 18 billion international dollars in China, 9 billion in India and 3 billion in Brazil. These losses accrue over time because more people die each year so estimates for 2015 are three to six times that of 2005 for the same countries.<sup>iii</sup>

### Costs of Absenteeism and Presenteeism

Absenteeism is defined as absence from work due to illness while presenteeism is defined as productivity lost from ill employees coming to work and performing below the normal standard.<sup>iv</sup> In 2006, the United Kingdom had a working population of 37.7 million individuals.<sup>v</sup> There were 175 million days lost in 2006 to absence from illness. This amounts to 4.64 days lost due to illness per person. In the UK, the estimated cost – both direct and indirect – of absences due to illness was 20.2 billion pounds in 2006.<sup>vi</sup>

It is widely accepted that presenteeism has a larger effect than absenteeism, causing some to state that presenteeism is “1.8 times as important as absenteeism.”<sup>vii</sup> The science of understanding metrics and costs of presenteeism are still being developed, however controlling presenteeism and absenteeism is an area that will save employers money and also will contribute to the national economy.

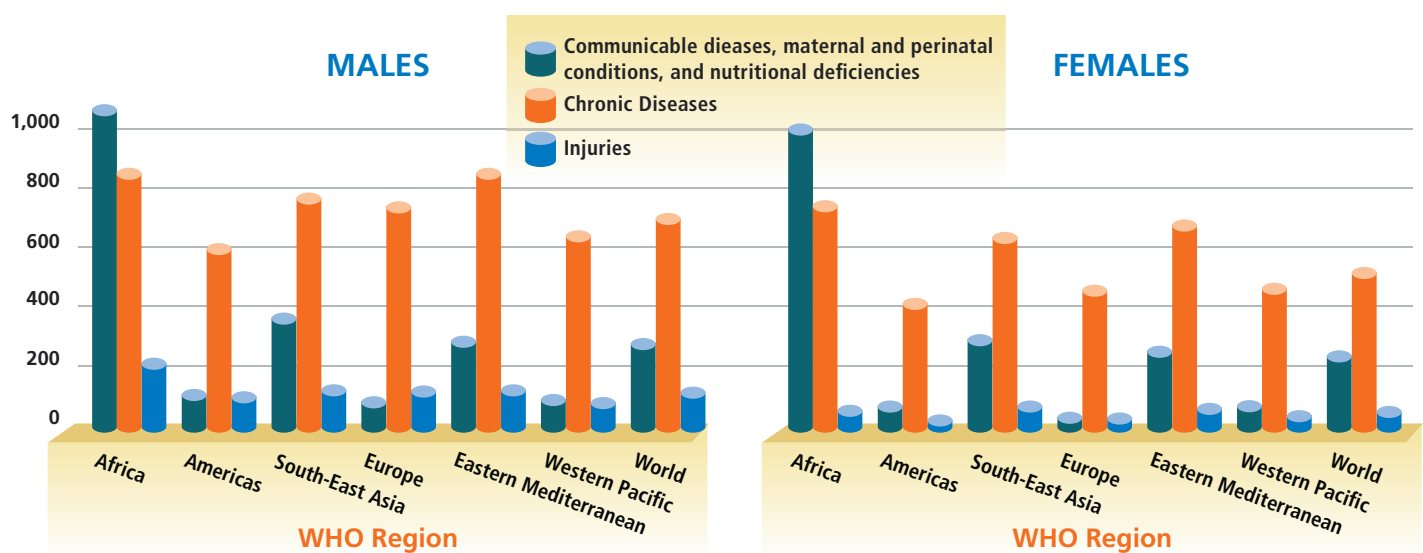
### Projections of Mortality and Disability by Age and Cause

Worldwide in 2008, there were 57 million deaths, of which 36 million (63%) were attributed to chronic diseases.<sup>viii</sup> Often thought to primarily affect older populations, chronic diseases are actually the cause of death for approximately 16 million people each year under the age of 70.<sup>ix</sup> The graphs below indicate that chronic disease is the leading cause of death for both males and females in every WHO region worldwide except Africa.

Chronic diseases are the leading cause of disability in all regions except Africa. Chronic diseases account for 48% of the global burden of disease or disability adjusted life years.<sup>x</sup> The distribution is similar to the charts in Figure 1.<sup>xi</sup>

Figure 1

### Projected Main Causes of Death, by WHO Region—All Ages, 2005



SOURCE: World Health Organization; *Preventing Chronic Diseases a Vital Investment*; World Health Organization Cataloguing-in-Publication Data, 2005, pg. 41

Even though deaths from communicable diseases, maternal and perinatal deficiencies and nutrition deficiencies are expected to decrease between 2005 and 2015, deaths caused by chronic diseases are expected to increase during this time period from 35 million per year to 41 million per year. The increase in the global burden of disease will also be reflective of the increase in deaths due to chronic diseases.<sup>xii</sup>

### Cost of Uncontrolled NCDs Vs. Costs of Medicines to Control NCDs

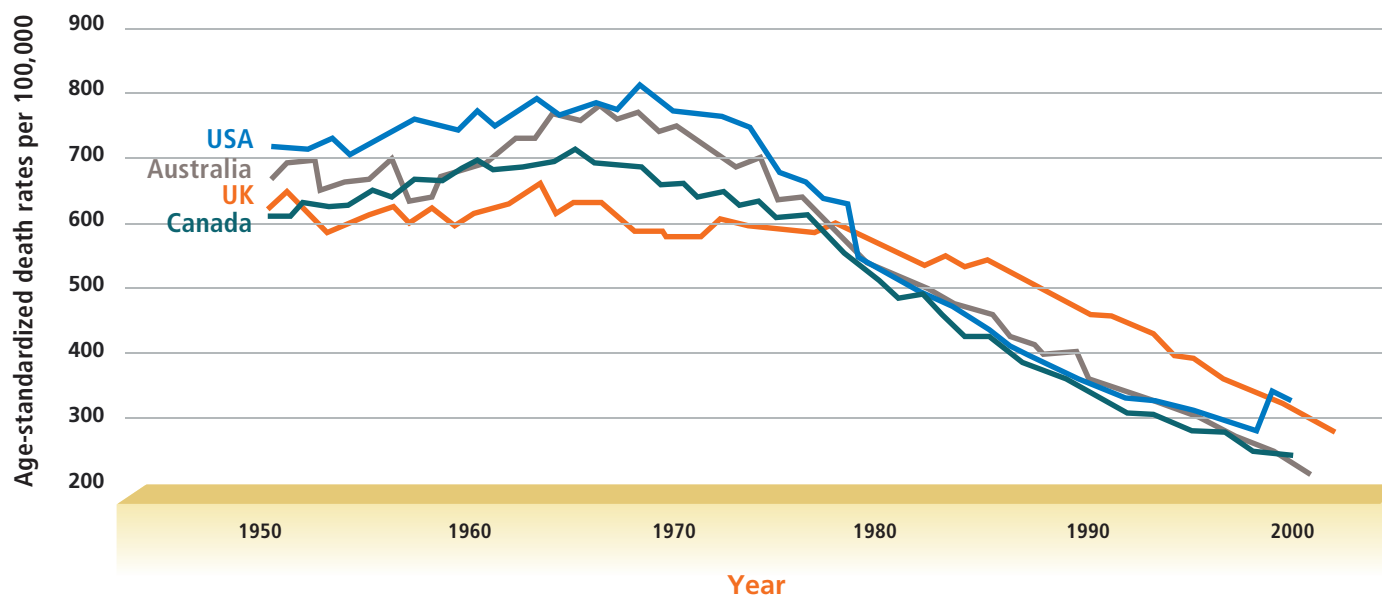
A number of measures can be implemented to help prevent NCDs. In fact, if chronic disease risk factors were eliminated, 80% of NCDs would be prevented. After the onset of a chronic disease though, there are cost-effective measures that can be taken to control NCDs. Many medications that are effective in controlling NCDs no longer face patent restrictions and can be manufactured for approximately one dollar per month.<sup>xiii</sup> In countries with more developed health care systems, medicines have decreased the burden of chronic diseases and reduced premature deaths due to chronic diseases. Additionally, they have significantly reduced health care costs and economic losses.<sup>xiv</sup> However, access to medicines in low-income countries with weak health care infrastructures is a major barrier to controlling chronic diseases in these countries.<sup>xv</sup>

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Mortality rates caused by chronic diseases have decreased in wealthier countries as a result of whole population and individual interventions. Between 1970 and 2000, the World Health Organization estimated that 14 million cardiovascular deaths were prevented in the United States while the United Kingdom prevented 3 million deaths during the same period. The following chart illustrates the declining death rates in the United States, Australia, the United Kingdom and Canada between 1950 and 2002.

Figure 2

### Heart Disease Death Rates, among men, aged 30 years or more, 1950–2002



SOURCE: World Health Organization; *Preventing Chronic Diseases a Vital Investment*; World Health Organization Cataloguing-in-Publication Data, 2005, pg. 25

### End Notes

- <sup>i</sup> World Economic Forum; *Global Risks 2009: A Global Risk Network Report*; July 2009; pg. 7
- <sup>ii</sup> World Health Organization; *Preventing Chronic Diseases a Vital Investment*; World Health Organization Cataloguing-in-Publication Data, 2005, pg. 77
- <sup>iii</sup> World Health Organization; *Preventing Chronic Diseases a Vital Investment*; World Health Organization Cataloguing-in-Publication Data, 2005, pg. 78
- <sup>iv</sup> "Well-being—absenteeism, presenteeism, costs and challenges," *Oxford Journals* 58.8: 522-524
- <sup>v</sup> Bray, Helen, Office for National Statistics. "2006 based national population projections for the UK and constituent countries," <http://www.gad.gov.uk/Documents/Demography/Projections/PT1312006-basedNPP.pdf>, pg. 15
- <sup>vi</sup> "Well-being—absenteeism, presenteeism, costs and challenges," *Oxford Journals* 58.8: 522-524
- <sup>vii</sup> Sainsbury Centre for Mental Health. *Mental Health at Work: Developing the Business Case*. Policy Paper 8. London. Sainsbury Institute for Mental Health, 2007
- <sup>viii</sup> World Health Organization; *Global Status Report on Noncommunicable Diseases*; World Health Organization Cataloguing-in-Publication Data, 2011, pg. 9
- <sup>ix</sup> World Health Organization; *Preventing Chronic Diseases a Vital Investment*; World Health Organization Cataloguing-in-Publication Data, 2005, pg. 37
- <sup>x</sup> World Health Organization; *Preventing Chronic Diseases a Vital Investment*; World Health Organization Cataloguing-in-Publication Data, 2005, pg. 39
- <sup>xi</sup> World Health Organization; *Preventing Chronic Diseases a Vital Investment*; World Health Organization Cataloguing-in-Publication Data, 2005, pg. 42
- <sup>xii</sup> World Health Organization; *Preventing Chronic Diseases a Vital Investment*; World Health Organization Cataloguing-in-Publication Data, 2005, pg. 57
- <sup>xiii</sup> World Health Organization; *Preventing Chronic Diseases a Vital Investment*; World Health Organization Cataloguing-in-Publication Data, 2005, pg 18-19
- <sup>xiv</sup> Michael Gordoff and Michael R. Reich, "Partnerships to Provide Care and Medicine for Chronic Diseases: A Model For Emerging Markets," *Health Affairs* 29 (December 2010): 2206
- <sup>xv</sup> International Federation of Pharmaceutical Manufacturers and Associations, [www.ifpma.org](http://www.ifpma.org)