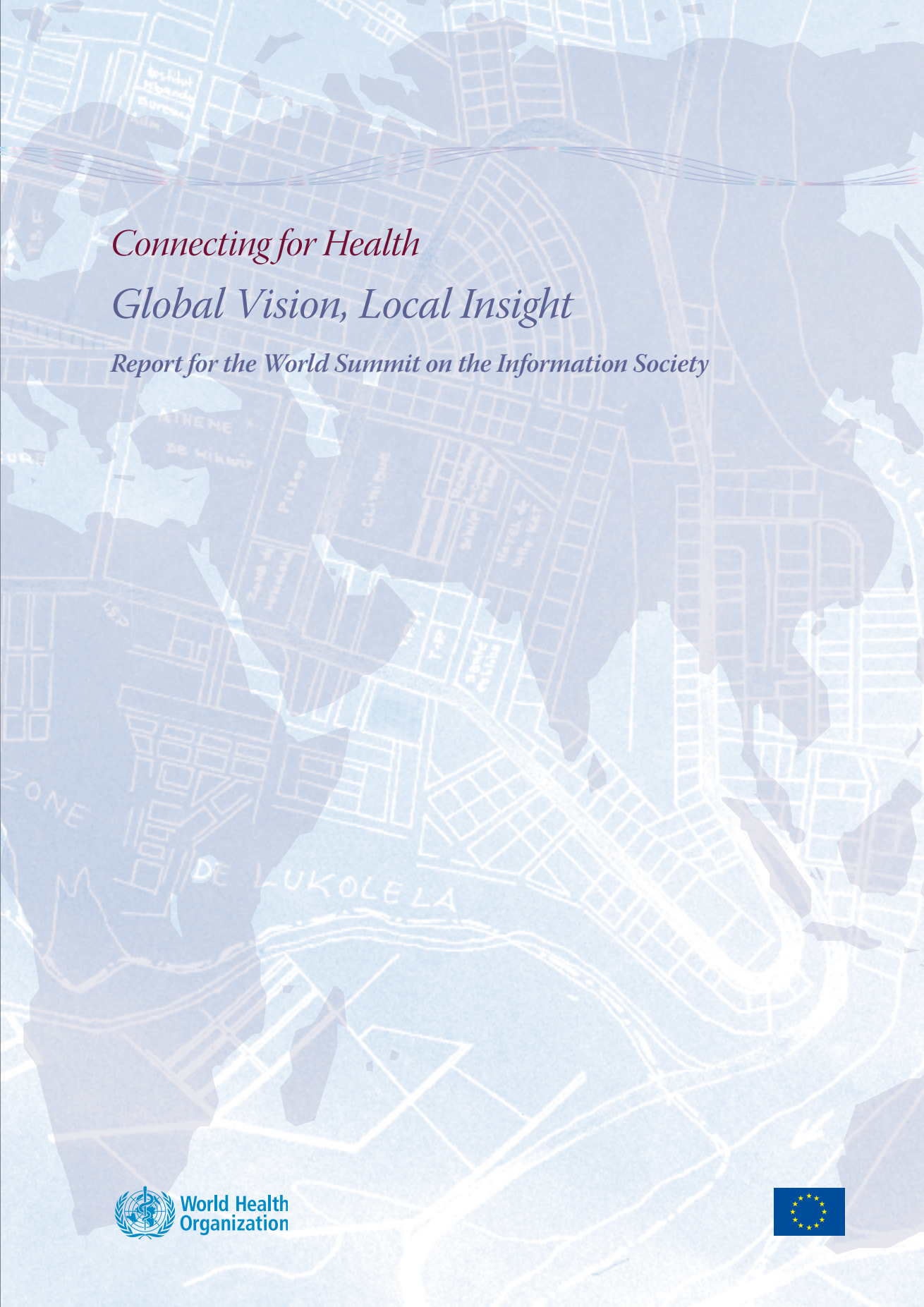

Connecting for Health

Global Vision, Local Insight

Report for the World Summit on the Information Society

World Health Organization

Acknowledgements

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Cover image
Base image: Hand-drawn street map of Kikwit, Democratic Republic of the Congo, used for recording cases and contacts to respond to an outbreak of Ebola haemorrhagic fever, 1996.

Source: Department of Emerging and Other Communicable Diseases Annual Report, 1996. WHO, Geneva, 1996.

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Connecting for Health

Global Vision, Local Insight

Report for the World Summit on the Information Society

The use of information and communication technologies (ICT) for health, or 'eHealth', today represents one of the key instruments for health care delivery and public health. Efficient and robust eHealth solutions have already demonstrated their value, particularly in facing new global health challenges such as emerging epidemics or the health consequences of natural disasters. Towards achievement of the Millennium Development Goals, it is the health community's common responsibility to increase the implementation of eHealth, particularly in developing countries.

The barrier to this is no longer only technical or financial. Rather, it is also the ability to plan and implement eHealth on a large scale, while adapting it to local health problems, that presents the greatest challenge. This is also the goal of the initiative *i2010: European Information Society 2010*. It is an enormous task, and one that cannot be achieved alone – active collaboration is crucial.

The World Health Assembly eHealth Resolution (WHA58/28) approved earlier this year underscores the World Health Organization's commitment to advancing eHealth. The Organization is pleased to present this report for the World Summit on the Information Society, developed with the support of the European Commission.

Connecting for Health: Global Vision, Local Insight represents a starting point and an instrument for action, bringing together statistics in health, development and ICT to show the opportunities for eHealth in countries. Additionally, it highlights the need for a global, long-term and collaborative approach so that all the citizens of the world may benefit from the best eHealth solution possible.

LEE Jong-wook
Director-General
World Health Organization

Viviane Reding
European Commissioner
Information Society and Media

I. Improving health: a common purpose

The changing picture of global health

The world has seen significant gains in health in the past 50 years, due not only to advances in science, technology and medicine, but also to expanded infrastructures, rising incomes and better nutrition, sanitation, literacy and opportunities for women. The average life expectancy at birth has increased globally by almost 20 years, from 46.5 years in 1955 to over 65 years in 2002. But while health has improved worldwide, progress is slowing and gaps are widening. The global health pattern today is one of extreme diversity and inequity, with many countries facing a double burden of infectious diseases and increasing rates of noncommunicable diseases as people live longer.

In many countries the fundamental conditions for health have not been achieved: peace, shelter, education, food, income, a stable ecosystem, sustainable resources, social justice and equity. Long-standing gaps between the health status of the wealthy and that of the poorest segments of the population are increasing. Urban-rural gaps remain wide, and in some countries HIV/AIDS is drastically reversing hard-won gains to health.

The Millennium Development Goals

As countries came together to establish the United Nations Millennium Development Goals (MDGs) in the year 2000, they were facing daunting challenges in health and development. They were also facing the impact of the growth of technological capabilities, rapid urbanization and environmental changes, and major shifts towards decentralization and community-based initiatives. These changes occurred in a world of revised expectations about the role of government: that the public sector has neither the financial nor the institutional resources to meet their challenges, and that a mix of public and private resources is required. This was accompanied by a shift to a more people-centred approach to development. Where physical and financial capital were once seen as critical constraints, social capital became the factor seen as limiting holistic, integrated development.

Health and ICT are closely linked

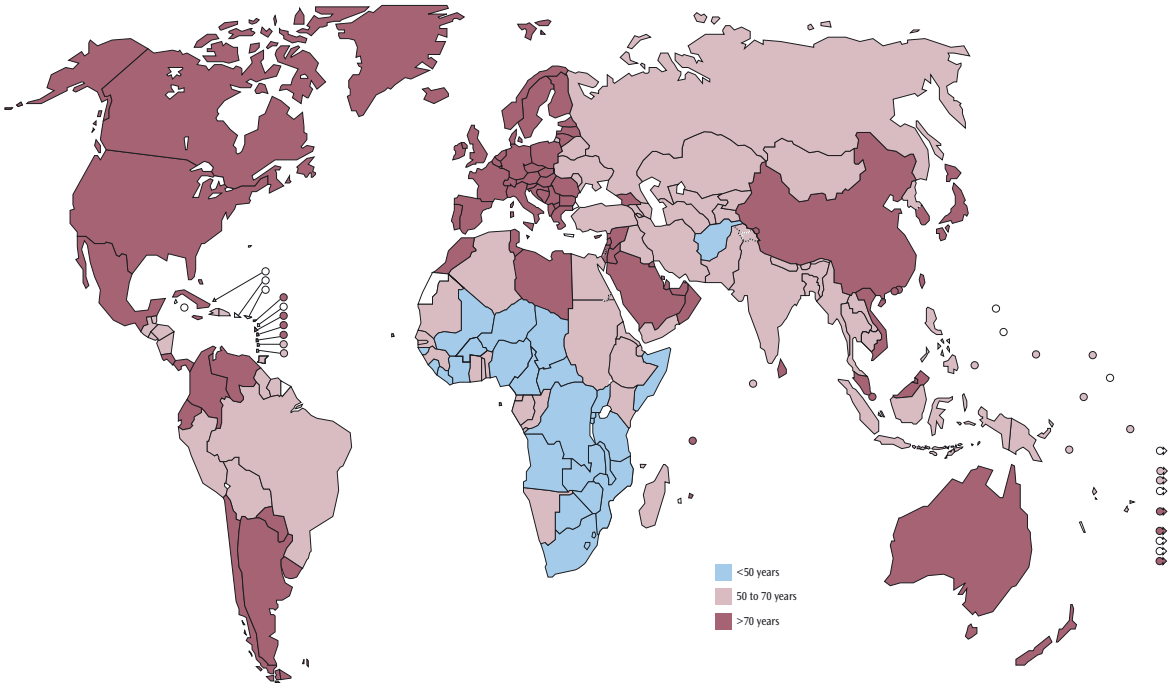
The Millennium Development Goals place health at the heart of development. At the time, countries were unprepared for the acceleration of the HIV/AIDS epidemic, the emergence and resurgence of infectious diseases, and the rising threat of terrorism. What has also changed in the years since the MDGs were ratified is the awareness of the importance of information and communication technologies (ICT) in meeting health targets. And while ICT diffusion was one target to be achieved in the MDGs, it was not linked to health in any substantive way. Today, health is increasingly seen as a driver for – as well as a beneficiary of – ICT development in countries.

A common purpose

Effective action to improve the health of populations is possible in every country. But beyond the global vision of the MDGs, it takes local knowledge and joint action to turn that possibility into a reality. This report, prepared for the second phase of the World Summit on the Information Society, outlines the opportunities for ICT in health and actions needed to realize this.

Ministries of Health play a pivotal role, not only in meeting people's needs for care and protecting public health, but in preserving health systems through turbulent and uncertain times. Ministries of Information Technology and Telecommunications are key to development in all spheres, and can make a vital contribution to the health sector. Common goals and a predictable ICT environment enable coordinated action: building consensus on policy, and facilitating better use of resources, involvement of the private sector, and sound investment in ICT skills and infrastructure to benefit health.

Life expectancy at birth, 2003



Source: The world health report 2005. Geneva, WHO, 2005.

II. Towards new health paradigms: eHealth

◆ *ICT is changing health care delivery...*

Advances in ICT have yielded substantial dividends to individual and public health. From the local level to the national level, ICT is changing how health care is delivered and how health systems are run. Today, ICT is fundamental for health systems to meet obligations to deliver care, pursue research, educate students, treat patients and monitor public health.

ICT in its many forms is essential for coordinating complex activities, ensuring quality, fostering collaboration and sharing the growing body of knowledge in health. Few would argue against these activities as central to the sustainability of health systems. At a time when population growth, rapid urbanization and poverty are putting greater demands on health systems, governments are aware that incorporating ICT is not only a technical issue but also a priority for health systems development.

◆ *... and is at the core of responsive health systems*

The past four decades have seen dramatic changes in what information and communication technologies can bring to health systems and services. In the same way that they have become integral to business and government, the use of ICT in health – eHealth – shows no signs of slowing. The extraordinary value of these technologies lies not only in the information that can now be exchanged but also in their ability to bring people together to build and shape partnerships and a joint programme of action, enabling more informed decision-making and more cost-effective use of resources.

In all areas of health, from molecular genetics to humanitarian and disaster relief, ICT can support critical functions by improving the ability to gather, analyse, manage and exchange information. In health professional education and training, ICT facilitates formal and informal learning. Furthermore, these technologies underpin the expansion of the world's health knowledge: linking systems, enabling research, improving capabilities and communication for health.

Examples of ICT in health

ICT in public health practice	ICT in clinical care and laboratory practice
Identify disease and risk factor trends	Track and provide patient information
Model diseases in populations	Enable communication between patients and professionals
Analyse demographic and social data	Deliver services despite distance and time barriers via 'telemedicine'
Access research, publications and databases	Standardize ordering and delivery of drugs and supplies
Monitor and communicate potential threats to health	Monitor quality and safety in patient care settings

◆ *Connecting for health: people, information and research*

ICT in health is no longer merely about technology. In the delivery of health care, it is about health professionals making better treatment decisions, hospitals providing higher quality and safer care, citizens making informed choices about their health, and governments becoming more responsive to health needs. It is about national and local information systems that support the development of effective, efficient and equitable health systems, advising policy-makers and the public of impending threats as well as longer-term risks to health. Above all, it is about connecting people to the information and knowledge they need for better health.

Towards new eHealth paradigms

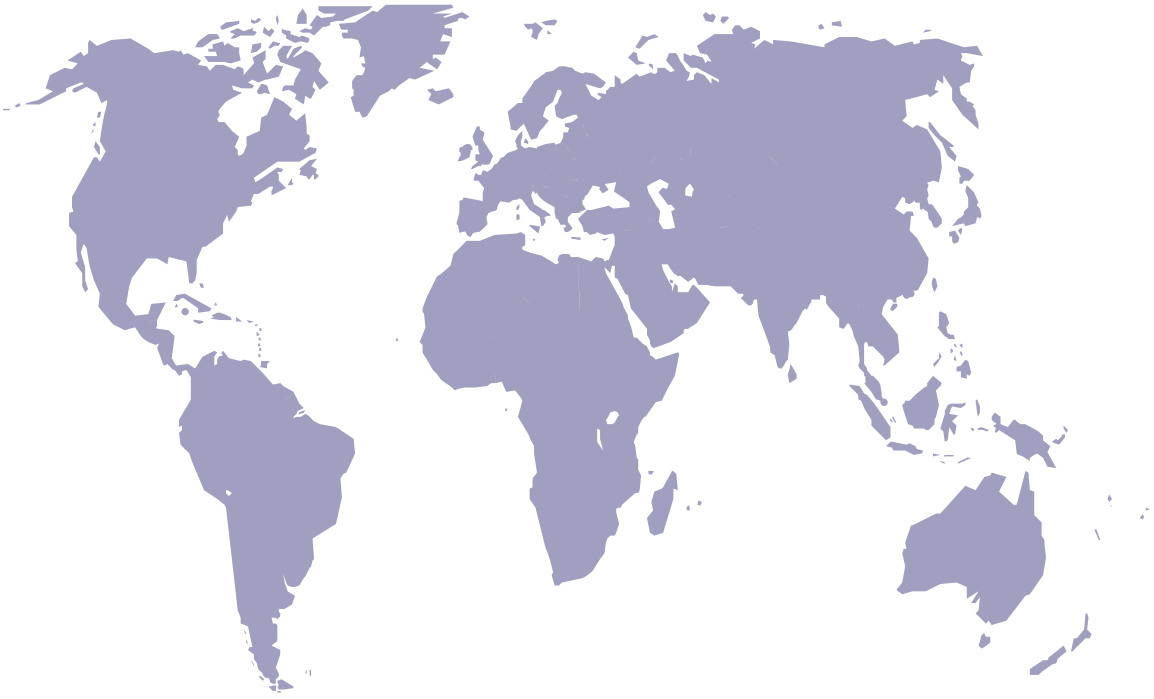
Stakeholders	Impact of ICT
Citizens	Allows personalized, citizen-centred care Health at home, in the workplace, or school – not just the hospital Focus on prevention, education and self-management Reaching out to peers for advice and support
Professionals	Readily available high-quality distance-based learning for continuing professional education Remote consultations with patients, second opinions and professional networks Access to current, specialized, accredited knowledge for clinical care, research and public health
Hospitals and academia	Hospitals as a virtual network of providers, connecting all levels of the system Quality and safety: improving care processes and reducing the possibility of medical errors. Facilitating mobility of citizens and their medical records New opportunities in basic and applied research: from health knowledge to action Collaboration and shared computing power (e.g., grid computing)
Health-related businesses	Providing health content as a commodity to the public and health professionals Research and development of new products and services: electronic health records, information systems, clinical registries Broad and cost-effective marketing for health products and services
Governments	Health increasingly central to economy, security, foreign affairs and international relationships Limiting factor is no longer technology, but enabling environments New roles for stakeholders: health professionals and authorities, citizens
International agencies	Need for rapid, coordinated response to global threats: natural disasters, infectious diseases and bioterrorism Growing awareness of importance of ICT in sustainable health systems

III. Shared global challenges

This is a time when national and local decisions are affected as never before by global forces. Demographic trends interact with increasing urbanization, the integration of economies transforms production systems and labour markets, technological change expands analytic capabilities and communications. The spread of information and communication technologies have brought tremendous potential and along with it, new challenges for the health sector in the information age.

◆ *Understanding the impact of ICT in health*

Across the world, innovations in ICT come mainly from the private sector and do not necessarily reflect health sector priorities. Adoption in the health sector often occurs without comprehensive evaluation of the health impact or a true understanding of the added value of ICT to health services. Although policy-makers need to understand the impact and longer-term return on investment, there is little to guide them. Health academics and policy-makers must take on this challenge by developing the evidence base in this area: developing and sharing evaluation methods, critical success factors and best practice in utilization of ICT in health across a wide range of settings.



Security in an online environment

Security threats damage overall trust in the Internet and have serious implications for public health. In particular, these threats can undermine the growth of eHealth services where they are most needed. Consequences can be more severe for developing economies where there is a lack of awareness, protection tools, legislation and enforcement. Every year malicious attacks are more disruptive as attack tools become more powerful, damaging and widespread. Cyber criminals hide in countries with weak laws, exploit Internet service providers with weak policies, and operate through insecure third parties.

In response, basic measures are required to ensure that critical resources are not diverted from health concerns to deal with recurrent and catastrophic security issues. Building a global culture of security and cooperation is vital. A holistic approach includes technology measures, standards, legislation, norms and education. Since the legal process is often slow, other complementary measures need to be taken, such as industry initiatives, better enforcement and international cooperation.

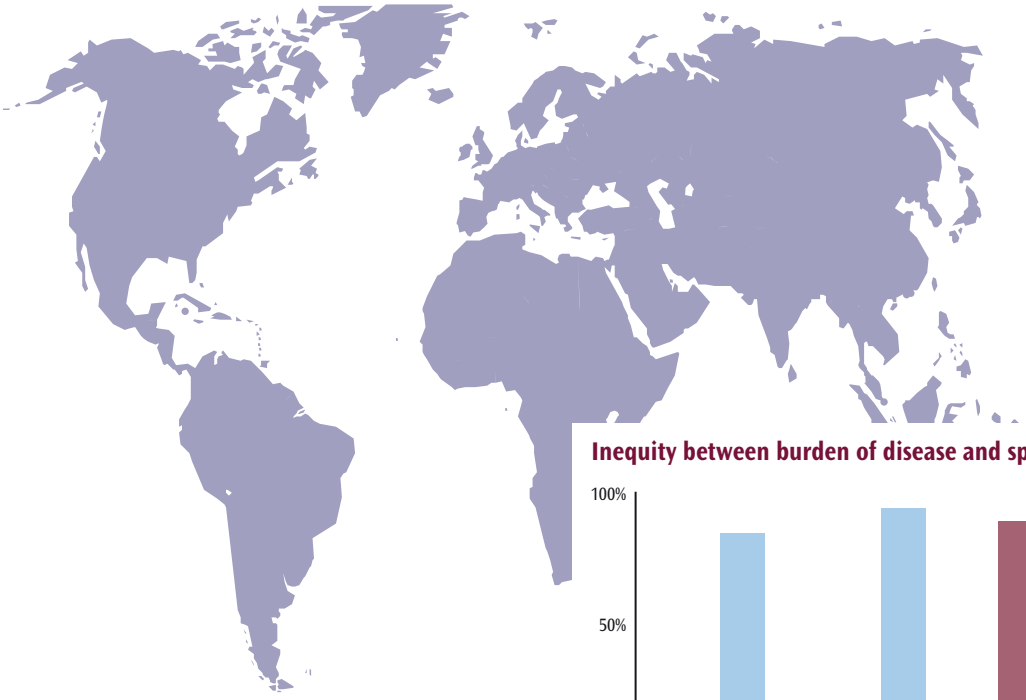
Spam

Unsolicited e-mail messages, or spam, is a growing global threat to the online environment. Through 'health spam', vulnerable e-mail recipients spend money on cures of unknown quality: prescription and non-prescription drugs, herbs and medical devices. Globally, health spam is already an enormous enterprise and has become increasingly damaging, as it is now used for criminal activity, primarily identity theft for the purpose of committing financial fraud. It can compromise data privacy and consumer protection and spread computer viruses, undermining user trust online and increasing costs for companies and Internet service providers. Countries have put in place measures to address spam, but no single approach is likely to succeed without close international cooperation. Health legislation in countries will need to address fraud in the online environment, and international coordination will become an important tool to control advertising and illegal sales of pharmaceutical and other health products over the Internet.

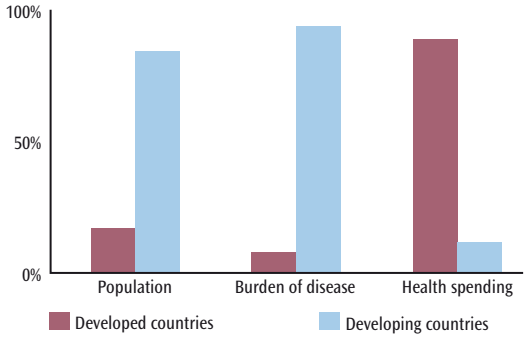
Borderless health

With the globalization of health information, goods and services, increasing patient mobility, and spread of eHealth businesses come new challenges for consumer protection. Interconnectedness demands new practices to ensure that information systems across and between institutions are not only compatible, but also offer basic protections. This requires policy coordination as much as technical innovation. For example, who pays and who is accountable for providing cross-border health services? How can privacy, security and confidentiality of the electronic health record be assured? How can quality and safety of pharmaceutical and medicinal products sold online be guaranteed? These types of issues require revision of old standards and regulations to consider the safety and privacy of citizens in a networked world. In many countries, new policy and legal frameworks must be developed as part of the global solution.

IV. World view



Inequity between burden of disease and spending



Source: The world health report 2003. Geneva, WHO, 2003.

Health systems in every country are facing considerable challenges in providing high-quality, safe and universally-accessible care. Health care costs continue to rise. Some countries are undertaking a major overhaul of their health systems, while others are striving to be more responsive to the needs of the public. While there are already many established, advanced applications of ICT in health, countries have a long way to go before the adoption of ICT in the health sector is universally reflected in health education, practice and research settings. It is essential for decision-makers at all levels of the health system to be able to make well-founded assessments of the trends and developments likely to influence the future and to consider what the implications might be. It falls to them to design and implement measures today to help the sector meet the challenges of tomorrow. The following sections are intended to improve understanding of the diversity and range of eHealth opportunities. While they are by no means exhaustive, they provide a picture of health and ICT diffusion in each WHO region, with opportunities for eHealth highlighted in each section.

World population by WHO Region, projections for 2005

WHO Region	Population (000)
Africa	738 086
Americas	886 333
South-East Asia	1 656 529
Europe	882 731
Eastern Mediterranean	538 001
Western Pacific	1 743 954

Source: World population prospects: the 2004 revision. Population Division of the Department of Economic and Social Affairs of the United Nations Secretariat, 2004.

WHO Member States, by region and mortality stratum

Region and mortality stratum	Description	Broad grouping	Member States
Africa			
Afr-D	Africa with high child and high adult mortality	High-mortality developing	Algeria, Angola, Benin, Burkina Faso, Cameroon, Cape Verde, Chad, Comoros, Equatorial Guinea, Gabon, Gambia, Ghana, Guinea, Guinea-Bissau, Liberia, Madagascar, Mali, Mauritania, Mauritius, Niger, Nigeria, Sao Tome and Principe, Senegal, Seychelles, Sierra Leone, Togo
Afr-E	Africa with high child and very high adult mortality	High-mortality developing	Botswana, Burundi, Central African Republic, Congo, Côte d'Ivoire, Democratic Republic of the Congo, Eritrea, Ethiopia, Kenya, Lesotho, Malawi, Mozambique, Namibia, Rwanda, South Africa, Swaziland, Uganda, United Republic of Tanzania, Zambia, Zimbabwe
Americas			
Amr-A	Americas with very low child and very low adult mortality	Developed	Canada, Cuba, United States of America
Amr-B	Americas with low child and low adult mortality	Low-mortality developing	Antigua and Barbuda, Argentina, Bahamas, Barbados, Belize, Brazil, Chile, Colombia, Costa Rica, Dominica, Dominican Republic, El Salvador, Grenada, Guyana, Honduras, Jamaica, Mexico, Panama, Paraguay, Saint Kitts and Nevis, Saint Lucia, Saint Vincent and the Grenadines, Suriname, Trinidad and Tobago, Uruguay, Venezuela
Amr-D	Americas with high child and high adult mortality	High-mortality developing	Bolivia, Ecuador, Guatemala, Haiti, Nicaragua, Peru
South-East Asia			
Sear-B	South-East Asia with low child and low adult mortality	Low-mortality developing	Indonesia, Sri Lanka, Thailand
Sear-D	South-East Asia with high child and high adult mortality	High-mortality developing	Bangladesh, Bhutan, Democratic People's Republic of Korea, India, Maldives, Myanmar, Nepal, Timor-Leste
Europe			
Eur-A	Europe with very low child and very low adult mortality	Developed	Andorra, Austria, Belgium, Croatia, Cyprus, Czech Republic, Denmark, Finland, France, Germany, Greece, Iceland, Ireland, Israel, Italy, Luxembourg, Malta, Monaco, Netherlands, Norway, Portugal, San Marino, Slovenia, Spain, Sweden, Switzerland, United Kingdom
Eur-B	Europe with low child and low adult mortality	Developed	Albania, Armenia, Azerbaijan, Bosnia and Herzegovina, Bulgaria, Georgia, Kyrgyzstan, Poland, Romania, Serbia and Montenegro, Slovakia, Tajikistan, The former Yugoslav Republic of Macedonia, Turkey, Turkmenistan, Uzbekistan
Eur-C	Europe with low child and high adult mortality	Developed	Belarus, Estonia, Hungary, Kazakhstan, Latvia, Lithuania, Republic of Moldova, Russian Federation, Ukraine
Eastern Mediterranean			
Emr-B	Eastern Mediterranean with low child and low adult mortality	Low-mortality developing	Bahrain, Iran (Islamic Republic of), Jordan, Kuwait, Lebanon, Libyan Arab Jamahiriya, Oman, Qatar, Saudi Arabia, Syrian Arab Republic, Tunisia, United Arab Emirates
Emr-D	Eastern Mediterranean with high child and high adult mortality	High-mortality developing	Afghanistan, Djibouti, Egypt,[a] Iraq, Morocco, Pakistan, Somalia, Sudan, Yemen
Western Pacific			
Wpr-A	Western Pacific with very low child and very low adult mortality	Developed	Australia, Brunei Darussalam, Japan, New Zealand, Singapore
Wpr-B	Western Pacific with low child and low adult mortality	Low-mortality developing	Cambodia,[b] China, Cook Islands, Fiji, Kiribati, Lao People's Democratic Republic,[b] Malaysia, Marshall Islands, Micronesia (Federated States of), Mongolia, Nauru, Niue, Palau, Papua New Guinea,[b] Philippines, Republic of Korea, Samoa, Solomon Islands, Tonga, Tuvalu, Vanuatu, Viet Nam

[a] Following improvements in child mortality over recent years, Egypt meets criteria for inclusion in subregion Emr-B with low child and low adult mortality. Egypt has been included in Emr-D for the presentation of subregional totals for mortality and burden to ensure comparability with previous editions of *The World Health Report* and other WHO publications.

[b] Although Cambodia, the Lao People's Democratic Republic, and Papua New Guinea meet criteria for high child mortality, they have been included in the Wpr-B subregion with other developing countries of the Western Pacific Region for reporting purposes.

Source: The world health report 2003. Geneva, WHO, 2003.

V. Creating the conditions for eHealth

The World Health Organization separates countries into mortality strata by region. This enables better analysis of health conditions and improves planning to address country priorities. Health conditions, in the context of ICT diffusion in countries, provides a basis for outlining opportunities for action in eHealth at the regional and country level.

◆ *Countries with low mortality (Strata A, B, C)*

Today, noncommunicable diseases – a heterogeneous group that includes causes of death such as cardiovascular diseases and cancer, and major causes of disability such as mental disorders – contribute significantly to the burden of disease in middle- and high-income countries. Tobacco use, consumption of a high-fat diet, and other health risks will make noncommunicable diseases the dominant causes of death, disease and disability worldwide in the coming decades. Tobacco use is a risk factor for some 25 diseases and while its effects on health are well known, the sheer scale of its impact on disease now and in the future is still poorly appreciated. Injuries and violence are also likely to increase in importance, in part as a result of increased use of motor vehicles, urbanization and industrialization. Increasingly, countries are faced with the so-called double burden of disease, where infectious and parasitic diseases, nutritional deficiencies and reproductive health problems remain prevalent and where chronic, noncommunicable diseases are rising.

WHO's mortality strata

Stratum	Child mortality	Adult mortality
A	Very low	Very low
B	Low	Low
C	Low	High
D	High	High
E	High	Very high

In high-income countries the historically important infectious diseases have declined to very low levels. As in the middle-income countries, these threats have been replaced by the chronic and degenerative diseases of adult life, such as cancer, stroke, lung and heart disease, arthritis and central nervous system disorders.

◆ *Countries with high mortality (Strata D & E)*

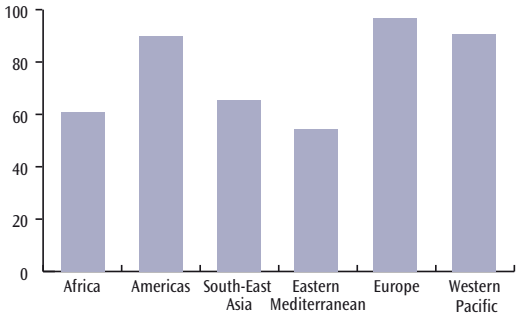
The health situation of high-mortality countries is characterized by a high incidence of communicable diseases. The majority of deaths still occur in children under the age of five, largely due to conditions that are preventable, or are amenable to early intervention. In the poorest parts of the world, diseases associated with poverty remain major contributors to the burden of disease. Maternal deaths are still unacceptably common. There is a high occurrence of acute respiratory infections, diarrhoeal diseases, malnutrition and nutritional deficiency disorders, vector-borne diseases and tuberculosis. In particular, the persistence of malaria and tuberculosis, the emergence of chronic noncommunicable disease, and the pandemic of AIDS will pose challenges well into the future.

◆ *ICT diffusion*

Despite the potential benefits of ICT, developing countries face significant obstacles to improving connectivity and access. Improving uptake of ICT requires better awareness of what these technologies can offer; available and affordable telecommunications infrastructure, Internet and other technologies; adequate legal and regulatory frameworks; presence of ICT skills; local language and content; and a business culture open to change, transparency and equity. National ICT strategies created to deal with these challenges must consider how ICT use and impact will be measured, and how best to link ICT policies to other development policies such as education, trade and health, to allow for synergies and broad diffusion of ICT.

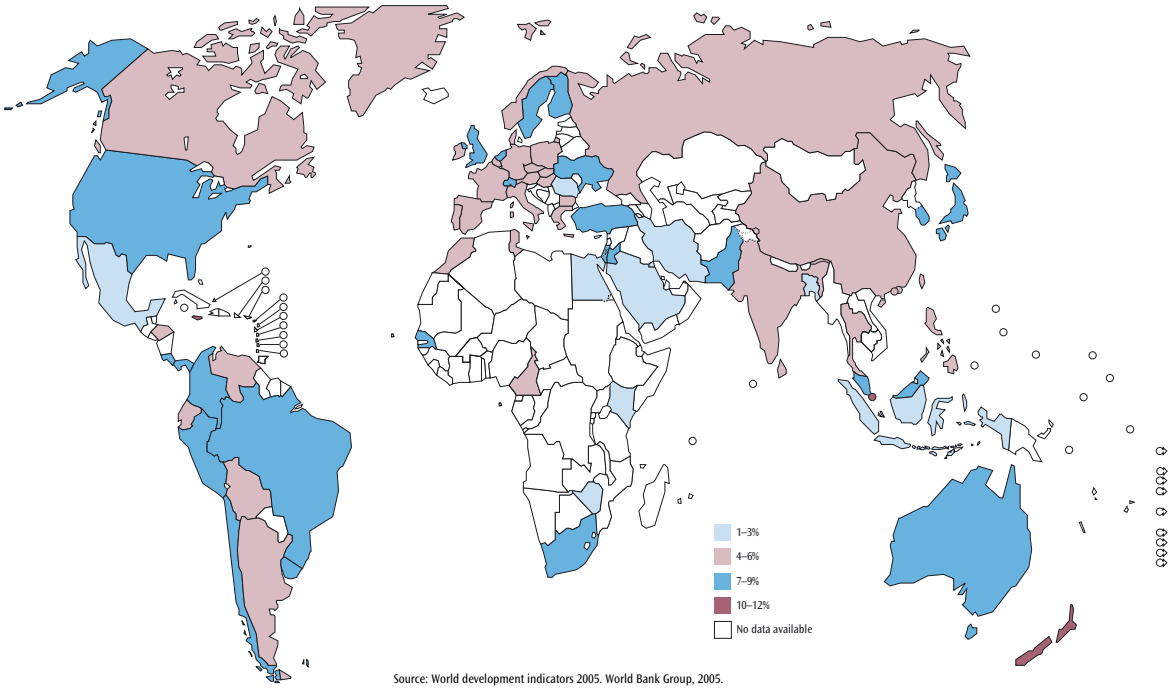
Language barriers and illiteracy have been identified as common obstacles to ICT access. The convergence of voice, video and images, and the increasing variety of languages available on the Internet means that the importance of this obstacle may be diminishing. However, text-based rather than voice protocols still remain the most widely-used Internet applications, so basic literacy is still considered an important determinant of access.

Adult literacy by WHO Region, projections for 2005

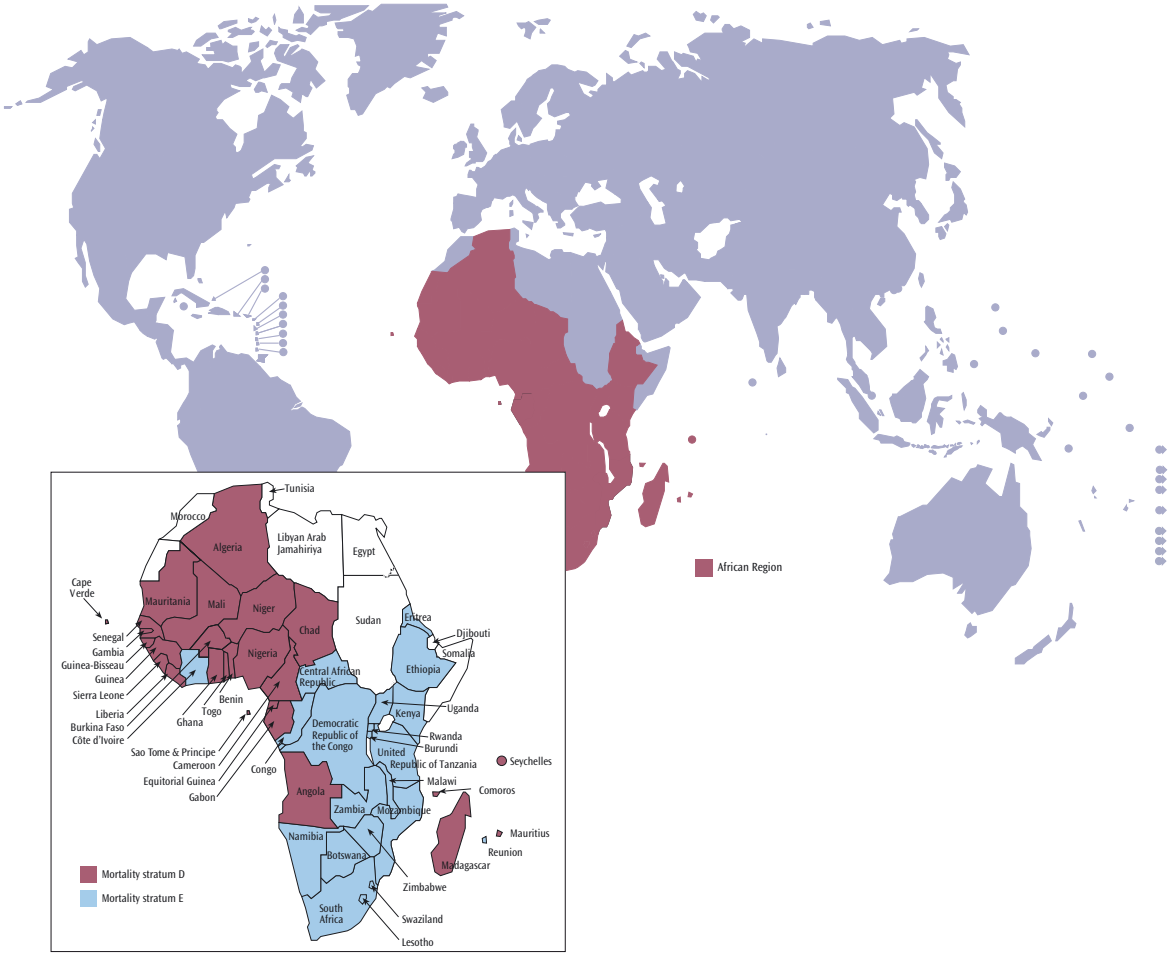


Source: United Nations Educational, Scientific and Cultural Organization database, 2004.

ICT expenditure, % GDP



Source: World development indicators 2005. World Bank Group, 2005.



Investment in health, ICT and education

Knowledge spreads along telephone lines and wireless connections, but cannot take hold without literacy. Investment in health, ICT and education are complementary but in reality the sectors compete for limited funds, particularly where countries are poor and private investment is limited. To improve the prospects for eHealth for the long-term, the priorities of cash-strapped governments should be to provide basic education for all, spread knowledge opportunities through lower-cost access to ICT, and offer incentives to encourage private sector investment in ICT.

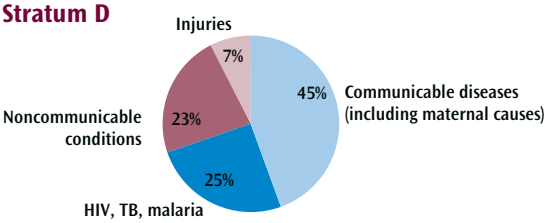
Responsibilities in a global information society

As ICT diffusion improves, countries will face new challenges stemming from greater participation in a networked world. Security, legal and ethical issues will demand greater attention. It will be crucial to build ICT capacity and adopt international best practice and standards for fighting spam, improving security and controlling fraud. Health legislation must be designed to improve transparency and protect consumers' basic rights to privacy, security and confidentiality in the information age, and health professionals must be made aware of their new responsibilities in this respect.

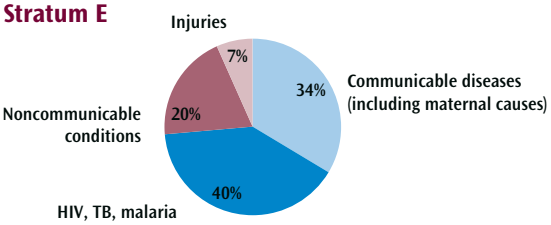
Access to ICT is still the primary challenge

Recognizing the importance of endemic and epidemic infectious diseases, combined with the still-early penetration of ICT in these

Causes of death, African Region Stratum D

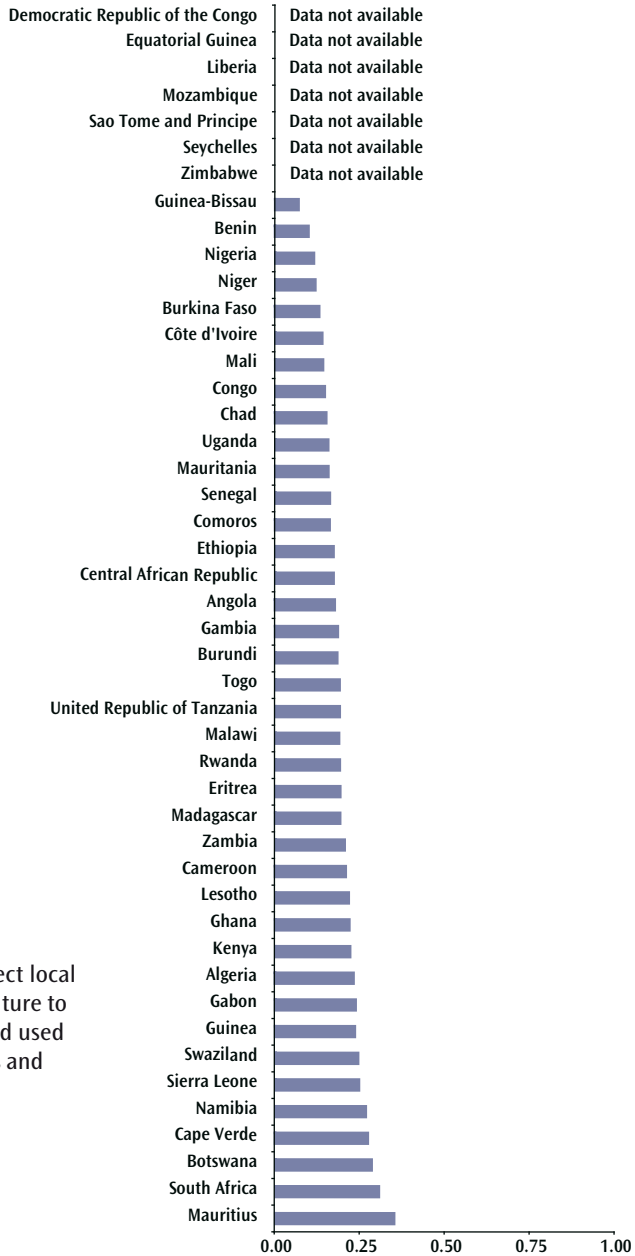


Causes of death, African Region Stratum E



Source: The world health report 2004. Geneva, WHO, 2004.
Totals may be greater than 100% due to rounding.

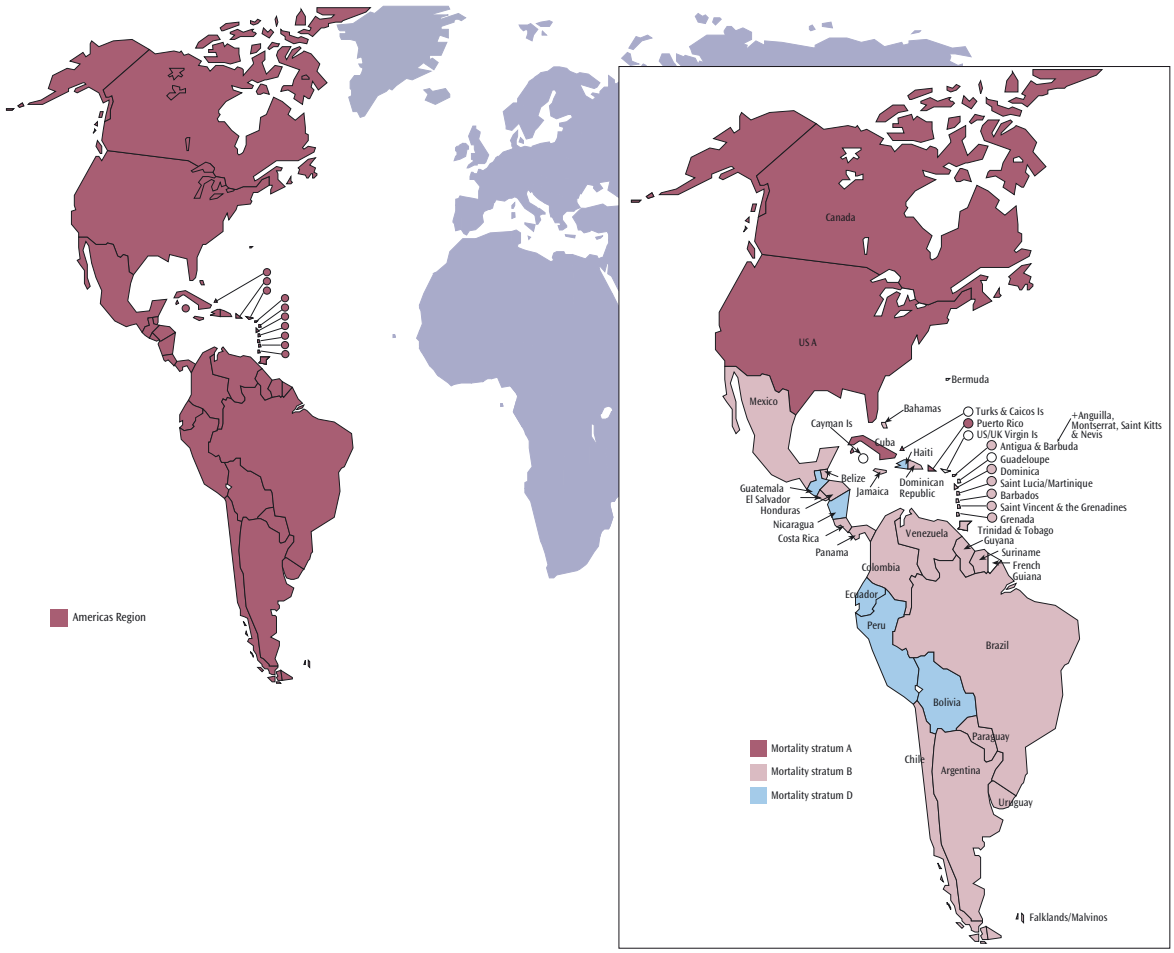
ICT diffusion, Africa



Source: The digital divide: ICT development indices 2004. Geneva, UNCTAD, 2004.

countries, it is clear that ensuring reliable, robust communications between health centres, laboratories, clinics and district medical offices must be a priority. More widespread telecommunications infrastructure, and more reliable and user-friendly access devices are fundamental. Improved access to ICT in health institutions must be accompanied by broad-scale efforts to integrate ICT and information management skills into the education of health personnel, both in training and practice. Not least, content must reflect local languages and culture to be understood and used by health workers and the public.

WHO Region of the Americas



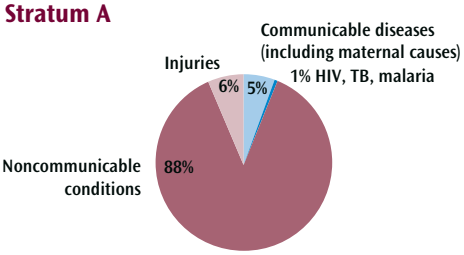
Local insight, global connections

Chronic, noncommunicable diseases, mental disorders, and injuries and violence constitute the major public health problems in the region, with an important infectious disease burden in the poorer countries. Countries are granting increasing responsibility to health entities at the subnational and local levels, while central levels concentrate on policy. To address the challenges of globalization, countries are delegating responsibilities to organizations at supranational levels and are negotiating trade agreements at the global, regional, subregional, and bilateral levels. Increasingly, public health is becoming a forum for fostering national and regional political dialogue, and for developing collective agendas. The planned development of a health information and communication system – also accessible by the general public – offers the possibility to share data, information and experiences.

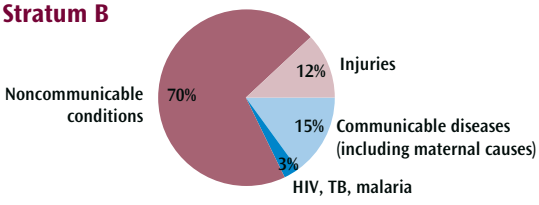
Use of ICT for health

It will be vital for countries to use ICT to support health promotion efforts, to improve healthy life expectancy as the population ages. In developing countries the capacity to deal with the ageing population is limited under conditions of high unemployment and informality. In this region literacy is high and penetration of ICT is growing rapidly. This creates opportunities to use ICT in distance learning,

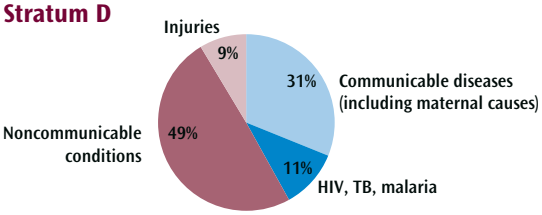
Causes of death, Region of the Americas Stratum A



Causes of death, Region of the Americas Stratum B

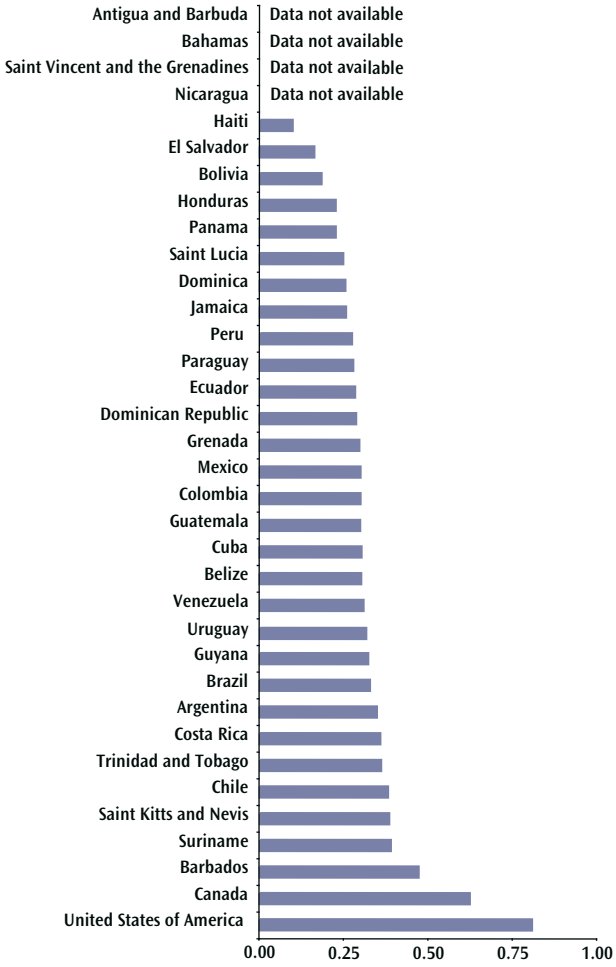


Causes of death, Region of the Americas Stratum D



Source: The world health report 2004. Geneva, WHO, 2004.

ICT diffusion, Americas



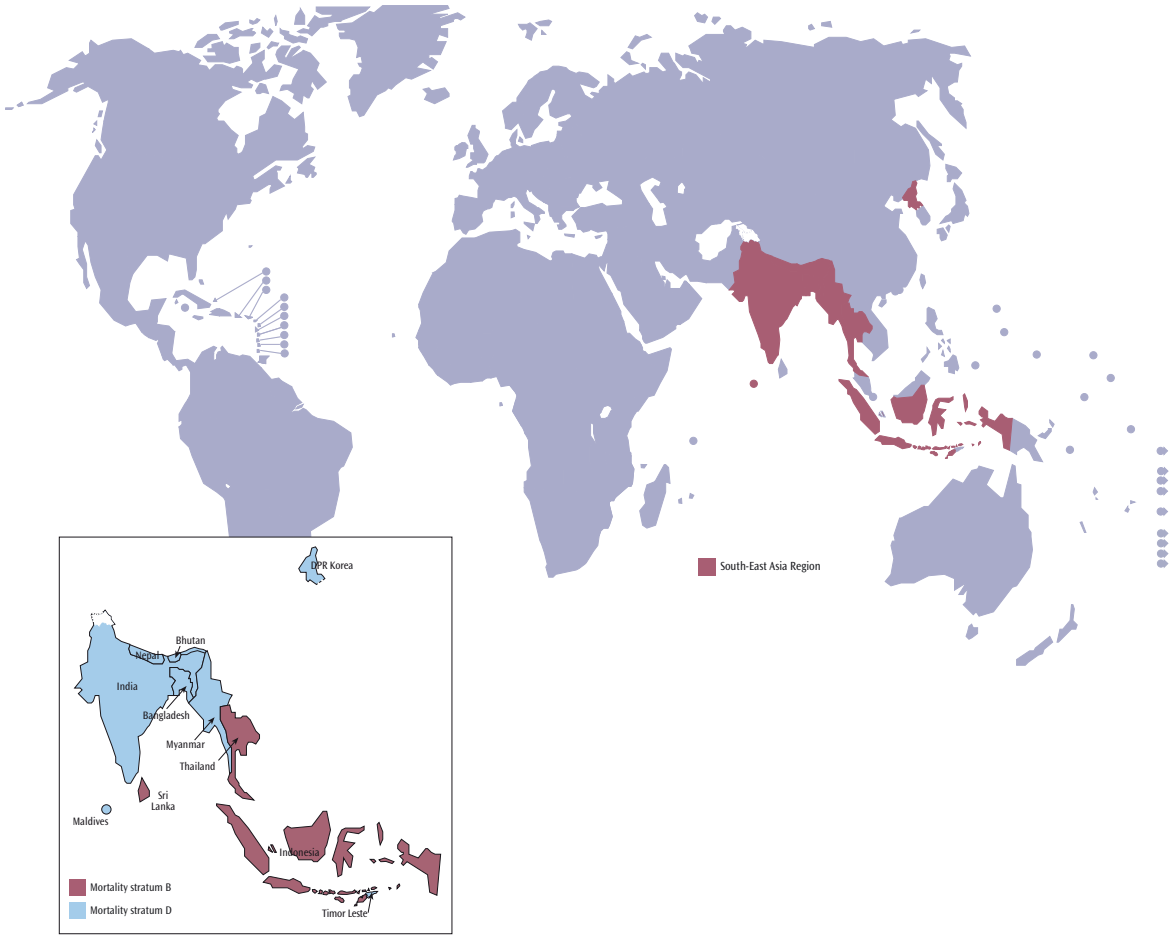
Source: The digital divide: ICT development indices 2004. Geneva, UNCTAD, 2004.

through popular culture for health promotion, social marketing and other programmes. It is also used in hospital systems, in the form of 'smart cards' for patient information, and electronic health records.

Joint action in disaster preparedness and relief

When a natural disaster strikes, its effects extend to more than one country and throughout the health sector. Disaster preparedness, mitigation, and response therefore needs to be addressed both nationally and regionally. The regional disaster information centre uses ICT to reach health ministries and national emergency commissions. ICT is an important tool for providing the public with information to reduce health risks following a hurricane or flood.

WHO South-East Asia Region



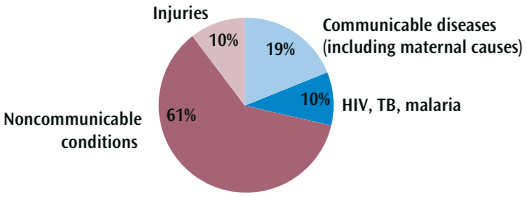
ICT at early stages of diffusion

Countries in this populous region fall into high-mortality and low-mortality strata. All face a double burden of disease, characterized by the rise of noncommunicable diseases at the same time that infectious diseases, including HIV/AIDS, remain a significant problem. Across the region a high percentage of the population live in rural areas, with large pockets in remote and unreachable areas. In all countries there are significant economic constraints, a low adult literacy rate, and a lack of ICT infrastructure and human resources. However, rapid progress in countries such as India shows that technology-friendly regulations and policies, education, private investment and market demand can make a profound difference to ICT growth.

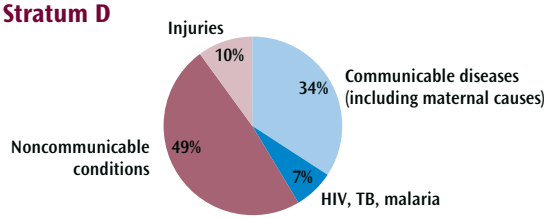
Tracking threats to health

In addition to emerging diseases such as SARS and avian influenza, and re-emerging diseases such as tuberculosis and malaria, the threat of epidemics and natural disasters is ever-present in the region. Ensuring reliable, widespread information systems for tracking and responding to epidemic-prone diseases and natural disasters presents a key challenge for the health sector. Early warning and rapid response capabilities rely

Causes of death, South-East Asia Region Stratum B

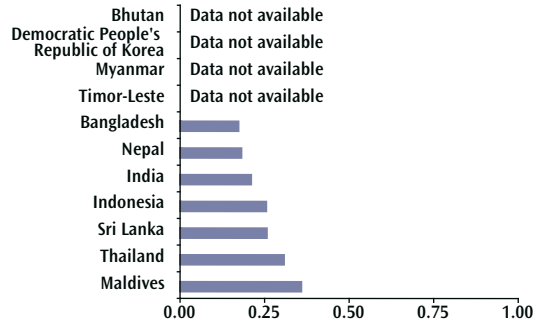


Causes of death, South-East Asia Region Stratum D



Source: The world health report 2004. Geneva, WHO, 2004.

ICT diffusion, South-East Asia

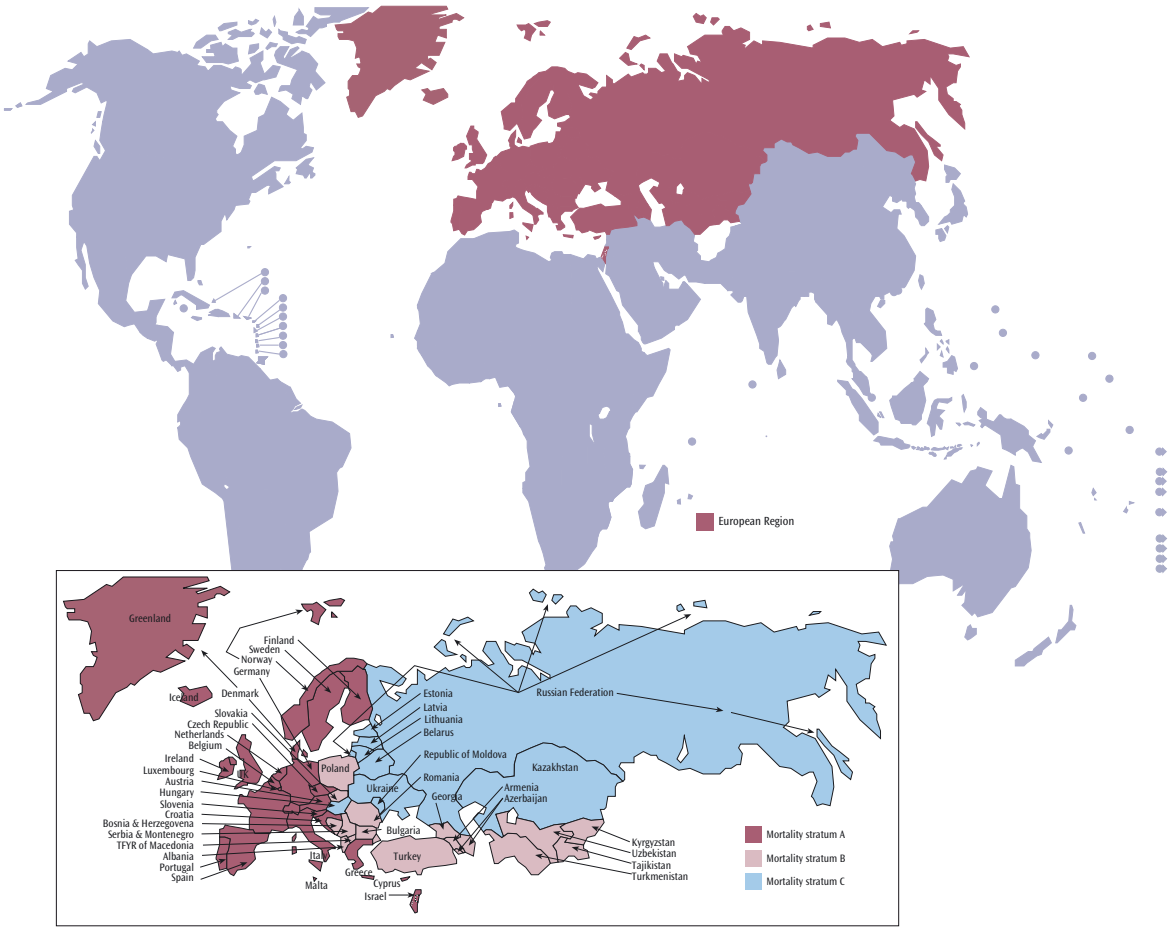


Source: The digital divide: ICT development indices 2004. Geneva, UNCTAD, 2004.

on accurate information, quickly transmitted from affected zones. Rugged access devices and mobile and wireless networks are needed that can combine both terrestrial and satellite technologies for ensuring on-demand access to networks.

The impact of development

In addition to the pressing problems of disease, a number of countries are faced with a critical condition arising from the lack of accountability for the health impact of a range of socioeconomic activities and development processes. In these countries, accountability for environmental and health impacts of industrial processes may not exist and access to knowledge and information on the health implications of certain practices is poor. Health systems development will entail the establishment of systems for continuous identification and surveillance of health risks, followed by development of interventions to respond to them.



Continuous innovation, strong ICT diffusion

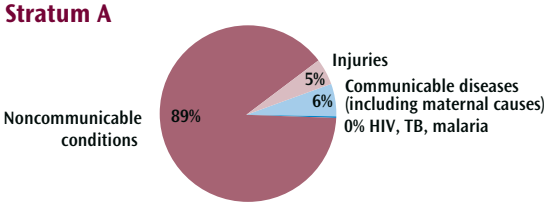
ICT diffusion is rising throughout Europe as lower prices, spread of the Internet and broadband open the door to digital content. The convergence of voice, data and images will shape ICT-related industries in the coming years and drive growth and innovation into the next decade.

Countries new to the European Union (EU) will benefit from inclusion in the coming 'single European information space', as rules and regulations are modernized with the goal of delivering benefits to all citizens in the areas of health, education, government and business. Key to facilitating uptake of ICT in health care are the EU's efforts to improve interoperability of systems, solid financial investment in research and development, progressive data protection and privacy policies and committed leadership. An understanding of eHealth services, and of the legal and ethical principles that underpin them, must become part of the education of every policy-maker and health professional.

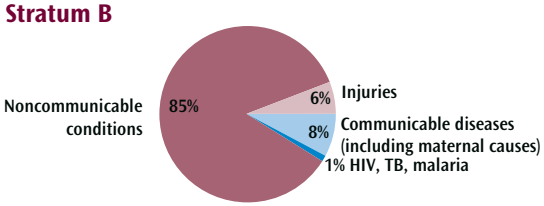
Networked, citizen-centred health

Europe is a leader in the push towards citizen-centred, individualized health care, which can only be realized by integration of ICT throughout European health systems. eHealth has been in use in Europe for decades but, whereas today it is seen primarily in terms of its potential to improve productivity, tomorrow it will become the backbone of citizen-centred health systems. eHealth will be essential to address challenges confronting

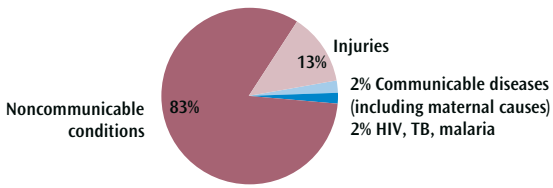
Causes of death, European Region Stratum A



Causes of death, European Region Stratum B



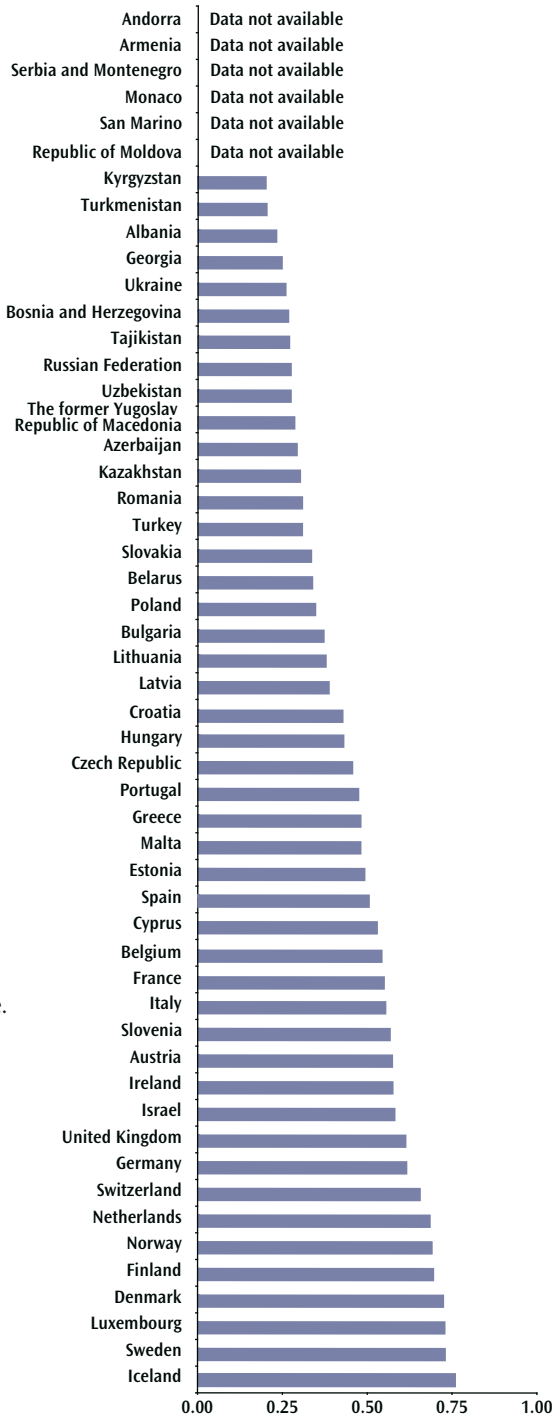
Causes of death, European Region Stratum C



Source: The world health report 2004. Geneva, WHO, 2004.

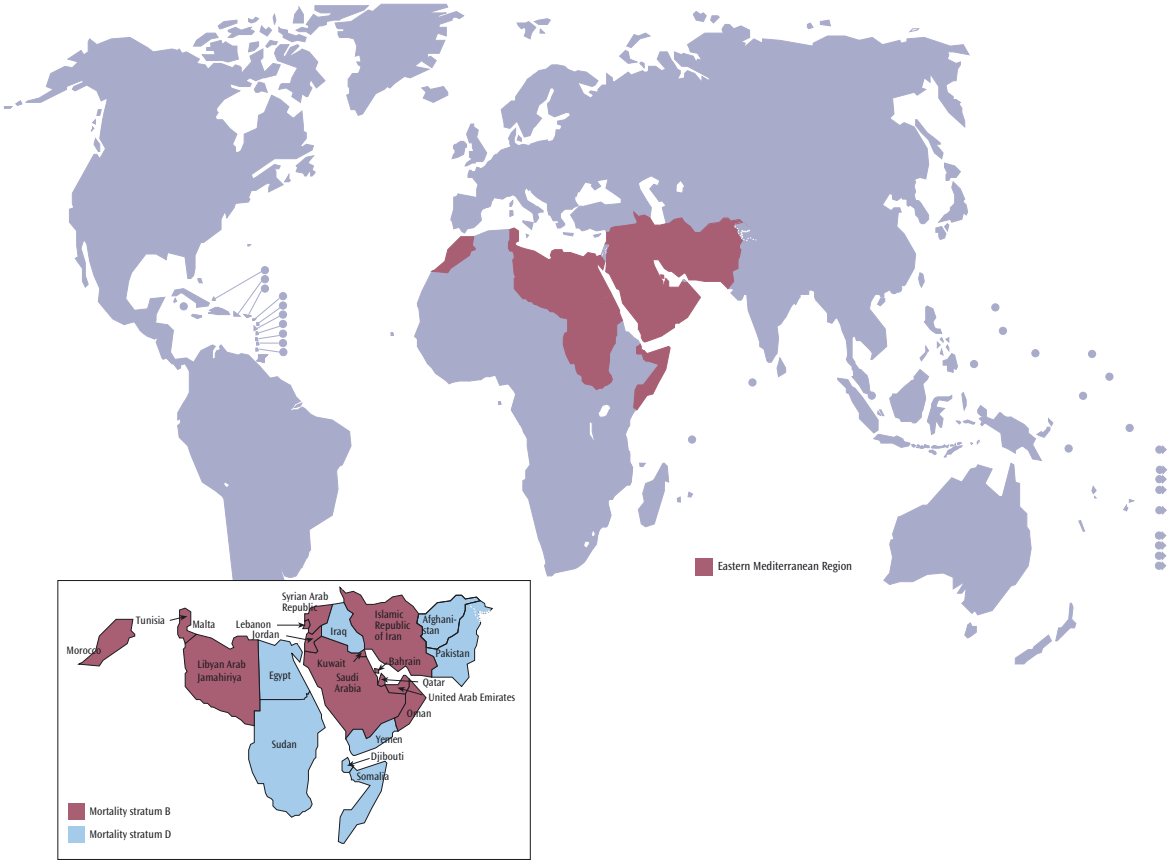
health care providers such as an ageing population, rising costs, the need for home-based, personalized management of care and the need to accommodate more mobile and demanding patients. *i2010: European Information Society 2010* reinforces calls for implementation of measures such as online health services, adoption of health cards, and health information networks between points of care. An EU health portal and EU-sponsored quality criteria for health web sites are envisaged for the future. Chronic diseases – heart disease, stroke, cancer and diabetes – are by far the leading causes of death throughout Europe. Health promotion measures, timely diagnosis, and proper management can delay the onset and mitigate the impact of these diseases, and ICT can facilitate and augment all these aspects of care.

ICT diffusion, Europe



Source: The digital divide: ICT development indices 2004. Geneva, UNCTAD, 2004.

WHO Eastern Mediterranean Region



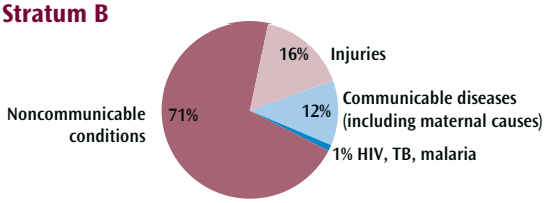
Double burden of disease, coupled with health system needs

The Eastern Mediterranean Region is experiencing rising rates of noncommunicable diseases, while infectious diseases still take a large toll. Once concentrated primarily among the wealthy, chronic diseases also affect the poor, who develop diseases at younger ages, suffer longer and die sooner. The majority of these are preventable, premature deaths. The countries still struggling to control endemic and epidemic infectious diseases are those with the lowest incomes. There, priorities are still to track and respond to the most important diseases, including cholera, measles, malaria, tuberculosis and epidemic meningitis. Across the region, numbers of health workers and hospital beds are low, as are average government health expenditure and gross national product per capita. Civil strife and natural disasters add enormous challenges to those already confronting health systems.

What can be done to boost eHealth

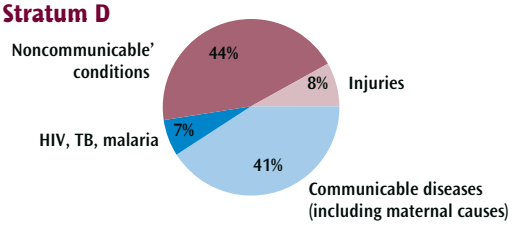
Centres of excellence in eHealth have been established in the region, but ICT diffusion is still at an early stage overall. Major barriers to ICT penetration are low adult literacy rates, low per-capita incomes, and the high percentage of people living in rural areas in the poorest countries of the region. All countries, particularly the poorest, would benefit from increased efforts to boost literacy, strengthened investment in infrastructure

Causes of death, Eastern Mediterranean Region Stratum B

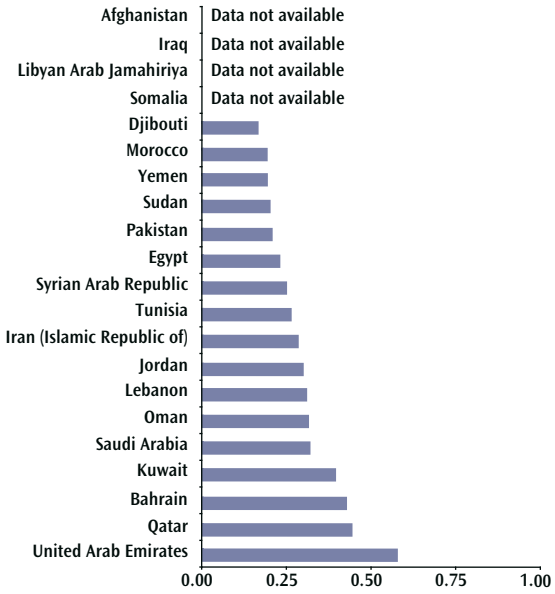


Source: The world health report 2004. Geneva, WHO, 2004.

Causes of death, Eastern Mediterranean Region Stratum D



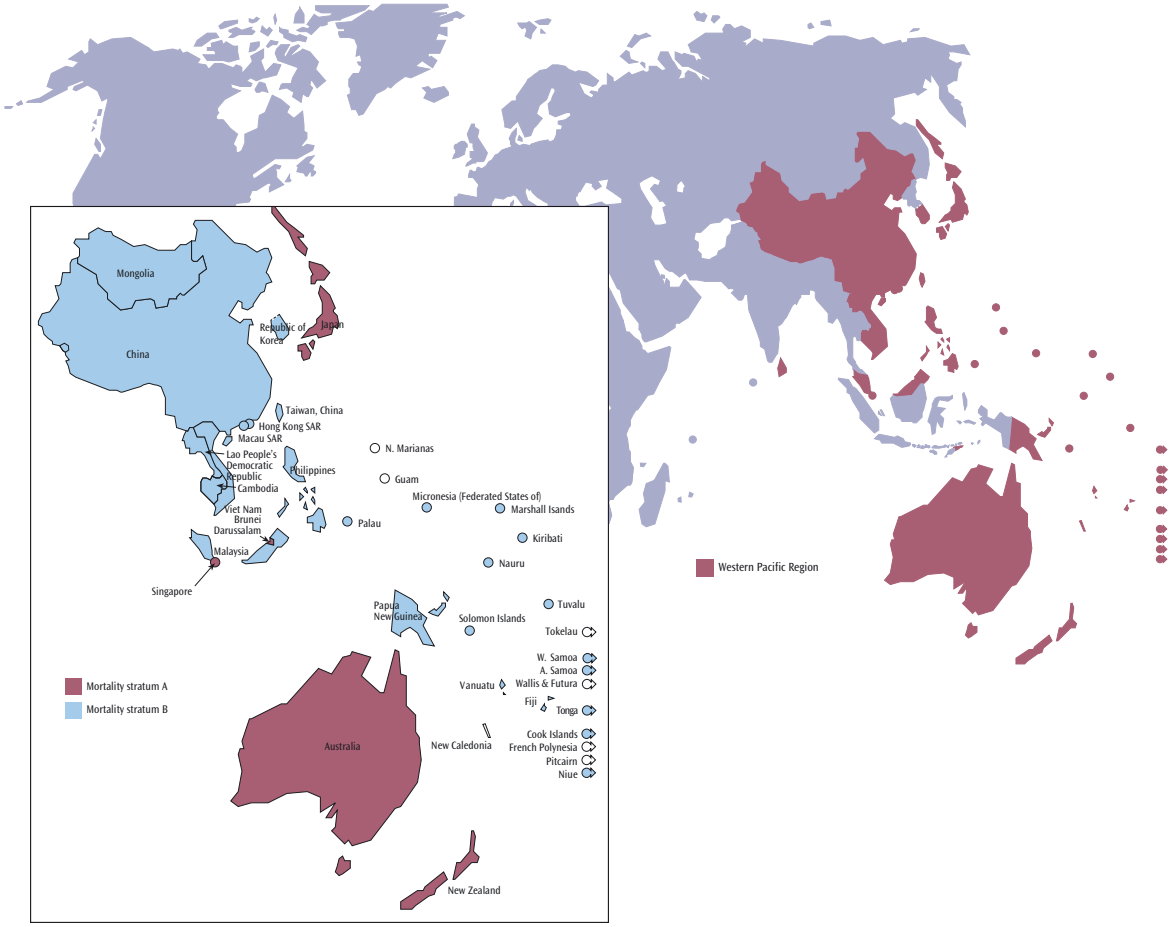
ICT diffusion, Eastern Mediterranean



Source: The digital divide: ICT development indices 2004. Geneva, UNCTAD, 2004.

for health facilities, ICT training for health personnel, increasing capacity in the ICT sector as a whole, adoption of ICT standards and improved policies to increase ICT diffusion. The priorities for the poorest countries are to establish reliable information and communication systems for disease surveillance and response and for emergency management, as well as improved means of communicating with remote areas. For countries with higher prevalence of noncommunicable diseases, death rates from major chronic diseases have declined where effective programmes have been introduced. These programmes start with diffusion of health information to the public and public health policy measures. They also include other measures such as providing evidence-based and multidisciplinary care, using patient information systems to coordinate care and facilitate communication, and teaching self-management of chronic conditions. In all these, ICT can play a major role.

WHO Western Pacific Region



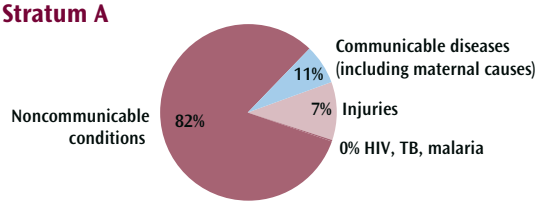
Low mortality in this diverse region

There is great diversity between the countries of this populous region, seen not only in the physical geography and size of the countries, but also in the multitude of languages and cultures of their people. Several small island states, largely rural, have populations the size of the mega-cities of the largest countries. Country per-capita income ranges from low to high, with government expenditure on health and numbers of health workers per country generally reflecting country income. Common characteristics are high adult literacy rates and low mortality, primarily from non-communicable diseases.

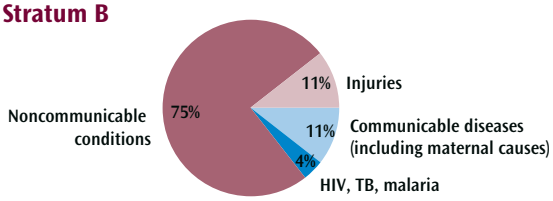
ICT diffusion is mixed

The small island nations are still in the early stages of ICT diffusion while others are beginning to surge and approach that of the high-income countries of the region, which enjoy broad ICT diffusion and high growth of mobile telephony and broadband. The high-income countries are already benefiting from eHealth and have made major investments in ICT particularly in health services delivery, health professional education, and in providing remote communities with access to medical consultation. The high literacy rates, combined with growing ICT diffusion provide an opportunity to reach the public with health information for

Causes of death, Western Pacific Region Stratum A

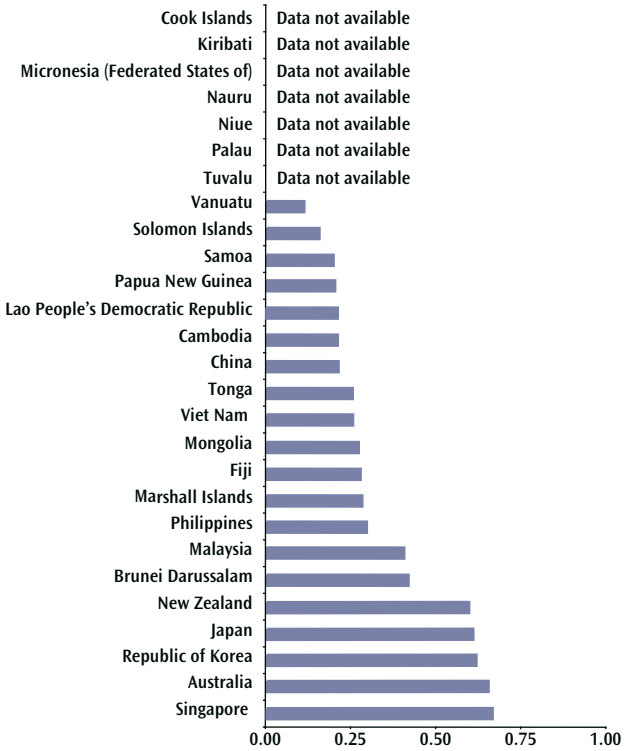


Causes of death, Western Pacific Region Stratum B



Source: The world health report 2004. Geneva, WHO, 2004.
Totals may be greater than 100% due to rounding.

ICT diffusion, Western Pacific



Source: The digital divide: ICT development indices 2004. Geneva, UNCTAD, 2004.

prevention and self-management of chronic diseases. Low-income countries are beginning to use ICT in education and training of health professionals, but access to ICT is still a challenge and needs significant investment. Particularly in countries where health workers numbers are low, improved access to ICT would mean better support for and greater access to vital health information, research and educational materials.

VI. Global vision, local insight: a shared future

The beginnings of a global health infrastructure are already in place. There is a shared professional culture and an ever-increasing global knowledge base for health. As information and communication technologies expand, they create new opportunities for the health community to work together. In such a landscape, skills and knowledge residing in different places can be combined to create new solutions and approaches in a network of evolving competencies and opportunities.

A global vision must rely on local insight. Local communities and structures, with their roots in history as well as in culture, provide the insight necessary to focus and apply resources to society's sore spots.

Information and communication technologies have opened opportunities for change in health, with or without policy-makers leading the way. The public has already accelerated demand and it is clear that it is time to scale up investment towards affordable, ubiquitous, user-friendly ICT.

Advancing ICT in health

Core components	Requirements
Infrastructure	Affordable, reliable, durable and high-speed connections Intersectoral investment in 'last-mile' solutions
Technology and tools	Designed, developed and deployed for health Affordable, durable, user-friendly access devices and people who can install and support them
Education and training	Skills to access, manage and use information Build capacity in eHealth policy and planning
Policies and standards	Coordinate systems and services Affordable rates, tariffs and services Development of global ethical and scientific norms, standards and commitments for transfer of information and protection of citizens
Evaluation	Evidence and experience to guide development and investment Evidence and information for policy and advocacy
Leadership and commitment	Long-term cross-sectoral outlook for public health policy, linked to ICT policy, with participation of civil society Working together across disciplines to improve opportunities for mutual gain Design of macro-level policies to support micro-level initiatives

Local, national and international stakeholders can play a role in making eHealth a reality in every country.

- Citizens can be informed and engaged, demanding equity, transparency and accountability.
- Health professionals can learn new skills and adopt ICT towards improving quality, safety and efficiency.
- Health institutions and academia can implement eHealth in research, education and clinical practice.
- Governments can create an enabling environment, and invest in equity, access and innovation.
- International agencies can collaborate on shared global challenges.

Shared governance models imply that all those with an interest in health development contribute to its progress. It is therefore up to professionals, the public, nongovernmental organizations and others to come together to make a difference to health in the years to come.

VII. Measuring eHealth

This report brings together for the first time statistics from United Nations agencies measuring demographics, health and ICT. The aim is to provide an overview of the diverse regional pictures and highlight opportunities for eHealth in each region. A companion volume, available electronically, includes detailed information for every WHO Member State on demographics, health and ICT, compiled from the latest available data. This country compilation represents an important starting point as the basis for future research. The WHO Global Observatory for eHealth will also provide complementary country data.

◆ *ICT statistics*

Researchers and policy-makers need data that can be used for analyses across countries and regions. The potential selection of indicators is enormous, with little except experimentation to guide the researcher to a meaningful and manageable set with which to work. While various indices measure particular aspects of emerging trends, their utility is often limited by factors including their specificity, time frame, completeness or collection strategy. Many of the economic and social statistics that are needed to help interpret the impact of the information society, as well as the techniques used to analyse them, are in dire need of improvement.

Then too, the continued evolution of the ICT sector shortens the useful lifespan of many of the established indicators, creating the need for regular revision of indicators and the development of new ones. The Partnership on Measuring ICT for Development (http://measuring-ict.unctad.org) identified the need for internationally-agreed measurement standards and undertook to map and evaluate the existing indicators at country level. Considerable work has been done over the past two years to establish a list of core ICT indicators. The United Nations Conference on Trade and Development (UNCTAD) has established an ICT diffusion index, which is used in this report. ICT development is based on connectivity, access and policy which is used to formulate an index of ICT diffusion.For more detail on the components, see: *The digital divide: ICT development indices 2004.* Geneva, UNCTAD, 2004.

Index of ICT diffusion

Connectivity	Physical infrastructure available to a country: per capita Internet hosts, PCs, telephone mainlines and mobile phones Excludes electricity, broadband, and affordability measures
Access	Number of Internet users, adult literacy rate, cost of a local call, and GDP per capita
Policy	Comprises presence of Internet exchanges, competition in the local loop/ domestic long distance and competition in the Internet service provider market

◆ *Health statistics*

The World Health Organization collects and summarizes a wide range of quantitative data through country and regional offices and headquarters departments. The indicators included in this report are a selection of demographic and health indicators found in WHO's World Health Statistics. They were selected because of their potential utility to researchers interested in characterizing countries and examining the relationship of ICT to health.

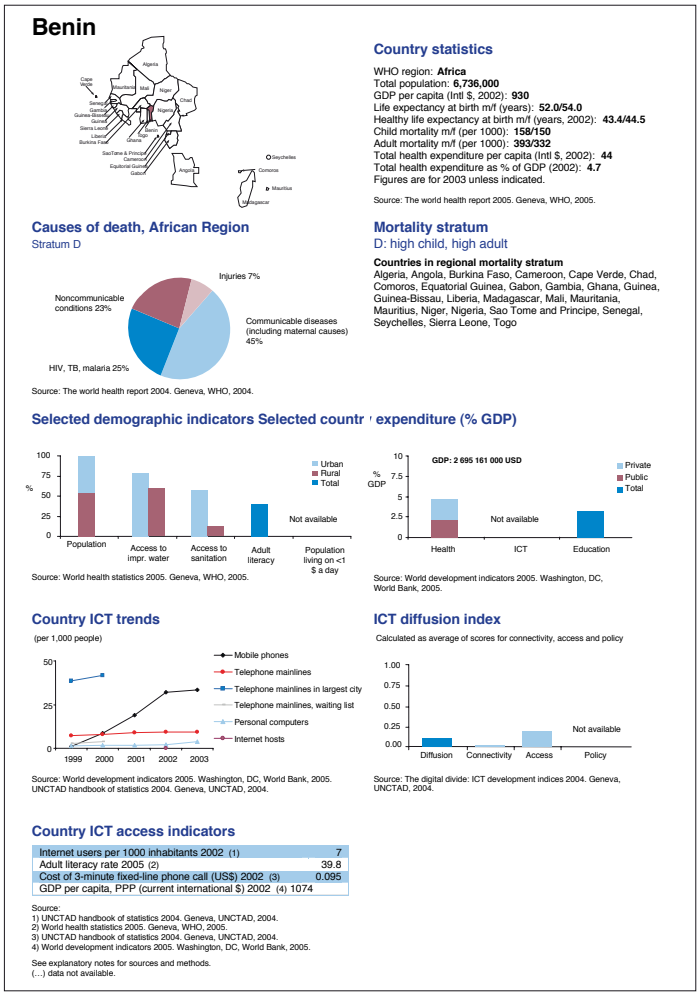
The 'Causes of death' charts on each regional page were compiled from health statistics reported in: *The world health report 2004.* Geneva, WHO, 2004.

More detailed information on the health indicators (standardized descriptions, definition, data source, method of estimation, disaggregation, references to literature and databases) can be found in: *World Health Statistics 2005.* Geneva, WHO, 2005. See also the WHO database of health statistics, a global database based on WHO's Global Atlas system, which includes more recent and time series estimates from 1990 and, when available, metadata describing more detailed aspects of data sources and methods of estimation: www.who.int/healthinfo.

◆ *Sources and notes*

Sources accompany graphics and maps in the text. Sources and notes for the following tables (pages 28 to 35) can be found at the end of the tables, on page 36.

Sample country fact sheet on health and ICT diffusion



Demographic statistics

Countries	WHO Region and mortality stratum (1)	Total population (2) (b)	Population in urban areas (%) (3)	Population in rural areas (%) (3)	Adult literacy rate (%) (3)	Population living below poverty line (% with <1 $ a day) (3)	Access to improved water sources (%) 2002 (3)		Access to improved sanitation (%)[a] 2002 (3)		GDP per capita, PPP (current international $) (2) (c)
		2002	2005	2005	2005	1990-2002	Urban	Rural	Urban	Rural	2002
Afghanistan	Emr-D	…	24	76	…	…	19	11	16	5	…
Albania	Eur-B	3,150,265	45	55	98.7	<2	99	95	99	81	4276.21
Algeria	Afr-D	31,320,430	60	40	68.9	<2	92	80	99	82	5769.333
Andorra	Eur-A	…	91	9	…	…	100	100	100	100	…
Angola	Afr-D	13,121,250	37	63	66.9	…	70	40	56	16	2231.719
Antigua and Barbuda	Amr-B	76,485	38	62	…	…	95	89	98	94	9999.033
Argentina	Amr-B	36,480,000	91	9	97.0	3.3	97	…	…	…	11085.83
Armenia	Eur-B	3,067,953	64	36	99.4	12.8	99	80	96	61	3138.308
Australia	Wpr-A	19,662,800	93	7	…	…	100	100	100	100	28335.03
Austria	Eur-A	8,066,000	66	34	…	…	100	100	100	100	29339.37
Azerbaijan	Eur-B	8,172,000	50	50	98.8	3.7	95	59	73	36	3218.118
Bahamas	Amr-B	313,989	90	10	…	…	98	86	100	100	16851.81
Bahrain	Emr-B	697,846	90	10	86.5	…	100	…	100	…	17165.63
Bangladesh	Sear-D	135,683,700	25	75	41.1	36.0	82	72	75	39	1695.525
Barbados	Amr-B	269,384	53	47	99.7	…	100	100	99	100	15298.24
Belarus	Eur-C	9,925,000	72	28	99.7	<2	100	100	…	…	5542.063
Belgium	Eur-A	10,333,000	97	3	…	…	100	…	…	…	27575.95
Belize	Amr-B	265,200	49	51	76.9	…	100	82	71	25	6373.438
Benin	Afr-D	6,552,181	46	54	39.8	…	79	60	58	12	1073.538
Bhutan	Sear-D	851,009	9	91	…	…	86	60	65	70	…
Bolivia	Amr-D	8,645,222	64	36	86.7	14.4	95	68	58	23	2496.556
Bosnia and Herzegovina	Eur-B	4,111,688	45	55	94.6	…	100	96	99	88	5762.211
Botswana	Afr-E	1,711,770	53	48	78.9	23.5	100	90	57	25	9017.43
Brazil	Amr-B	174,485,400	84	16	88.2	8.2	96	58	83	35	7776.485
Brunei Darussalam	Wpr-A	350,627	78	22	93.9	…	…	…	…	…	…
Bulgaria	Eur-B	7,869,000	71	30	98.6	4.7	100	100	100	100	7181.144
Burkina Faso	Afr-D	11,831,090	19	81	12.8	44.9	82	44	45	5	1109.674
Burundi	Afr-E	7,070,999	11	89	58.9	58.4	90	78	47	35	648.312
Cambodia	Wpr-B	13,172,240	20	80	69.4	34.1	58	29	53	8	1979.961
Cameroon	Afr-D	15,769,270	53	47	67.9	17.1	84	41	63	33	2037.294
Canada	Amr-A	31,362,000	81	19	…	…	100	99	100	99	29865.17
Cape Verde	Afr-D	458,030	58	42	75.7	…	86	73	61	19	5002.108
Central African Republic	Afr-E	3,820,085	44	56	48.6	66.6	93	61	47	12	1175.234
Chad	Afr-D	8,340,787	26	74	25.5	…	40	32	30	0	999.041
Chile	Amr-B	15,589,000	88	12	95.7	<2	100	59	96	64	9805.193
China	Wpr-B	1,280,400,000	41	60	90.9	16.6	92	68	69	29	4552.181
Colombia	Amr-B	43,834,000	77	23	92.1	8.2	99	71	96	54	6381.662
Comoros	Afr-D	585,937	36	64	56.2	…	90	96	38	15	1680.729
Congo	Afr-E	3,656,658	54	46	82.8	…	72	17	14	2	979.012
Cook Islands	Wpr-B	18,000	73	27	…	…	98	88	100	100	…
Costa Rica	Amr-B	3,941,750	62	38	95.8	2.0	100	92	89	97	8841.781
Côte d'Ivoire	Afr-E	16,513,120	46	54	48.1	15.5	98	74	61	23	1543.031
Croatia	Eur-A	4,440,000	60	40	98.1	<2	…	…	…	…	10232.06
Cuba	Amr-A	11,251,000	76	24	96.9	…	95	78	99	95	…
Cyprus	Eur-A	764,967	70	31	96.8	…	100	100	100	100	…
Czech Republic	Eur-A	10,201,000	75	26	…	…	…	…	…	…	15614.78
Democratic People's Republic of Korea	Sear-D	22,488,810	62	38	…	…	100	100	58	60	…
Democratic Republic of the Congo	Afr-E	51,579,780	33	67	65.3	…	83	29	43	23	669.903
Denmark	Eur-A	5,374,300	86	15	…	…	100	100	…	…	30906.7

For sources and notes, see page 36.

Life expectancy at birth (years) both sexes (4)	Total expenditure on health (% of GDP) (4)	General government expenditure on health as % of total government expenditure (4)	Healthy life expectancy (HALE) at birth (years) 2002 (1)		Number of health workers (5)		Main telephone lines per 100 inhabitants (6)	Cost of a 3-minute fixed-line phone call (US $) (6) (d)	Mobile phone subscribers per 100 inhabitants(6)	Cost of a 3-minute mobile phone call (US $) (6)	Personal computers per 1000 inhabitants (6) (e)	Internet users per 1000 inhabitants (6) (f)	Internet hosts per 100 000 inhabitants (6) (g)	ICT expenditure, % GDP (2) (h)
2003	2002	2002	Males	Females	(per 10 000)	year	2005	2005	2005	2005	2005	2005	2005	2002
42	8	23.1	35.3	35.8	4.1	2001	0.1	…	0	…	…	…	…	…
72	6.1	8.1	59.5	63.3	50.3	2003	7.1	0.021	28	0.627[a]	12	4	6	…
70	4.3	9.1	59.7	61.6	38.2	1995	6.1	0.038	1	0.082	8	16	3	…
81	6.5	26.6	69.8	74.6	65.8	2003	53.1	0.084[a]	40	0.397[a]	…	…	3388	…
40	5	4.1	31.6	35.1	12.7	1997	0.6	0.090	1	0.207	2	3	0	6
72	4.8	14.1	60.1	63.6	43.7	1999	48.8	…	49	…	…	128	797	…
74	8.9	15.3	62.5	68.1	36.3	1998	21.9	0.029	18	…	82	112	1355	7
68	5.8	6	59.4	62.6	80.1	2003	14.3	0.021	2	0.508	16	16	75	6
81	9.5	17.1	70.9	74.3	115.9	2002	55.5	0.120	64	1.582	565	482	13042	…
79	7.7	10.5	69.3	73.5	96.0	2003	48.2	0.189	84	2.009	374	415	4569	…
65	3.7	2.9	55.8	58.7	120.3	2003	11.3	0.102	11	0.302	…	37	14	…
72	6.9	14.6	61.0	66.0	40.5	2002	40.6	…	39	…	…	192	10	3
74	4.4	9.5	64.2	64.4	64.2	2003	26.1	0.055	58	0.395	159	246	199	…
63	3.1	4.4	55.3	53.3	4.9	2001	0.5	0.029	1	0.311	3	2	…	…
75	6.9	12.3	62.9	68.2	64.9	1999	49.4	…	36	1.11	104	112	60	6
68	6.4	10.5	56.6	64.9	167.4	2003	29.9	0.008	5	0.128	…	82	41	…
79	9.1	12.8	68.9	73.3	158.7	1996/02	49.4	0.142	79	1.132	241	328	3250	…
68	5.2	5.3	58.4	62.2	22.5	2000	11.4	0.150	19	1.275	127	109	544	…
53	4.7	11.1	43.4	44.5	3.4	1995	0.9	0.095	3	1.033	2	7	8	5
63	4.5	12	52.9	52.9	4.0	1999/01	2.8	0.021	…	…	14	14	180	…
65	7	11.6	53.6	55.2	10.8	2001	6.4	…	11	…	23	32	17	…
73	9.2	8.8	62.3	66.4	62.9	2003	23.7	0.028	20	0.617[a]	…	26	150	7
36	6	7.5	36.0	35.4	27.0	1999	8.3	0.017	25	0.616	41	35	94	…
69	7.9	10.1	57.2	62.4	25.8	2001	22.3	0.028[a]	20	0.572[a]	75	82	1287	4
77	3.5	4.7	65.1	65.5	70.8	2000/02	25.6	…	40[a]	0.168[a]	77	102[a]	2463	…
72	7.4	10.1	62.6	67.1	78.3	2003	36.8	0.020	33	…	52	81	423	…
45	4.3	10.6	34.9	36.3	3.4	2001	0.5	0.102	1	0.861	2	2	3	…
42	3	2	33.4	36.8	3.4	2000	0.3	0.077	1	0.928	1	1	…	5
54	12	18.6	45.6	49.5	10.1	2000	0.3	0.030	3	0.676[a]	2	2	10	6
48	4.6	7.9	41.1	41.8	4.5	1996	0.7	0.057	4	1.076	6	4	3	…
80	9.6	15.9	70.1	74.0	92.4	2002	64.3	…	38	0.484[a]	487	513	9531	…
70	5	11.1	58.8	62.9	7.3	1996	15.6	0.038	10	0.895	78	36	11	…
42	3.9	7.4	37.1	37.7	1.7	1995	0.2	0.430	0	0.43	2	1	0	7
46	6.5	12.2	39.7	41.7	2.0	2001	0.2	0.108	0	…	2	2	0	5
77	5.8	10.2	64.9	69.7	18.1	1998/03	23.0	0.104	43	…	119	238	898	9
71	5.8	10	63.1	65.2	26.0	2002/03	16.7	0.027	16	0.145[a]	28	46	12	…
72	8.1	20.4	57.8	66.3	18.8	2003	17.9	0.029[a]	11	0.419[a]	49	46	129	…
64	2.9	8.2	53.9	55.3	5.6	1997	1.3	0.143	…	…	6	4	2	…
54	2.2	6	45.3	47.3	23.5	1995	0.7	…	7	…	4	2	1	7
71	4.6	11.6	60.6	62.7	45.7	2001/02	…	…	…	…	…	…	…	…
77	9.3	24.4	65.2	69.3	19.2	2000	25.1	0.027	11	0.319[a]	197	193	187	…
45	6.2	7.2	37.6	41.3	5.5	1996	2.0	0.224	6	1.937	9	5	27	…
75	7.3	12	63.8	69.3	78.1	2003	41.7	0.088	54	…	174	180	678	…
77	7.5	11.3	67.1	69.5	131.8	2003	5.1[a]	0.090[a]	0	1.200[a]	32	11[a]	10	7
78	7	6.8	66.7	68.5	68.5	2002	68.8	0.033	58	0.443	270	294	377	…
75	7	14.7	65.9	70.9	137.3	2003	36.2	0.128	85	0.450[a]	177	256	2232	…
66	4.6	5	58.0	59.7	56.0	1995/01	2.1	…	…	…	…	…	…	6
44	4.1	16.4	35.0	39.1	5.1	1996	…	…	1	…	…	1	0	…
77	8.8	13.1	68.6	71.1	103.3	2002	68.9	0.084[a]	83	0.508[a]	577	513	15567	…

For sources and notes, see page 36.

Demographic statistics

Countries	WHO Region and mortality stratum (1)	Total population (2) (b)	Population in urban areas (%) (3)	Population in rural areas (%) (3)	Adult literacy rate (%) (3)	Population living below poverty line (% with <1 $ a day) (3)	Access to improved water sources (%) 2002 (3)		Access to improved sanitation (%)[a] 2002 (3)		GDP per capita, PPP (current international $) (2) (c)
		2002	2005	2005	2005	1990-2002	Urban	Rural	Urban	Rural	2002
Djibouti	Emr-D	693,480	85	15	…	…	82	67	55	27	2028.573
Dominica	Amr-B	71,079	73	27	…	…	100	90	86	75	5402.696
Dominican Republic	Amr-B	8,612,860	60	40	87.7	<2	98	85	67	43	6668.179
Ecuador	Amr-D	12,807,460	63	37	91.0	17.7	92	77	80	59	3536.98
Egypt	Emr-D	66,371,670	42	58	55.6	3.1	100	97	84	56	3814.039
El Salvador	Amr-B	6,417,185	60	40	79.7	31.1	91	68	78	40	4934.596
Equatorial Guinea	Afr-D	481,880	50	50	…	…	45	42	60	46	…
Eritrea	Afr-E	4,296,700	21	79	…	…	72	54	34	3	802.506
Estonia	Eur-C	1,358,000	70	30	99.8	<2	…	…	93	…	12378.52
Ethiopia	Afr-E	67,217,840	16	84	41.5	26.3	81	11	19	4	738.777
Fiji	Wpr-B	823,300	53	47	92.9	…	…	…	99	98	5598.394
Finland	Eur-A	5,199,000	61	39	…	…	100	100	100	100	26579.91
France	Eur-A	59,485,000	77	23	…	…	100	…	…	…	27122.74
Gabon	Afr-D	1,315,418	85	15	…	…	95	47	37	30	6402.788
Gambia	Afr-D	1,388,568	26	74	…	59.3	95	77	72	46	1743.737
Georgia	Eur-B	5,177,000	52	49	…	2.7	90	61	96	69	2254.79
Germany	Eur-A	82,508,000	89	12	…	…	100	100	…	…	27175.37
Ghana	Afr-D	20,298,490	46	54	54.1	44.8	93	68	74	46	2125.823
Greece	Eur-A	11,005,000	61	39	…	…	…	…	…	…	18766.54
Grenada	Amr-B	103,500	42	58	…	…	97	93	96	97	7290.354
Guatemala	Amr-D	11,991,950	47	53	69.9	16.0	99	92	72	52	4085.311
Guinea	Afr-D	7,744,346	37	64	…	…	78	38	25	6	2084.443
Guinea-Bissau	Afr-D	1,446,881	36	64	…	…	79	49	57	23	713.217
Guyana	Amr-B	765,592	39	62	…	<2	83	83	86	60	4263.559
Haiti	Amr-D	8,286,491	39	61	51.9	…	91	59	52	23	1722.25
Honduras	Amr-B	6,796,528	46	54	80.0	23.8	99	82	89	52	2603.9
Hungary	Eur-C	10,159,000	66	34	99.3	<2	100	98	100	85	13920.54
Iceland	Eur-A	288,000	93	7	…	…	100	100	…	…	29696.76
India	Sear-D	1,048,641,000	29	71	61.3	34.7	96	82	58	18	2674.242
Indonesia	Sear-B	211,816,800	48	52	87.9	7.5	89	69	71	38	3177.889
Iran, Islamic Republic of	Emr-B	65,540,000	68	32	…	<2	98	83	86	78	6525.469
Iraq	Emr-D	24,173,930	67	33	…	…	97	50	95	48	…
Ireland	Eur-A	3,930,000	60	40	…	…	100	…	…	…	36751.21
Israel	Eur-A	6,566,000	92	8	95.3	…	100	100	100	…	19809.04
Italy	Eur-A	57,690,130	68	33	…	…	100	…	…	…	26460.12
Jamaica	Amr-B	2,621,043	52	48	87.6	<2	98	87	90	68	3949.998
Japan	Wpr-A	127,399,000	66	34	…	…	100	100	100	100	26808.03
Jordan	Emr-B	5,171,341	79	21	90.9	<2	91	91	94	85	4224.177
Kazakhstan	Eur-C	14,875,000	56	44	99.5	<2	96	72	87	52	5896.874
Kenya	Afr-E	31,344,580	42	58	84.3	23.0	89	46	56	43	1020.318
Kiribati	Wpr-B	94,704	50	50	…	…	77	53	59	22	…
Kuwait	Emr-B	2,334,919	96	4	82.9	…	…	…	…	…	16319.71
Kyrgyzstan	Eur-B	5,003,900	34	66	…	<2	98	66	75	51	1631.833
Lao People's Democratic Republic	Wpr-B	5,530,092	22	78	68.7	26.3	66	38	61	14	1677.94
Latvia	Eur-C	2,338,000	66	34	99.7	<2	…	…	…	…	9275.268
Lebanon	Emr-B	4,441,245	88	12	…	…	100	100	100	87	4756.244
Lesotho	Afr-E	1,776,616	18	82	81.4	36.4	88	74	61	32	2442.77
Liberia	Afr-D	3,295,049	48	52	55.9	…	72	52	49	7	…
Libyan Arab Jamahiriya	Emr-B	5,448,226	87	13	81.7	…	72	68	97	96	…
Lithuania	Eur-C	3,469,000	67	33	99.6	<2	…	…	…	…	10348.93

For sources and notes, see page 36.

Life expectancy at birth (years) both sexes (4)	Total expenditure on health (% of GDP) (4)	General government expenditure on health as % of total government expenditure (4)	Healthy life expectancy (HALE) at birth (years) 2002 (1)		Number of health workers (5)		Main telephone lines per 100 inhabitants (6)	Cost of a 3-minute fixed-line phone call (US $) (6) (d)	Mobile phone subscribers per 100 inhabitants(6)	Cost of a 3-minute mobile phone call (US $) (6)	Personal computers per 1000 inhabitants (6) (e)	Internet users per 1000 inhabitants (6) (f)	Internet hosts per 100 000 inhabitants (6) (g)	ICT expenditure, % GDP (2) (h)
2003	2002	2002	Males	Females	(per 10 000)	year	2005	2005	2005	2005	2005	2005	2005	2002
55	6.3	10.1	42.5	43.2	9.6	2002	1.5	0.197	2	0.844	15	7	76	…
73	6.4	12.2	61.9	65.6	46.5	1997/99	30.4	0.104	12	0.104[a]	90	160	595	4
68	6.1	11.7	57.2	61.9	22.0	1999	11	0.064	21	0.398[a]	…	61	553	1
71	4.8	8.8	59.8	64.1	22.5	2001	11	0.030	12	…	31	42	21	…
67	4.9	6	57.8	60.2	48.7	2003	11.5	0.016	7	0.167	17	28	5	…
70	8	22.8	57.2	62.3	20.7	2002	10.3	0.070[a]	14	…	25	46	4	…
51	1.8	9.8	44.7	46.3	6.6	1996	1.7	…	6	…	7	4	1	…
59	5.1	5.6	49.3	50.8	2.1	1996	0.9	0.029	…	…	3	2	22	…
71	5.1	11	59.2	69.0	98.7	2002	35.1	0.090	65	0.427[a]	210	328	4676	…
50	5.7	7.6	40.7	41.7	2.3	2002	0.5	0.023	0	0.252	1	1	0	7
68	4.2	7.5	56.9	60.6	24.3	2003	11.9	0.055	11	0.301	49	61	96	6
79	7.3	11	68.7	73.5	253.8	2003	52.3	0.132	87	0.464[a]	442	509	23431	…
80	9.7	13.8	69.3	74.7	106.5	2003	57.2	0.125	65	0.764	347	314	2329	…
58	4.3	6.3	50.2	52.6	…	…	2.5	0.215	22	0.646	19	19	6	…
57	7.3	12	48.5	50.5	2.4	1997	2.9	0.028	8	0.669[a]	14	19	43	6
71	3.8	5.8	62.2	66.6	93.0	2003	13.1	0.027	10	0.393	32	15	62	…
79	10.9	17.6	69.6	74.0	134.2	2002	65.2	0.094	73	1.104	431	436	3143	4
58	5.6	8.4	49.2	50.3	9.3	2002	1.3	0.025	2	0.945	4	8	1	…
79	9.5	10.8	69.1	72.9	76.4	1995/01	49.1	0.074	85	…	82	135	1460	…
67	5.7	14.7	58.4	60.0	27.6	1999	31.6	0.089	7	0.544[a]	132	142	13	…
66	4.8	16.6	54.9	59.9	13.1	2003	7.1	0.084[a]	13	0.382[a]	14	33	82	…
52	5.8	4.8	43.9	45.6	5.6	2000	0.3	0.076	1	0.607	5	5	3	…
47	6.3	8.5	39.6	41.5	13.9	1996	0.9	…	…	…	…	11	2	…
62	5.6	11.1	53.1	57.2	11.2	1999	9.2	0.003	10	0.582	27	142	7	4
53	7.6	23.8	43.5	44.1	3.6	1999	1.6	…	2	…	…	10	…	6
67	6.2	14	56.3	60.5	11.9	1999/00	4.8	0.064	5	0.759[a]	14	25	2	…
73	7.8	10.4	61.5	68.2	120.7	2003	36.1	0.132	68	0.681[a]	108	158	1916	4
80	9.9	18.1	72.1	73.6	135.7	2003	65.3	0.093	91	0.349[a]	451	648	23702	3
62	6.1	4.4	53.3	53.6	13.8	2003	4	0.016	1	0.120[a]	7	16	8	2
67	3.2	5.4	57.4	58.9	6.0	1998/00	3.7	0.026	6	0.105	12	21	29	…
69	6	9	56.1	59.1	28.0	2001	18.7	0.006	3	0.662[a]	75	48	5	5
55	1.5	0.7	48.8	51.5	18.4	2003	2.8	…	0	…	8	1	…	8
78	7.3	16.4	68.1	71.5	211.0	2003	50.2	0.142	76	1.232[a]	421	280	3472	5
80	9.1	10.9	70.5	72.3	98.7	2003	45.3	0.016	96	0.208	243	301	2212	11
81	8.5	13.3	70.7	74.7	106.5	1999/02	48.1	0.105[a]	94	…	231	352	1191	8
73	6	5.9	64.2	65.9	25.0	2003	16.9	0.065	53	0.62	54	228	49	8
82	7.9	17	72.3	77.7	106.5	2000	55.8	0.068	64	0.558	382	449	7267	…
71	9.3	12.5	59.7	62.3	52.1	2003	12.7	0.042	23	0.761	38	58	77	3
61	3.5	8.9	52.6	59.3	104.2	2003	13	…	6	0.669	…	16	104	…
50	4.9	8.4	44.1	44.8	10.3	1995	1	0.094	4	0.571	6	13	9	2
65	8	10.2	52.3	55.6	32.3	2004	5.1	0.098	1	0.978	11	23	40	…
77	3.8	5.6	67.2	67.1	58.0	2002	20.4	…	52	0.387[a]	121	106	138	…
63	4.3	10.2	52.2	58.4	94.0	2003	7.7	0.090	1	…	13	30	116	…
59	2.9	8.7	47.1	47.0	16.2	1996	1.1	0.015[a]	1	0.050[a]	3	3	5	…
71	5.1	9.3	58.0	67.5	84.2	2003	30.1	0.113	39	0.048	172	133	1524	…
70	11.5	9.1	59.2	61.6	39.7	2002	19.9	0.098	23	0.429	81	117	211	…
38	6.2	10.9	29.6	33.2	11.3	1995	1.3	0.106	5	…	…	10	2	…
41	2.1	5.5	33.6	37.0	1.3	1997	0.2	…	0[a]	…	…	0[a]	0	…
73	3.3	5	62.3	65.0	62.1	2002	13	…	1	…	23	22	2	…
72	5.9	14	58.9	67.7	118.8	2003	27	0.136	48	…	110	144	1577	…

For sources and notes, see page 36.

Countries	WHO Region and mortality stratum (1)	Total population (2) (b)	Population in urban areas (%) (3)	Population in rural areas (%) (3)	Adult literacy rate (%) (3)	Population living below poverty line (% with <1 $ a day) (3)	Access to improved water sources (%) 2002 (3)		Access to improved sanitation (%)[a] 2002 (3)		GDP per capita, PPP (current international $) (2) (c)
		2002	2005	2005	2005	1990-2002	Urban	Rural	Urban	Rural	2002
Luxembourg	Eur-A	443,500	92	8	…	…	100	100	…	…	60025.82
Madagascar	Afr-D	16,437,220	27	73	70.6	49.1	75	34	49	27	744.642
Malawi	Afr-E	10,743,330	17	83	64.1	41.7	96	62	66	42	577.036
Malaysia	Wpr-B	24,304,580	65	35	88.7	<2	96	94	…	98	9160.182
Maldives	Sear-D	286,680	30	70	97.2	…	99	78	100	42	…
Mali	Afr-D	11,373,720	34	66	19.0	72.8	76	35	59	38	976.702
Malta	Eur-A	397,000	92	8	92.6	…	100	100	100	…	17837.42
Marshall Islands	Wpr-B	52,500	67	33	…	…	80	95	93	59	…
Mauritania	Afr-D	2,784,686	64	36	41.2	25.9	63	45	64	9	1575.135
Mauritius	Afr-D	1,210,000	44	56	84.3	…	100	100	100	99	10864.37
Mexico	Amr-B	100,818,500	76	24	90.5	9.9	97	72	90	39	9005.126
Micronesia, Federated States of	Wpr-B	122,380	30	70	…	…	95	94	61	14	…
Monaco	Eur-A	…	100	0	…	…	100	…	100	…	…
Mongolia	Wpr-B	2,448,509	57	43	97.8	13.9	87	30	75	37	1624.434
Morocco	Emr-D	29,640,540	59	41	50.7	<2	99	56	83	31	3810.805
Mozambique	Afr-E	18,438,330	38	62	46.5	37.9	76	24	51	14	1047.196
Myanmar	Sear-D	48,786,370	31	69	89.7	…	95	74	96	63	…
Namibia	Afr-E	1,984,653	34	67	83.3	34.9	98	72	66	14	6317.846
Nauru	Wpr-B	14,000	100	0	…	…	…	…	…	…	…
Nepal	Sear-D	24,124,750	16	84	48.6	37.7	93	82	68	20	1382.727
Netherlands	Eur-A	16,144,000	67	33	…	…	100	99	100	100	29037.67
New Zealand	Wpr-A	3,939,100	86	14	…	…	100	…	…	…	21788.001
Nicaragua	Amr-D	5,342,000	58	42	76.7	45.1	93	65	78	51	3210.851
Niger	Afr-D	11,425,340	23	77	19.9	61.4	80	36	43	4	806.186
Nigeria	Afr-D	133,189,700	48	52	66.8	70.2	72	49	48	30	946.546
Niue	Wpr-B	1,000	37	63	…	…	100	100	100	100	…
Norway	Eur-A	4,538,000	81	20	…	…	100	100	…	…	37148.05
Oman	Emr-B	2,538,000	79	21	74.4	…	81	72	97	61	13340.64
Pakistan	Emr-D	144,902,400	35	65	41.5	13.4	95	87	92	35	2017.641
Palau	Wpr-B	…	68	32	…	…	79	94	96	52	…
Panama	Amr-B	2,940,414	58	42	91.9	7.2	99	79	89	51	6293.048
Papua New Guinea	Wpr-B	5,378,120	13	87	…	…	88	32	67	41	2375.531
Paraguay	Amr-B	5,510,000	59	42	91.6	14.9	100	62	94	58	4606.302
Peru	Amr-D	26,749,000	75	25	85.0	18.1	87	66	72	33	5011.054
Philippines	Wpr-B	79,944,220	63	37	92.6	14.6	90	77	81	61	4172.106
Poland	Eur-B	38,232,000	62	38	…	<2	100	…	…	…	10706.65
Portugal	Eur-A	10,368,000	56	44	…	<2	…	…	…	…	18153.76
Qatar	Emr-B	610,487	92	8	84.2	…	100	100	100	100	…
Republic of Korea	Wpr-B	47,640,000	81	19	…	<2	97	71	…	…	17225.26
Republic of Moldova	Eur-C	4,255,000	46	54	96.2	22.0	97	88	86	52	1476.655
Romania	Eur-B	21,803,000	55	45	97.3	2.1	91	16	86	10	6732.559
Russian Federation	Eur-C	144,070,800	73	27	99.6	6.1	99	88	93	70	8308.812
Rwanda	Afr-E	8,163,000	22	78	64.0	…	92	69	56	38	1245.639
Saint Kitts and Nevis	Amr-B	46,710	32	68	…	…	99	99	96	96	12190.92
Saint Lucia	Amr-B	159,133	31	69	…	…	98	98	89	89	5521.76
Saint Vincent and the Grenadines	Amr-B	109,164	61	40	…	…	…	93	…	96	5824.662
Samoa	Wpr-B	176,200	23	78	98.7	…	91	88	100	100	5536.602
San Marino	Eur-A	…	89	11	…	…	…	…	…	…	…
Sao Tome and Principe	Afr-D	154,200	38	62	…	…	89	73	32	20	…

For sources and notes, see page 36.

Life expectancy at birth (years) both sexes (4)	Total expenditure on health (% of GDP) (4)	General government expenditure on health as % of total government expenditure (4)	Healthy life expectancy (HALE) at birth (years) 2002 (1)		Number of health workers (5)		Main telephone lines per 100 inhabitants (6)	Cost of a 3-minute fixed-line phone call (US $) (6) (d)	Mobile phone subscribers per 100 inhabitants(6)	Cost of a 3-minute mobile phone call (US $) (6)	Personal computers per 1000 inhabitants (6) (e)	Internet users per 1000 inhabitants (6) (f)	Internet hosts per 100 000 inhabitants (6) (g)	ICT expenditure, % GDP (2) (h)
2003	2002	2002	Males	Females	(per 10 000)	year	2005	2005	2005	2005	2005	2005	2005	2002
79	6.2	12	69.3	73.7	121.6	2003	79.7	0.875	106	0.351	594	370	3870	…
57	2.1	8	47.3	49.9	3.6	2001	0.4	0.073	1	0.527	4	3	3	7
42	9.8	9.7	35.0	34.8	2.7	2003	0.7	0.059	1	0.861	1	3	0	…
72	3.8	6.9	61.6	64.8	25.1	2002	19	0.032	38	0.426	147	320	352	…
65	5.8	12.5	59.0	56.6	20.7	2000	10.2	0.059	15	0.527	71	53	…	…
45	4.5	9	37.5	38.3	1.9	2000	0.5	0.070[a]	1	1.228[a]	1	2	2	…
79	9.7	14.3	69.9	72.9	92.3	2003	52.3	0.116	70	0.978[a]	255	303	1857	…
61	10.6	10.9	53.9	55.7	34.0	2000	8.2	…	1	0.3	56	24	9	…
51	3.9	10.1	42.8	46.3	8.6	1995	1.2	0.126	9	…	11	4	3	3
72	2.9	8.3	60.3	64.6	31.8	1995	27	0.043	29	0.1	149	103	286	…
74	6.1	16.6	63.3	67.6	27.9	1999/01	14.7	0.158[a]	26	0.825[a]	82	98	1087	…
70	6.5	8.8	57.0	58.4	28.9	2000/03	8.7[a]	…	2	1.8	…	51	539	…
81	11	14.6	70.7	75.2	…	…	…	…	…	…	…	…	…	5
65	6.6	10.6	53.3	58.0	60.9	2002	5.3	0.016	9	0.946	28	21	5	…
71	4.6	4.9	59.5	60.9	14.2	2002	3.8	0.147	21	0.653	17	24	9	…
45	5.8	19.9	36.3	37.5	3.1	2000	0.5	0.079	1	1.003	5	3	11	…
59	2.2	2.3	49.9	53.5	7.8	2000	0.7	0.048	0	0.013	5	1	…	…
51	6.7	12.9	42.9	43.8	31.4	1997	6.5	0.031	8	0.638	71	27	198	…
61	7.6	9.2	52.7	57.5	55.0	2004	16.0[a]	…	13[a]	…	…	26[a]	414	7
61	5.2	7.5	52.5	51.1	4.2	2001/02	1.4	0.013	0	0.231	4	3	5	11
79	8.8	12.2	69.7	72.6	169.4	2002/03	61.8	0.107[a]	75	…	467	506	19371	…
79	8.5	15.5	69.5	72.2	112.6	2001/03	44.8	…	62	1.792	413	484	10983	…
70	7.9	15.2	59.7	63.1	17.8	1999/03	3.2	0.084	4	…	28	17	63	…
41	4	10	35.8	35.2	3.0	2002	0.2	0.102[a]	0	0.225[a]	1	1	1	…
45	4.7	3.3	41.3	41.8	…	…	0.6	0.107	1	1.079[a]	7	4	1	5
71	9.7	16	58.9	62.0	118.6	2003	…	…	…	…	…	…	…	…
79	9.6	18.1	70.4	73.6	183.4	2003	73.4	0.153	84	0.396[a]	528	503	5618	7
74	3.4	7.3	62.7	65.3	46.4	2002	9.2	0.074	18	1.974	37	71	27	…
62	3.2	3.2	54.2	52.3	12.0	2003	2.5	0.020	1	0.289	4a	10	9	9
68	9.1	11.4	58.7	60.5	25.9	1998	…	…	…	…	…	…	…	…
75	8.9	23.1	64.3	68.1	23.6	2001	12.9	0.120[a]	18	…	38	41a	246	…
60	4.3	13	51.4	52.4	6.0	2000	1.1	0.077	0	0.577	59	14	10	7
72	8.4	17.5	59.6	64.2	7.8	2002	4.7	0.088[a]	29	0.252[a]	35	17	75	6
70	4.4	12.4	59.6	62.4	19.7	2000	6.2	0.080	9	…	43	90	73	5
68	2.9	4.7	57.1	61.5	73.0	2002	4.2	…	19	0.464	28	44	48	4
75	6.1	9.8	63.1	68.5	77.3	2003	30.1	…	36	…	106	230	1703	…
77	9.3	14.2	66.7	71.7	72.9	2003	42.1	0.113	83	0.964[a]	135	194	1594	7
74	3.1	6.8	66.7	63.8	78.3	2002	28.6	…	43	0.593	178	113	28	…
76	5	10.7	64.8	70.8	58.2	2002	48.9	…	68	0.302	494	552	856	3
67	7	12.9	57.2	62.4	105.4	2003	16.1	0.015	8	…	18	34	50	4
71	6.3	12.7	61.0	65.2	62.1	2003	19.4	0.112	24	…	83	101	189	…
65	6.2	9.5	52.8	64.1	127.6	2003	24.2	…	12	…	89	41	279	…
45	5.5	13.4	36.4	40.2	2.3	2002	0.3	0.088	1	1.241	…	3	15	…
70	5.5	9.7	59.9	63.1	61.5	1999	50	…	11	…	191	213	4	…
72	5	11.5	61.2	64.2	28.4	1999	32	0.089	9	…	150	82a	18	…
70	5.9	11.9	59.9	62.2	26.7	2002	23.4	…	9	…	120	60	3[a]	…
68	6.2	13.9	59.2	60.3	22.0	2002	6.5	0.033	2	0.266	7	22	3162	…
81	7.7	20.4	70.9	75.9	…	…	76.3	…	62	…	760	531	5967	3
59	11.1	14.5	54.2	54.7	20.4	1996	4.1	0.165	1	…	…	73	708	8

For sources and notes, see page 36.

Countries	WHO Region and mortality stratum (1)	Total population (2) (b)	Population in urban areas (%) (3)	Population in rural areas (%) (3)	Adult literacy rate (%) (3)	Population living below poverty line (% with <1 $ a day) (3)	Access to improved water sources (%) 2002 (3)		Access to improved sanitation (%)[a] 2002 (3)		GDP per capita, PPP (current international $) (2) (c)
		2002	2005	2005	2005	1990-2002	Urban	Rural	Urban	Rural	2002
Saudi Arabia	Emr-B	21,885,970	89	12	77.9	…	97	…	100	…	12468.55
Senegal	Afr-D	10,007,000	51	49	41.0	26.3	90	54	70	34	1591.818
Serbia and Montenegro	Eur-B	8,160,000	52	48	…	…	99	86	97	77	…
Seychelles	Afr-D	82,436	50	50	91.9	…	100	75	…	100	…
Sierra Leone	Afr-D	5,235,472	40	60	29.6	57.0	75	46	53	30	515.895
Singapore	Wpr-A	4,164,000	100	0	92.5	…	100	…	100	…	24012.64
Slovakia	Eur-B	5,379,000	58	42	99.7	<2	100	100	100	100	12939.83
Slovenia	Eur-A	1,994,000	51	49	99.7	<2	…	…	…	…	18437.44
Solomon Islands	Wpr-B	443,296	17	83	…	…	94	65	98	18	1691.972
Somalia	Emr-D	9,318,946	36	64	…	…	32	27	47	14	…
South Africa	Afr-E	45,345,290	58	42	82.4	7.1	98	73	86	44	10135.51
Spain	Eur-A	40,917,300	77	23	…	…	…	…	…	…	21599.33
Sri Lanka	Sear-B	19,007,000	21	79	92.1	6.6	99	72	98	89	3561.773
Sudan	Emr-D	32,790,850	41	59	59.0	…	78	64	50	24	1805.965
Suriname	Amr-B	433,456	77	23	…	…	98	73	99	76	…
Swaziland	Afr-E	1,088,176	24	76	79.2	…	87	42	78	44	4546.523
Sweden	Eur-A	8,924,000	83	17	…	…	100	100	100	100	26018.71
Switzerland	Eur-A	7,290,000	68	33	…	…	100	100	100	100	30360.62
Syrian Arab Republic	Emr-B	16,985,660	50	50	82.9	…	94	64	97	56	3527.734
Tajikistan	Eur-B	6,265,300	24	76	99.5	10.3	93	47	71	47	980.595
Thailand	Sear-B	61,612,840	33	68	92.6	<2	95	80	97	100	7007.143
The former Yugoslav Republic of Macedonia	Eur-B	2,038,000	60	40	…	<2	…	…	…	…	6504.877
Timor-Leste	Sear-D	832,000	8	92	…	…	73	51	65	30	…
Togo	Afr-D	4,759,539	36	64	53.0	…	80	36	71	15	1656.634
Tonga	Wpr-B	101,163	34	66	98.8	…	100	100	98	96	6838.235
Trinidad and Tobago	Amr-B	1,303,976	76	24	98.5	12.4	92	88	100	100	9599.477
Tunisia	Emr-B	9,781,000	64	36	73.2	<2	94	60	90	62	6765.351
Turkey	Eur-B	69,626,000	67	33	86.5	<2	96	87	94	62	6388.6
Turkmenistan	Eur-B	4,792,900	46	54	98.8	12.1	93	54	77	50	5132.611
Tuvalu	Wpr-B	10,000	57	43	…	…	94	92	92	83	…
Uganda	Afr-E	24,600,000	12	88	68.9	…	87	52	53	39	1403.218
Ukraine	Eur-C	48,717,300	67	33	99.6	2.9	100	94	100	97	4905.611
United Arab Emirates	Emr-B	3,754,000	86	15	77.3	…	…	…	100	100	…
United Kingdom	Eur-A	59,229,000	89	11	…	…	100	…	…	…	26134.2
United Republic of Tanzania	Afr-E	35,181,300	38	63	77.1	19.9	92	62	54	41	581.341
United States of America	Amr-A	288,369,000	81	19	…	…	100	100	100	100	35924.25
Uruguay	Amr-B	3,361,000	93	7	97.7	<2	98	93	95	85	7769.406
Uzbekistan	Eur-B	25,271,000	36	64	99.3	21.8	97	84	73	48	1667.179
Vanuatu	Wpr-B	205,573	24	76	…	…	85	52	78	42	2895.585
Venezuela	Amr-B	25,220,000	88	12	93.0	15.0	85	70	71	48	5386.774
Viet Nam	Wpr-B	80,423,990	27	73	90.3	17.7	93	67	84	26	2303.552
Yemen	Emr-D	18,600,920	26	74	49.0	15.7	74	68	76	14	870.592
Zambia	Afr-E	10,244,420	37	64	…	63.7	90	36	68	32	838.660
Zimbabwe	Afr-E	13,000,970	36	64	90.0	36.0	100	74	69	51	…

For sources and notes, see page 36.

Life expectancy at birth (years) both sexes (4)	Total expenditure on health (% of GDP) (4)	General government expenditure on health as % of total government expenditure (4)	Healthy life expectancy (HALE) at birth (years) 2002 (1)		Number of health workers (5)		Main telephone lines per 100 inhabitants (6)	Cost of a 3-minute fixed-line phone call (US $) (6) (d)	Mobile phone subscribers per 100 inhabitants(6)	Cost of a 3-minute mobile phone call (US $) (6)	Personal computers per 1000 inhabitants (6) (e)	Internet users per 1000 inhabitants (6) (f)	Internet hosts per 100 000 inhabitants (6) (g)	ICT expenditure, % GDP (2) (h)
2003	2002	2002	Males	Females	(per 10 000)	year	2005	2005	2005	2005	2005	2005	2005	2002
71	4.3	11.6	59.8	62.9	47.6	2001	15.1	0.040	23	0.4	137	65	67	…
56	5.1	11.2	47.1	48.9	3.6	1995	2.2	0.169	5	0.572	20	10	8	…
73	8.1	10.7	62.7	64.9	90.6	2002	23.3	0.009	26	0.312[a]	27	60	158	…
72	5.2	6.6	57.4	64.9	99.5	1996	26.9	0.150	55	0.486a	161	145	329	10
38	2.9	6.8	27.2	29.9	4.5	1996	0.5	0.029	1	0.54	…	2	6	6
80	4.3	5.9	68.8	71.3	58.5	2003	46.3	0.022	80	0.335	622	504	8126	…
74	5.9	10.3	63.0	69.4	102.2	2003	26.8	0.122[a]	54	0.645[a]	180	160	1599	…
77	8.3	14.7	66.6	72.3	94.2	2002	40.5	0.066	84	…	301	376	1793	…
70	4.8	11.8	55.4	57.1	15.0	2003	1.5	0.068	0	0.907	41	5	106	9
44	…	…	36.1	37.5	2.4	1997	1	…	0	…	…	9	…	4
49	8.7	10.7	43.3	45.3	45.7	2001	10.7	0.094	30	0.484	73	68	438	5
80	7.6	13.6	69.9	75.3	66.8	2000/02	43.4	0.068[a]	82	…	196	193	1450	…
71	3.7	6	59.2	64.0	11.6	2000/02	4.7	0.034	5	0.22	13	11	12	
59	4.9	6.3	47.2	49.9	9.7	2001/02	2	0.034	1	0.139[a]	6	3	…	…
66	8.6	10.3	56.7	60.8	21.2	1999/00	16.4	0.049	23	0.562	42[a]	42	5	8
35	6	10.9	33.2	35.2	33.8	2000	3.4	0.038	7	0.49	24	19	129	8
81	9.2	13.5	71.9	74.8	141.3	2002	73.6	0.110[a]	89	…	621	573	9495	…
81	11.2	18.7	71.1	75.3	122.0	2000	74.4	0.154	79	0.769	709	351	7703	…
72	5.1	6.5	60.4	63.1	33.1	2003	12.3	0.012	2	0.233	19	13	0	4
61	3.3	5.7	53.1	56.4	68.6	2003	3.7	0.011	0	…	…	1	5	…
70	4.4	17.1	57.7	62.4	19.2	1999	10.5	0.070	26	0.209	40	78	162	…
72	6.8	14	61.9	65.0	80.9	2001	27.1	0.015[a]	18	…	…	48	153	…
58	9.7	9	47.9	51.8	12.1	2002	…	…	…	…	…	…	…	
52	10.5	7.8	43.5	45.7	3.0	2001	1	0.102	4	0.71	31	41	2	…
71	6.9	15.8	61.9	61.8	37.8	2001/02	11.3	0.055	3	0.095	20	29	19642	5
70	3.7	5.7	59.8	64.2	36.2	1999	25	0.037	28	1.438	80	106	554	8
72	5.8	7.5	61.3	63.6	38.3	2002	11.7	0.021	6	0.528	34	52	4	…
70	6.5	10.3	61.2	62.8	44.0	2002	28.1	0.125	35	0.494	45	73	230	…
60	4.3	12.1	51.6	57.2	100.3	1997/03	7.7	…	0	…	…	2[a]	42	…
61	4.4	1.5	53.0	53.1	47.6	2002/03	6.8[a]	…	…	…	…	131	89949	8
49	7.4	9.1	41.7	43.7	1.4	2002	0.2	0.209	2	0.606	3	4	9	…
67	4.7	9.4	54.9	63.6	112.8	2003	21.6	…	8	…	19	18	143	8
73	3.1	7.3	63.5	64.2	52.1	2002	29.1	…	65	0.245	120	271	1394	…
79	7.7	15.8	69.1	72.1	75.2	2001/03	59.1	0.179	84	0.672	406	423	4850	9
45	4.9	14.9	40.0	40.7	3.9	2002	0.5	0.121	2	0.544	4	2	5	7
77	14.6	23.1	67.2	71.3	125.1	1999	64.6	…	49	…	659	551	39988	…
75	10	7.9	63.0	69.4	47.7	2003	28	…	19	…	109[a]	119[a]	2324	…
66	5.5	6.8	57.9	60.9	136.5	2003	6.6	0.005[a]	1	0.358	…	11	1	4
68	3.8	12.8	58.5	59.4	18.1	2004	3.3	0.216	2	0.862	15	35	273	…
74	4.9	8	61.7	66.7	27.9	1999/01	11.3	0.040	26	0.659[a]	61	51	96	…
71	5.2	6.1	59.8	62.9	13.4	2002	4.8	0.024	2	0.353	10	18	1	…
59	3.7	3.5	48.0	50.7	6.7	2001	2.8	0.017	2	0.171	7	5	1	12
39	5.8	11.3	34.8	35.0	12.0	1995	0.8	0.091	1	0.904	7	5	15	…
37	8.5	12.2	33.8	33.3	6.0	2002	2.5	0.013	3	0.403[a]	52	43	21	…

For sources and notes, see page 36.

Sources for tables

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Notes for tables

a. The data refer to the year 2002 unless otherwise indicated by ([a]), which refers to the year 2001.

b. Differences in sources for population statistics may result in discrepancies between urban/rural population estimates and country totals.

c. Purchasing Power Parity (PPP) accounts for the cost of a common basket of goods in the countries being compared, which accounts for price differences between countries and so measures real quantities.

d. 'Three-minute fixed-line phone call' refers to a local call from a residential phone during peak hours. Cost is expressed in US dollars.

e. 'Three-minute mobile phone call' refers to a local call from a cellular phone during peak hours. Cost is expressed in US dollars.

f. Internet users per 1000 inhabitants (estimate).

g. Internet hosts refer to the number of computers in an economy that are directly linked to the worldwide Internet network. This is based on the country code in the host address and thus may not correspond to the actual physical location.

h. ICT expenditures include computer hardware (computers, storage devices, printers and other peripherals); computer software (operating systems, programming tools, utilities, applications and internal software development); computer services (information technology consulting, computer and network systems integration, web hosting, data processing services and other services); and communications services (voice and data communications services) and wired and wireless communications equipment.

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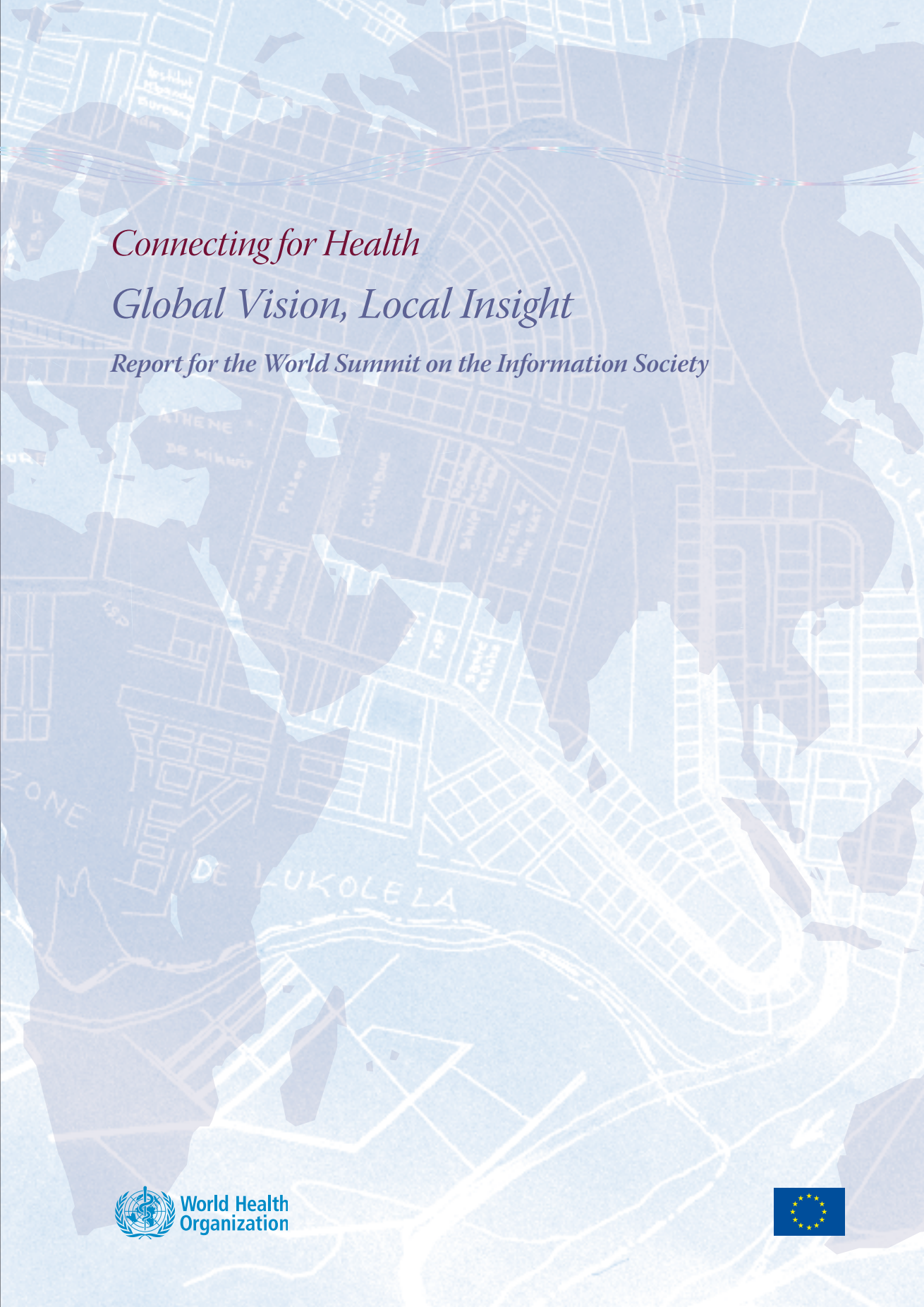

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