Introduction

Delivery of public health care is a complex undertaking requiring well-functioning systems, diverse skills, and many other resources. This chapter provides information on the most critical health system support functions in the Asia Pacific Region, including advances and constraints.

Health workforce size and the distribution of skills, quality, gender and location rarely keep up with national demands for care. The average health worker density among the 37 countries and areas of the WHO Western Pacific Region has reached 5.8 workers per 1000 population, but is critically low at 4.3 per 1000 in the 11 countries of WHO’s South-East Asia Region. In view of chronic shortages, health workforce expansion requires political leadership, adequate financing and comprehensive country-specific plans.

Safe blood supplies and reliable clinical laboratories are necessary to carry out public health functions. There is a high level of voluntary non-remunerated blood donations, and universal screening for HIV and hepatitis B. Laboratory support for disease surveillance and outbreak investigations for common endemic diseases is available in most of the Region. There is increasing reliance on the power of networks for monitoring and reporting communicable diseases and for public health laboratory services.

How a health system is financed can affect its performance and health outcomes. Many countries in the Region have low investment in health from public sources and high spending on health through out-of-pocket payments. Evidence suggests that it is difficult to attain health policy objectives relating to equity, access and coverage, when private payments predominate. The main goals of health financing reforms in the Region are increasing public health investments, improving access to essential health services and providing adequate financial protection through various forms of prepayment schemes, such as social health insurance, which should include a “safety net” for the poor.
National medicines policies are frameworks in the pharmaceutical sector that help meet priority health care needs, but these are not implemented consistently in the Region. Traditional medicine is also an important element of health care in many communities. Access, affordability, quality and irrational use remain problems for both allopathic and traditional medicines.

Although these supporting systems have disparate aims and actions, they present common challenges for leaders. Better, evidence-based policies are needed to garner more support from governments and partners. Training, motivation, and coordination are commonly noted as deficient. Quality, safety and efficacy can be improved everywhere, whether for drugs, training, blood safety or laboratory work. The limited resources that are available must be used more efficiently, using evidence- and performance-based management to guide development.

11.1 Human resources for health

Importance of the health workforce

The importance of human resources for health (HRH) for improving health system performance, for scaling up health interventions, and for achieving the health-related Millennium Development Goals (MDG) is self-evident, and has been identified as such in many country evaluations. The skill mix and numbers of health workers determine the type and range of individual and public health interventions that can be provided. The density of workers in a population impacts the effectiveness of health-related MDG interventions. For example, the prospects for achieving 80% coverage of measles immunization and skilled attendance at birth are greatly enhanced when worker density exceeds 2.5 workers per 1000 population. But the fewest health workers are usually found where health needs are greatest, the so-called “inverse care law of human resources for health”.

Public spending on the health workforce, including wages, salaries and allowances accounts for between 35% and 45% of government health expenditure in the Asia Pacific Region. Despite the large sums spent, and the acknowledged importance for producing good health and confronting health crises, support for human resources for health ranks low on the health policy agenda of many national governments and international agencies.

In the future, health workers will experience profound changes in their work shaped by powerful forces. Population ageing will alter the pattern of health-care demand, and epidemiological transitions will impose heavier burdens of chronic diseases, even as new threats emerge. The course of the HIV/AIDS epidemic will powerfully influence these transitions, including its triple threat of an increased workload for health workers, exposure to the perceived threat of infection and a lowering of morale. The demand for health care will increase in the future because of demographic, technological and epidemiological changes. Many countries forecast significantly increased requirements of health workers in the future because of these changes and demands.

Issues and challenges

In the Asia Pacific Region, health workforce situations vary greatly between and within countries due to factors such as economic, social and political contexts, and countries face many health workforce challenges. The types and seriousness of problems vary, such as in the workforce demand, its response

The term “human resources for health” refers to the stock of all individuals in the formal and informal health sector engaged in actions whose primary intent is to protect, promote and improve population health.
to population and service needs, workforce supply (size, distribution, retention and training), and
workforce governance and management. Ensuring the numerical and geographical balance of the
various categories of health workers, the relevance of training and technical skills and the efficient skill
mix of the health workforce are challenges for most countries and depend on good personnel
management, appropriate career structures, effective staff supervision and development, presence of
adequate support and good working conditions.

Overall workforce shortages

An overall shortage of health workers is the basic and most critical problem in the Asia Pacific Region.
Reasons for this include, among other things, insufficient numbers of health workers due to under-
investment in education and training; losses from the existing workforce; lack of effective coordination
between key partners such as the health, education and employment sectors and development partners;
poor workforce planning; and the out-migration of health professionals.

Countries with low supply rates tend to have absolute supply problems, such as in Pacific island
countries and areas, where external migration has made the situation worse and left some countries at
a crisis level. External migration of health professionals, especially doctors and nurses, is also a major
problem for countries such as Bangladesh, India, Nepal, the Philippines and Sri Lanka.

There are also variations in the structure of health service providers within countries. For instance,
greater numbers of physicians than nurses or midwives were registered in Bangladesh, India, Mongolia
and Myanmar, while in Bhutan, Maldives and Nepal, community health workers represent a high
proportion of all health service providers. Health worker densities in the South-East Asia and the
Western Pacific Regions, the two WHO regions that make up the Asia Pacific Region, were
4.3 workers per 1000 population and 5.8 workers per 1000 population, respectively.

No country’s health workforce will ever be sufficient in any setting to meet all potential demands
for care. Each country should ideally create and maintain an effective workforce size that is appropriate
and relevant to its own specific needs. Some developing countries have health worker densities below
3 per 1000 population, and will need to double or triple their current number of health workers if they
are to maintain health gains and make good progress towards the health-related MDGs. Strong political
commitment and development partner support, structural changes and increased resources are all vital
in this effort.

Skill and distribution imbalances

As shown in Table 11.1, nearly all countries suffer from skill imbalances within and between occupational
groups, creating inefficiencies and low capacity for meeting local needs and changing circumstances.
In some, the skill mix greatly depends on medical doctors and specialists, with Bangladesh, China,
India and Mongolia actually having more doctors than nurses. Conversely, Australia, New Zealand and
Pacific island countries and areas have shortages of doctors in important fields, such as emergency
medicine and intensive care, anaesthesics, mental health and psychiatry, and orthopaedics. Indonesia
and Sri Lanka report shortages of health professionals capable of treating chronic and emerging diseases.
Many countries lacked the expertise in epidemiology, infection control and other specialties to deal
with the emergence of severe acute respiratory syndrome (SARS) and the continuing threat of avian
influenza. Others, such as India, do not have a separate career structure in public health.

In most countries, the health workforce is strongly gender-biased. Females tend to dominate
nursing and allied health professions, while males dominate medical professions and senior health
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Notes: “Other health workers” includes public and environmental health workers, community health workers, laboratory technicians, and health management and support workers.

management and leadership, but this is changing. In Mongolia more than 70% of medical students are women, and in many countries the proportion of females in management and leadership positions is increasing. Other issues that compound skill imbalances include an ageing health workforce and inappropriate use of skills. For example, in some countries, doctors perform duties and tasks that are normally done by nurses elsewhere, and doctors are even retraining to qualify for better paid nursing jobs overseas.

Optimal skill mix depends on national conditions and contexts, and varies from system to system. Changing the skill mix of the health workforce is one option for increasing the efficiency of a health system. The challenge for many countries is how to maximize the effectiveness of a limited workforce and, in view of resource and structural limitations, revamp health plans for a workforce that more closely reflects the health needs of their populations. Evidence-based decisions on the usual demands from health-care providers can be a useful basis for suggesting an optimal skills mix for various levels.

The problem of distribution is often geographical imbalance, biased towards urban and affluent areas. For example, in Cambodia, 85% of the population reside in rural areas, yet only 13% of government health professionals work there. In Nepal, only 20% of rural physician posts are filled, compared with 96% in urban areas. Existing shortages of various types of health-care providers are made worse by poor governance and a reluctance or inability to enforce decisions.

For a variety of reasons, health professionals often do not choose to work in remote or very poor rural areas. The private sector also siphons off qualified health workers from the public sector in many countries, and unplanned health worker migration compounds the situation. Achieving equitable health worker distribution is often difficult and can require strategic actions within and beyond the health sector, such as structural and economic changes, to increase revenues and health resources and provide better working environments and incentives.

**Working conditions and performance**

Common issues and challenges that seriously affect workforce retention, morale and performance include excessive workloads with poor remuneration and high-risk working conditions, or both; lack of incentives and limited career advancement opportunities; lack of proper equipment and supplies; workplace injuries; violence and abuse; poorly defined job descriptions; inadequate supervision and support; and inappropriate rules and regulations. Ineffective performance management results in poor utilization of skills and inhibits flexible deployment of staff. Nearly all countries need to improve work environments by scaling up good practices to strengthen the management of existing resources, assure adequate supplies and facilities, and create monetary and non-financial incentives to retain and motivate health workers.

**Education and training**

The training of health workers and managers is an indispensable part of health development and has received large investments in the Region from national governments, agencies and development partners. However, much of the potential return on this investment has not been realized. Some of the problems found are:

- variable quality and standards of education and training;
- mismatch of output numbers and training outcomes with health service requirements;
Chapter 11

The capacity for education and training varies across countries in the Region, from a total lack of training institutions in some small island countries to sufficient and rapidly expanding programmes to meet increasing demand. The quality and standards of curricula, licensing and registration systems also vary within and between countries. Competition between the health and education sectors and increased privatization of education and training have resulted in declining entrance requirements and standards of education. Lack of appropriately trained educators and educational resources, as well as poor learning and teaching methodologies, further compromise the quality of education, as do inappropriate curricula, often drawn from situations at different levels of health care development.

A fundamental weakness in most countries is ineffective coordination among partners. Different organizations are often responsible for training and health services, i.e. ministries of education and health, which rarely collaborate in the planning and production of human resources for health. Educational institutions often established curricula independently, resulting in inappropriate curricula for actual health needs. In some cases health workers are trained primarily to meet the demands of global labour markets, disregarding local or national needs and social accountability. Mushrooming private medical and other health professional schools of questionable quality, without concern for national needs, is a major problem in some countries. Continuing and in-service education and training opportunities, intended to keep professionals abreast of developments in medical knowledge and technology, are very limited in most countries.

Box 11.1: Health worker productivity and compensation

Health outcomes did not improve significantly when Cambodia's health system was re-established after years of conflict, in part because there was low utilization of the new health services. The poor quality of services was due in large part to low pay and productivity of health workers. The wage burden in the national health budget was only 22% of total costs (versus 35%–45% in the Region). Salaries were far less than the cost of living for a family, and health workers often asked for unofficial payments from patients, worked few hours and conducted private practices.

A series of pilot projects introduced new management approaches, improved drug supplies and provided higher compensation packages, including performance incentives. In addition to reducing out-of-pocket costs to patients, an evaluation of the projects showed that utilization increased when unofficial payments were eliminated and health workers received enough to support their families. Utilization increased approximately in proportion to their total compensation. Because of the low starting level, the total cost of a relatively large increase in compensation was affordable to the government, and a certain amount came from official patient fees.

Another study based on interviews with public sector health workers found that for their current compensation, they were willing to work only four hours a day, and to work eight hours they would need five times their base income. Alternatively, they would work eight hours for three times their base income, if they were allowed to retain a private practice. Alternative non-monetary incentives such as training opportunities had little appeal.

Workforce information, planning and management

Existing information systems mostly fail to provide reliable and accurate information on human resources for health. Incomplete data on the health workforce, inadequate evidence, and lack of trained and experienced personnel make effective planning, policy development and training operations more difficult. Health-care reforms shift focus from direct government provision of personal health services to a public health role and often require health workers to assume new functions; this includes human resources managers, who need specific information and competencies to successfully manage these changes. Few trained personnel are involved in workforce planning in most countries, so the loss of a competent officer can result in a dramatic reduction in planning and management capacity. Some countries have no focal point for national workforce data and statistics.

Absence of appropriate human resources policies is partly responsible for imbalances in the workforce, skill-mix inefficiencies, varying competencies and ineffective human resources management. Workforce planning is too often undertaken to avert immediate crisis situations, rather than to anticipate new health needs, services and technologies, and it also tends to be an ad hoc activity separate from the budget and management cycles. Problems sometimes include ill-defined categories of workers, professions and jobs, and a focus on individual professions at a time when health-care is becoming increasingly multidisciplinary.

Limited attention is often given to human resources management, with policy-makers more often concerned with high personnel costs and size of the workforce, rather than improving personnel motivation, workplace practices and conditions, and performance monitoring. There is a need to standardize conditions of employment within the framework of public service, including recruitment and promotion based on merit, appropriate utilization of staff classifications, grading of posts, and salary increments and career pathways.

Development partners and donor input into human resources for health are mostly fragmented and uncoordinated. A common obstacle to sustaining human resources for health development is that aid commitments are often short-term and unreliable. Recruitment ceilings intended to limit public expenditures constrain scaling up human resources for health in low-income countries. The challenge for these countries is to convince partners to invest part of the resources and funding for specific health interventions on human resources development, as it is crucial to the successful implementation of any intervention. Credible information and evidence are needed to advocate for investments in health workers as supporting national development.

Response to challenges

Addressing health workforce challenges by developing country-oriented workforce policies and a framework for action requires high-level political commitment, long-term vision, structural and fiscal changes, and the active participation of stakeholders. Different situations and circumstances call for different strategies and actions to address key workforce issues. Some issues require regional and international cooperation for sharing knowledge and best practices and managing the internal and external migration of health workers.

Too many countries focus health workforce development almost entirely on clinical care requirements and leave the augmentation of public health teams to an unspecified “later date”.


**Country and regional level responses**

Country-level actions include:

- generating good evidence and knowledge to formulate human resources policies, strategies and a regulatory framework;
- improving the quality and relevance of health worker education and training;
- increasing production, recruitment and retention of workers;
- managing for performance; and
- building networks and partnerships (country action alliances) to support government health sector leadership with high-level political support.

Some countries have established a national authority to oversee human resources for health policy, strategy development and partner coordination (usually an advisory, regulatory, or ministerial committee), but others have dedicated only a small unit in the health ministry, or have none at all.

Dedicated leadership and good management support the development of a motivated and efficient workforce, which increases workforce retention. Several initiatives in the Asia Pacific Region are

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**Box 11.2: A vision for health workforce direction: Australia**

Recognizing the need to set strategic directions to guide national policy, planning and investments in its health workforce in the next decade, as well as meet workforce challenges proactively and ensure coordinated and collective actions among stakeholders, Australian health ministers have endorsed the implementation of a landmark national health workforce strategic framework and a national workforce plan. The vision is encapsulated in the strategic framework: “Australia will have a sustainable health workforce that is knowledgeable, skilled and adaptable. The workforce will be distributed to achieve equitable health outcomes, suitably trained and competent. The workforce will be valued and able to work within a supportive environment and culture. It will provide safe, quality, preventative, curative and supportive care that is population and health consumer-focused and capable of meeting the health needs of the Australian community”.

The framework’s vision will be achieved through specified actions and outcomes based on seven principles:

- ensuring and sustaining adequate supply;
- workforce distribution that optimizes access to health care and meets the health needs of all Australians;
- creating health environments in which people want to work;
- ensuring the health workforce is always skilled and competent;
- optimal use of skills and workforce adaptability;
- recognizing that health workforce policy and planning must be informed by the best available evidence and linked to the broader health system; and
- recognizing that health workforce policy involves all stakeholders working collaboratively with a commitment to the vision, principles and strategies outlined in the framework.

The framework enables stakeholders to work with much more cohesion and ensures that actions are better coordinated across jurisdictions, service settings, professional groups and all sectors. The national action plan is the basis for implementing the strategic framework and is to be supplemented by a range of national, state and territory action plans and health workforce initiatives. Monitoring and evaluation of the framework and action plan is carried out by the Australian Health Workforce Officials’ Committee.

strengthening human resources management in health planning, policy formulation and evaluation. The International Council of Nurses (ICN) Leadership for Change Programme in China, Mongolia, Papua New Guinea, Viet Nam and some Pacific island countries and areas targets senior nurses and midwives to develop skills for addressing difficult service issues, revising and standardizing curricula, developing human resources policies, raising nursing care documentation standards and delineating continuing education requirements.

The Pacific Regional Leadership and Management Consortium was formed to equip mid-level health managers with the knowledge and skills to provide effective management and leadership, through interdisciplinary training oriented to health services management and public health, and linked to the services to be delivered. Institutional strengthening, optimal resource utilization and sustainability are addressed in a subregional leadership and management development programme at the University of Guam and the National University of Samoa. This regional competency-based training initiative is aimed at meeting the needs of the subregion’s health systems, and uses participatory and mentored learning culminating in a post-graduate certificate.

Public health education has received significant attention since the Regional Conference on Public Health in South-East Asia in 1999 and its “Calcutta Declaration”. The Regional South-East Asia Public Health Education Institute’s network, based in Thailand’s Mahidol University, has been active in promoting public health education. The objectives include strengthening curricular relevance, quality improvement, research and promoting leadership in public health. This network assists in the upgrading of curricula, strengthening teaching faculties, supporting new schools of public health and developing accreditation policies. The South-East Asia Public Health Initiative offers support for strengthening public health education, developing new schools of public health and facilitating a network of public health schools. The University of Colombo Postgraduate Institute of Medicine in Sri Lanka has initiated a network of postgraduate medical education for seven countries of the South Asian Association for Regional Cooperation (SAARC).

Parallel to the Human Resources for Health Observatory Initiative in the Pan American Health Organization, the Asia-Pacific Action Alliance for Human Resources for Health (AAAH) was established in June 2005 and now comprises 15 countries. Key priority actions for the AAAH are advocacy for human resources for health at national and regional levels, sharing knowledge about management and best practices, supporting capacity-building for human resources for health planning and management, coordination of technical support based on member requests and convening technical meetings. In addition, countries such as China, Nepal and the Philippines have embarked on developing country-specific human resources for health datasets for their health information and management systems.

Various tools and guidelines for human resources for health planning and performance management are now available. A simple planning tool has been developed, using as inputs the number of trained workers, attrition rates and preferred ratios, and provides the user with information to plan staffing requirements, levels (surplus or deficit) and costs over specified periods. This was used to plan the nursing workforce in Brunei Darussalam and the Philippines, for doctors in Vanuatu, medical assistants in the Lao People’s Democratic Republic and geriatricians in one Australian state. Requiring only a few hours of training, it does not replace more sophisticated systems, but it does provide planners with a

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21 Established in 2002, the Consortium comprises several Pacific island countries’ health ministries, WHO, the Secretariat of the Pacific Community (SPC), the New Zealand Agency for International Development, the United States Centers for Disease Control and Prevention, Curtin University (Australia), the University of the South Pacific (Fiji) and the Fiji School of Medicine, the University of Guam, the National University of Samoa (NUS) and Auckland University. The SPC serves as the secretariat of the Consortium.
user-friendly “what if” tool. Another health service planning toolkit was designed to aid nurses and midwives to be advocates for human resources and to influence policy-making. It contains modules on problem identification, stakeholder analysis, understanding contextual factors and environment, decision-making and change processes, and monitoring and evaluation.

In some areas with shortages of doctors, or with only basic health facilities and such limited resources that the skills of clinicians and specialists cannot be fully used, other trained cadres such as medical assistants, assistant doctors and nurse practitioners have been officially assigned clinical duties and responsibilities. This has been done in Fiji (nurse practitioners and medical assistants), Kiribati (medical assistants), Mongolia (family practitioners) and Samoa (nurse practitioners and managers). This strategy is particularly successful when backed up by an effective referral system for patients needing care beyond the practitioner’s competencies. However, consumer demand for specialist care, patients bypassing frontline providers and professional protectionism are challenges for such initiatives. Innovative educational and training schemes for doctors and mid-level health practitioners to serve in rural and remote communities have been piloted in some areas.

Efforts to scale up human resources for health capacity to address epidemiological and demographic trends have been hampered by limited resources and lack of commitment and coordination, particularly affecting support for additional health staff positions. Efforts to mobilize donor resources for human resources for health generally have had limited success, but more development partners are now supporting interventions out of concern about the global workforce crisis and emerging disease threats. Strong country leadership coupled with flexibility of donors to let countries lead and coordinate resources are needed to avoid duplication and achieve good and sustainable outcomes.

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**Box 11.3: The Philippines: an integrated approach to human resources for health development and management and health sector reforms**

Recognizing that quality health services are only as good as the people who deliver the service, the Philippines takes an integrated approach to human resources for health development and management systems that supports the objectives of the national health sector reform agenda and a “culture of competence” in its workforce, including health leaders and managers in the various areas and levels of the health system.

The five components of the integrated approach and their respective outcomes include:

1. a competency-based job analysis (job evaluation policies, guidelines and tools; competency-based job descriptions; and models of health facility organizational structure with functions and staffing patterns);
2. a career development management system (individual career planning, career path charting, succession planning and retention planning; developing standards for core and functional competencies; and proficiency assessment tools);
3. a human resources for health information system (collection of core data at all levels of the system, data encoding, designing models, software and information system at various facilities, with links to networks, and user manuals);
4. human resources for a health master plan, with resource requirements and monitoring and evaluation at various stages of the master plan for 5, 10 and 15 years; and
5. a capacity enhancement programme for human resources for health managers.

There have been some success stories in the Asia Pacific Region, as in China, where over 1500 nurses have been trained through the HIV/AIDS Nursing Leadership Initiative\textsuperscript{ii}, a multi-partner project aimed at strengthening the capacity of nurses to effectively respond to the health needs of patients, family members and communities affected by HIV/AIDS. It is expected that these nurses and midwives will conduct training courses in their own countries.

\textsuperscript{ii} The project began in 2002 as a collaborative undertaking by the Ministry of Health and selected university schools of nursing, the China Nurses Association, the Catholic Medical Mission Board, the Maryknoll China Service Project, University of Illinois (Chicago) College of Nursing, the Hong Kong AIDS Foundation and WHO.
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Other actions countries have taken to improve education and training for an adequately skilled health workforce include:

- increasing student intakes to training courses and setting up additional health-training institutions;
- revising, adapting or developing new curricula to suit changing population health needs and epidemiological and demographic transitions;
- quality improvement and assurance for basic and in-service training through application of defined standards and training outcomes, accreditation, licensure and regulation;
- promoting and maintaining collaboration and cooperation between health services and health-training institutions through advisory committees and dialogue meetings;
- enhancing professional development though self-learning, distance learning and in-service training programmes, and utilizing interactive and outcome-based learning and teaching modalities;
- balancing workforce education and training in terms of skill mix, gender and sociocultural aspects, including training of multidisciplinary teams; and
- regulating and overseeing health workforce education and training to enhance outcomes, control costs, and ensure quality and standards of practice.

Box 11.5: The Pacific Open Learning Health Net (POLHN): an innovative e-learning initiative

The Pacific Open Learning Health Net (POLHN) initiative is aimed at meeting the continuing education needs of health professionals in Pacific island countries and areas while they remain in their jobs, minimizing staff shortages and costly overseas training. Internet-equipped learning centres in 10 Pacific countries enable health personnel to be trained in basic information technology and computer skills so they can access electronic health information or take online and distance learning courses. Courses specifically designed to meet training needs of health personnel were developed and delivered via an interactive website (www.polhn.com) or on CD-ROM. Local trainer/mentors support course participants where needed. Self-directed learning modules in print and CD-ROM are distributed for use in countries without learning centres or if access to the learning centres is difficult. The Commonwealth of Learning maintains a primary site for the POLHN at http://www.colfinder.org/wolhn to facilitate easy access to relevant international publications and literature.

Some 25 health courses on subjects such as blood safety, HIV/AIDS, diabetes, radiology, health informatics, communications and counselling have been conducted through the learning centres, benefiting more than 500 health professionals from 2002 to 2006. POLHN has been a success according to an external evaluation conducted in 2004. There was a strong interest among the participating countries to contribute to its long-term sustainability as the courses are deemed appropriate and useful, there was a desire for more accredited courses, and it contributed to the retention of workers.

Source: Pacific Open Learning Health Net (POLHN) website. See: http://www.polhn.wpro.who.int

Future directions

Country-based and country-led actions

Human resources for health strategic planning guides leaders and stakeholders in planning human resources for health investments, managing for performance, developing enabling policies, and building capacity for research, training and practice. Monitoring results during the process of building national
capacity will help make mid-course corrections. Good data are essential to inform and guide such efforts. A strong action coalition linking all stakeholders with an interest in health workforce development is conducive to human resources for health development.

A tool for developing an effective and sustainable health workforce is available (Figure 11.1).

In Mongolia, for example, a meeting of human resources for health partners was convened in November 2006 to mobilize commitment and support from national political leaders, government ministries, provincial governors, development partners and several United Nations agencies for the implementation of the human resources development strategic actions of the Health Sector Strategic Master Plan (2006–2015). The Government and the partners agreed to the establishment of a high-level coordinating body with a permanent secretariat in the Ministry of Health and a working group to facilitate implementation of the national human resources for health strategic plan.

There is increasing appreciation in Asia Pacific Region of the importance of building partnerships between the education and health sectors. Such partnerships facilitate the dual goals of ensuring both the participation of health personnel in design and implementation of national health policies and reforms, and the relevance of health professional education to country needs.

Cross-cutting health skills for key categories of health professionals should be emphasized. The health and education sectors should work together towards achieving coverage, motivation and competence for better management of the health workforce for better performance, with emphasis on:

- **coverage strategies** that promote adequate numbers, appropriate skill mixes and outreach to vulnerable populations;
• motivation strategies that focus on adequate remuneration, a positive work environment, opportunities for career development and supportive health systems, recognizing that managing the health workforce can be “win-win” with benefits for all parties; and

• competencies that can be advanced through training in appropriate attitudes and skills, creating conditions for continuous learning, and cultivating leadership, entrepreneurship, and innovation.

Countries should strengthen national data, information, analysis and research on the health workforce. Well-designed studies of the health workforce will help understand the nature of the workforce, including its size, composition, current functioning, skills, availability, adequacy of its training, training needs and the appropriate roles of the workforce. The studies will also help show how the workforce can be strengthened to support new approaches to priority health problems.

Regional- and global- level actions

At the regional levels, with support from relevant international partners, the following key actions should be considered:

• Advocacy for increased investments in human resources for health by development partners as being crucial to national development. This may require changes in donor policies in favour of health system and human resources for health strengthening and allowing greater support to country-led programmes.

• Increased technical support as well as flexible financial support for country health system and human resources for health development.

• Supporting countries to overcome the macroeconomic and structural constraints that affect workforce supply, demand, performance and distribution.

• Sharing of better human resources for health intelligence and best practices through national and regional Observatories on Human Resources for Health and Alliances such as the Asia Pacific Action Alliance on Human Resources for Health (AAAH).

• Twinning approaches for education.

• Regional migration policies.

• Investment plans in education infrastructure.

11.2 Health laboratories and blood safety

Blood transfusion services

Blood transfusion services in the Asia Pacific Region range from efficient, well-organized services based on voluntary non-remunerated blood donors in developed countries to those in the least developed countries that lack resources, function poorly, have inadequate safety and quality monitoring, and are heavily dependent on paid donors.

Approximately 30 million units of blood are collected every year in the Region, a figure steadily increasing as countries such as China improve voluntary non-remunerated blood donations, which grew from 45% in 2000 to 91.3% in 2004. In some areas of the Region, nongovernmental organizations have played a key role in promoting voluntary non-remunerated blood donations.
Collection only from voluntary non-remunerated blood donors in low-risk populations is now recognized as an important element for the safety, quality, availability and accessibility of blood transfusions. Many countries now celebrate World Blood Donor Day and national blood programme managers have been trained in Bangladesh, Bhutan, China, Indonesia, India, Myanmar, Nepal, the Philippines, Sri Lanka, Viet Nam and most Pacific island countries. A core group of national and provincial facilitators has been formed in China to meet the goal set by the Ministry of Health of phasing out paid donations for the clinical use of blood by 2008.

More than 90% of blood collection in China, Nepal and Thailand are from voluntary non-remunerated donors and the rate is 100% in Australia, Brunei Darussalam, the Democratic People’s Republic of Korea, French Polynesia, Japan, Hong Kong (China), Macao (China), Malaysia, New Caledonia, New Zealand, the Republic of Korea and Singapore. Paid blood donations still exist in Bangladesh, China, the Marshall Islands, the Philippines and Viet Nam.

Screening donated blood for HIV and hepatitis B is universal, but the quality of screening needs improvement. This is critical because of the large number of carriers of HIV (7.4 million), hepatitis B (240 million) and hepatitis C (94.5 million) in the Region.

Even though component separation greatly increases the utility of every unit of blood, many countries continue to use whole blood for therapeutic purposes due to a lack of awareness by clinicians and inadequate blood component production facilities.

**Box 11.6: Blood transfusion safety**

WHO recommends the following integrated strategies for blood transfusion safety:

- establishment of a well-organized, nationally coordinated blood transfusion service that can provide adequate and timely supplies of safe blood for all patients in need;
- collection of blood only from voluntary unpaid blood donors at low risk of acquiring transfusion-transmissible infections, and stringent blood donor selection criteria;
- testing of all donated blood for transfusion-transmissible infections, blood groups and compatibility;
- production of blood components to maximize the use of donated blood and enable the provision of therapeutic support for patients with special transfusion requirements;
- appropriate clinical use of blood and the use of alternatives, where possible, to minimize unnecessary transfusions;
- safe transfusion practice at the bedside; and
- comprehensive quality system covering the entire transfusion process, from donor recruitment to the follow-up of recipients of transfusion.


Australia, Cambodia, China, Fiji, India, Japan, the Lao People’s Democratic Republic, Malaysia, Nepal, New Caledonia, New Zealand, Palau, the Philippines, the Republic of Korea, Samoa, Singapore, Solomon Islands, Thailand and Vanuatu already have national blood policies. Bangladesh, Bhutan, Brunei Darussalam, Maldives, Sri Lanka and Viet Nam have developed national blood policies and plans to implement them.

With donor help, Bangladesh, the Democratic People’s Republic of Korea, the Philippines, Sri Lanka and Viet Nam have begun strengthening and coordinating blood transfusion services. Viet Nam
has established a management unit for the implementation of a Regional Blood Transfusion Centres Project. Sri Lanka has completely reorganized its national blood transfusion services with assistance from the Japan Bank for International Cooperation. A central blood bank in Timor-Leste was developed with WHO support and now services a large part of the country.

Regional external quality assessment schemes for blood grouping and screening of infectious markers have been initiated, along with regular monitoring of the quality of laboratory services and the provision of technical support for their improvement. The WHO Collaborating Centre for Training in Transfusion Medicine in Bangkok, Thailand, provides training and acts as a resource centre for strengthening systems quality.

The rational use of blood by clinicians is recognized as a critical issue that requires greater attention. In the Asia Pacific Region, unnecessary transfusions are frequent, with large variations in transfusion practices among and within countries. There is a lack of systematic data to reflect the full magnitude of the problem. The irrational use of blood has an adverse impact on safe supply, especially in developing countries. Training workshops to combat this have been conducted in Bangladesh, Bhutan, Brunei Darussalam, Cambodia, China, Fiji, India, Indonesia, the Lao People’s Democratic Republic, Macao (China), Malaysia, Mongolia, Myanmar, the Philippines, Sri Lanka and Viet Nam. Participants in these workshops come from ministries of health, blood transfusion services, hospitals and relevant professional bodies.

Recognizing the importance of quality in blood transfusion services, many countries have responded to the 2001 WHO Initiative on Quality Management. More than 150 quality managers who were trained under this initiative receive ongoing technical support from WHO collaborating centres.

A plan was developed in China to strengthen capacity and quality management at the Liaoning Provincial Blood Centre and develop it into a central testing centre for all provincial blood services. This pilot project serves as a model for further consolidation of blood service operations in China.

The judiciary and the Ministry of Health and Family Welfare in India joined forces to mandate a system of compulsory registration of all blood banks and ensure that services meet defined quality standards.

Problems and constraints

Uncoordinated, fragmented blood services that are neither efficient nor cost-effective still operate in many developing countries in the Region, constrained by inadequate supervision, lack of quality management and staff training.

Technological advances are being adopted by some countries but widespread irrational transfusion and a lack of programmes to recruit and retain voluntary unpaid blood donors from low-risk populations hamper the delivery of safe blood in adequate quantity. Poor systems quality, equipment maintenance, weak supply chains and ineffective management of scarce resources further compound problems.

Lack of knowledge about the benefits of blood components among prescribers has led to a situation where blood centres are unwilling to establish production facilities. Inadequate resources, a low priority given to safe blood programmes and the remote location of places such as Bhutan, islands in Indonesia and Maldives, Pacific island countries and Timor-Leste, pose further challenges to ensuring the availability of and access to safe blood.
Health laboratories

Laboratory support for disease surveillance and outbreak investigations is available in almost all countries of the Asia Pacific Region for common endemic diseases, including cholera, dengue fever, Japanese encephalitis, malaria and viral hepatitis, with the Lao People’s Democratic Republic, some Pacific island countries and Timor-Leste as the exceptions. Networks supporting these functions in Asia Pacific countries are usually coordinated by designated national public health laboratories, which often deploy services during emergencies. A mobile public health laboratory was established in Aceh, Indonesia, to provide critical support to disease surveillance in tsunami-affected areas.

Antimicrobial resistance patterns of 26 common bacterial species are now monitored through a network of 14 focal laboratories. National antimicrobial resistance surveillance networks operate in India and Thailand. The Gonococcal Antimicrobial Surveillance Programme is an ongoing regionwide susceptibility surveillance project which has been publishing data annually since 1992.

In the Region, 21 countries participate in the Global Influenza Laboratories Network through their respective national influenza centres. Of the four international influenza reference laboratories located in Australia, Japan and Hong Kong (China), two are WHO collaborating centres. An online information-sharing tool is also maintained by the Global Influenza Laboratories Network.

Tuberculosis (TB) is a re-emerging health threat in the Asia Pacific Region. To deal with growing multidrug resistance, 18 countries and areas participate in the Global Network for Surveillance of Drug Resistance in Tuberculosis. Laboratory performance is maintained through the use of standard methods and a quality assurance programme, which relies on a network of seven supra-national TB reference laboratories. Although many countries are establishing or rehabilitating laboratories and training staff at the district level to support expansion of the directly observed treatment, short-course (DOTS) programme, regional capacity to diagnose TB drug resistance remains inadequate and the level of country preparedness necessary to mount an effective response to drug-resistant TB needs improvement.

With surveillance as a key component in the strategy to eradicate poliomyelitis, the Region has 29 laboratories with a focus on the disease and membership in the global network of poliomyelitis laboratories. The Enterovirus Research Centre in Mumbai, India, is the Region’s Global Specialized Laboratory for poliomyelitis. Similarly, 36 laboratories have formed a network to combat measles. China maintains 31 provincial poliomyelitis and measles laboratories and 331 prefecture-level measles laboratories. A formal system for annual accreditation of the poliomyelitis and measles laboratory networks ensures that the laboratories in the regional laboratory network maintain WHO standards.

A subregional laboratory network to monitor and report communicable diseases in Pacific island countries and areas also established an integrated epidemiological surveillance system to provide public health laboratory services for six initial target diseases (cholera, dengue, influenza, leptospirosis, measles and typhoid) through existing public health laboratories in Fiji, French Polynesia, Guam and

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61 In Australia, Brunei Darussalam, China, Fiji, Hong Kong (China), Japan, Republic of Korea, Malaysia, New Zealand, the Philippines, Singapore, Tonga and Viet Nam.
62 Australia, Cambodia, China, Fiji, Hong Kong (China), Republic of Korea, India, Japan, Macao (China), Malaysia, Mongolia, Nepal, New Zealand, the Philippines, Singapore, Thailand, Vanuatu and Viet Nam.
63 Queensland Mycobacterium Reference Laboratory and Institute of Medical and Veterinary Sciences (Australia); Korean Institute of Tuberculosis, (Republic of Korea); TB Reference Laboratory, Department of Health, Hong Kong (China); Research Institute of Tuberculosis (Japan); National TB Reference Laboratory Center Tuberculosis Cluster (Thailand) and the TB Research Centre (India).
64 Victoria Infectious Diseases Reference Laboratory (VIDRL), Melbourne, Australia; National Institute of Infectious Disease (NIID), Tokyo, Japan; and China CDC, Beijing, China, are the Regional Reference Laboratories (RRLs) for both the polio and measles laboratory networks.
New Caledonia. These laboratories are supported by reference laboratories in the Pacific Rim countries. There are 22 countries and areas participating in the Global Salmonella Surveillance Network.\textsuperscript{23, 25}

The importance of the appropriate organization and management of clinical laboratory services is being increasingly recognized by national authorities. A tool for rapid situation analysis and draft standards for clinical laboratories based on relevant International Organization for Standardization (ISO) standards was reviewed and finalized in a workshop held in Manila in October 2003. Cambodia, China, Mongolia, and Viet Nam are establishing more effective and efficient clinical laboratory systems, including strengthening management and coordination at the national level.

Capacity for quality assurance in health laboratories is improving in the Region. Many countries have national standards and are aspiring to obtain ISO certification. Accordingly, training courses are being conducted to create awareness and build the capacity for quality assurance within countries. Distance learning programmes improve the knowledge and skills of workers in various areas of laboratory technology. A quality assurance system for Pacific island countries is available through WHO’s Pacific Open Learning Health Network.

In Malaysia, Myanmar, Nepal, Sri Lanka and Thailand, national laboratories organize external quality assessment schemes for periodic assessment of the quality of public health and clinical laboratories in their networks. Similar schemes in India and Indonesia operate at the subnational level. Pacific island countries have introduced external quality assessment schemes and a network for individual clinical laboratories that contribute to quality improvement.

**Problems and constraints**

Public health laboratories in the Region require strengthening for efficient disease surveillance and management of outbreaks, which are still often not diagnosed in a timely manner. The capacity of public health systems for diagnosing new and emerging infectious diseases is limited. While national networks of public health laboratories are operational in almost all countries, their effectiveness is limited by the exclusion of academic and research institutes, and private and veterinary laboratories. Efforts are under way in India to include the private sector under the Integrated Disease Surveillance Programme.

Modern laboratory services are inadequate in most developing countries in the Region, especially for virology and molecular biological studies. The low priority given to public health laboratories has impeded modernization and the unavailability of diagnostic reagents for emerging and unusual infectious diseases (avian influenza, Nipah virus, SARS and undiagnosed encephalitis are recent examples) has sometimes hampered the early and accurate diagnosis of outbreaks. Samples for diagnosis or confirmation of uncommon and atypical disease presentations sometimes must be sent to laboratories outside the Region. Encouragement and support are needed for the indigenous development and production of reagents for diseases with epidemic potential and for the integration of quality assurance methods. Although infrastructure exists for HIV diagnosis in all countries, the expansion of laboratory support for monitoring antiretroviral therapy in high-burden countries is a priority.

\textsuperscript{23} The countries participating in the Global Salmonella Surveillance Network and the numbers of laboratories are: Australia (13), Cambodia (4), China (59), French Polynesia (1), India (7), Indonesia (6), Japan (10), Republic of Korea (9), the Lao People’s Democratic Republic (4), Malaysia (10), Maldives (1), Mongolia (3), Myanmar (4), New Caledonia (1), New Zealand (3), Nepal (5), Papua New Guinea (2), the Philippines (13), Singapore (2), Sri Lanka (6), Thailand (42), Viet Nam (12).
The long-term benefit of investing in the quality of clinical laboratories is not fully recognized in many countries. Many laboratories lack internal quality control or do not participate in external quality assessment schemes. Laboratory services are often not coordinated and there are few examples of tertiary laboratories taking scientific and technical responsibility for intermediate or district laboratories. There is significant inequity between urban and rural laboratory services in most countries in the Region.\textsuperscript{26}

Regulation of clinical laboratories in developing countries is very weak or non-existent. Few countries have laboratory accreditation systems and in countries where laboratories are licensed, quality is usually not a criteria. With the rapid increase of private laboratories in countries in economic transition, there is an urgent need to develop an appropriate regulatory system to ensure the quality and functionality of laboratory services.

Other problems that need to be addressed include the lack of national laboratory policies, non-existent national focal points for laboratory services development in most countries, and inadequate recognition and motivation of laboratory staff.

### 11.3 Health financing

How health systems are organized and financed is a key determinant of access to and utilization of health services and consequently affects the health of the population. Health care financing has become a major focus of health sector reform in many countries. A response to mounting pressure on limited health resources due to epidemiologic and demographic transitions, these reforms also address poverty reduction and the health problems of disadvantaged groups. In many countries, chronic and “lifestyle” diseases are rising in lockstep with the growth of aging populations, creating a double burden on health care resources. Increasing public demand and the adoption of new, expensive medical technologies are further adding to the strain.

The two main objectives of health financing, equal access to essential health services and protecting individuals from catastrophic health-care costs, require mobilizing adequate and sustainable resources, as well as national regulatory and management capacity.\textsuperscript{27} When goods and services are inefficiently allocated, or market forces do not serve perceived public interest, market failure occurs, a situation adversely affecting health care and requiring some level of government intervention.\textsuperscript{28,29}

Over 53% of the global population (equivalent to 3.4 billion people) live in the Asia Pacific Region,\textsuperscript{30} where half of all countries are classified as least developed, or low-income.\textsuperscript{31} In such countries as Bangladesh, Cambodia, the Lao People’s Democratic Republic, Myanmar and Nepal, the high proportion of people living below the poverty level, and their poor health status, have raised the concern of leaders for sectoral reforms to improve access to health services and provide financial risk protection to the poor.

Financing systems are fragmented, and because of low levels of insurance, the poor are not adequately protected. In most developing countries in the Region, too many people are forced to make out-of-pocket (OOP) payments to finance health care.\textsuperscript{32} The Fifty-eighth World Health Assembly in May 2005 adopted a consensus resolution on sustainable health financing, universal coverage and social health insurance. The resolution endorses the principle of prepayment: pooling financial resources and risks across a large population group to achieve financial-risk protection and avoid “catastrophic”
expenditure and impoverishment of individuals as a result of seeking care. This is made workable through purchasing cost-effective health interventions.\textsuperscript{33}

This section describes the achievement of human development among these countries, followed by analysis of levels and sources of financing, equity considerations, identification of major issues, and key actions recommended to increase social protection for the poor and reach universal coverage.

**Human and economic achievement**

Health and human development indicators for 29 countries in the Region, drawn from the United Nations Development Programme (UNDP)\textsuperscript{34} and WHO\textsuperscript{35} databases, are shown in Table 11.2. The data highlight large differences in the Region and suggest important relationships between indicators.

The Human Development Index is a composite of indicators representing life expectancy, economic status, education and adult literacy. The most developed countries in the Region have an index nearly twice as great as the least developed. Real gross domestic product (GDP) per capita (adjusted for purchasing power) ranges from nearly US$ 30 000 in Australia and Japan to well under US$ 2000 in five countries, a ratio of about 15:1. Most of the Region’s population live in large countries with a real per capita GDP of under US$ 5000.

Wealthier countries have higher expenditures on health, both in absolute terms and in the percentage of their GDP spent on health. The relationship to national income holds true for total public health spending, but private spending varies widely and is high in countries such as Cambodia, China, India and Nepal, where public spending on health care is low. Total spending on health ranged from 12% of GDP in Cambodia to 2.2% in Myanmar. Total health expenditure per capita varies from US$ 2699 purchasing power parity (PPP) in Australia to barely US$ 30 in Myanmar.

Available data for the Region are not complete enough to show that inequitable distribution of income adversely affects health status. There are many exceptions in the Region, but the best health outcomes are in wealthy countries that have low wealth inequality, with outcomes among the poor almost universally far worse. In some environments, money does appear to buy health, or at least more health care. In six out of seven countries for which data was available, the wealthiest income quintile accessed a skilled birth attendant more often (up to five times more) than the poorest quintile, which also had infant and child mortality rates two to three times higher. In rural areas of Cambodia, for example, wealthier households spent two to three times as much per sickness episode as the poorest and had much better health indicators. Infant and child mortality among the poorest households was three times higher than for the wealthiest.\textsuperscript{36}

The health status gap between rich and poor must be addressed if countries are to achieve the Millennium Development Goals (MDGs) because child and maternal mortality are major health-related MDGs.

**Health-care financing in the Asia Pacific Region**

Countries in the Region rely on a mixture of health-care financing sources, including government budgets, social insurance, external funding, private health insurance and out-of-pocket (OOP) payments. The level of total health spending is relatively low compared with the Region’s GDP. In 2002, average total health expenditure was 5.8% of GDP, among the lowest of any Region,\textsuperscript{37} and half that of the Organisation for Economic Co-operation and Development (OECD) countries.
Of 48 countries and areas in the Asia Pacific Region, 18 spend less than the modest level\(^8\) of 5% of GDP on health. These 18 countries contain 651 million people, out of a total of 3.41 billion in the Region.\(^9\) Bangladesh, Indonesia, Myanmar and the Philippines are countries in the low-spending group with large populations and below-average health outcomes, while Malaysia, Singapore and Thailand also spend less than 5%, but have relatively good health outcomes. China and India spend 5.8% and 6.1% of GDP respectively. By comparison, Australia spent 9.5% of GDP on health in 2003.\(^{10}\)
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The Commission for Macroeconomics and Health estimates that to achieve relevant MDGs a minimum government expenditure of US$ 34 per person per year is required to provide an essential package of public health interventions. Governments currently spending less than US$ 34 include 14 of the 48 countries and areas in the Region, with a total population of 1.72 billion people, or 51.3% of the Region’s entire population. Ten are low-income countries (Bangladesh, Cambodia, India, the Lao People’s Democratic Republic, Mongolia, Myanmar, Nepal, Papua New Guinea, Solomon Islands and Viet Nam) and four are lower middle-income countries (Bhutan, Indonesia, the Philippines, and Sri Lanka).

Especially in countries where government expenditure on health is low, private OOP spending plays a large role. Cambodia has very high average total expenditure (12% of GDP) but poor health outcomes, in part because most of the total is from private spending on care that is often ineffective. The Lao People’s Democratic Republic has similar health outcomes as Cambodia but much lower average total expenditure due to low private spending.

Governments play a relatively small role in financing health care, with average total expenditure in such countries as Myanmar (10.6%), India (17.6%), Viet Nam (22.6%), Cambodia (24.5%), Nepal (26.7%), Bangladesh (28.6%), and Singapore (34.7%). Moreover, the share of government spending on health has been decreasing over the last decade in many countries. While there are many exceptions in the Region, low government expenditure relative to private OOP is more common in low-income countries, while high government percentages predominate in industrialized countries.

If it is understood that social insurance is funded through taxation (i.e. a progressive payroll tax), then low OOP spending in industrialized countries is associated with the prevalence of social insurance systems, and also with long experience of policies that promote equity of health care. The correspondingly high percentage of OOP payments in less developed and poorer countries reflects the fact that health care is a necessity that people are willing to pay for when it is not supplied by government, even when it creates great financial hardship and means foregoing other necessities.

While health sector reforms in many countries have not been in place long enough to demonstrate longitudinal changes, intercountry comparisons suggest that the most equitable health outcomes in the Region are in countries that have higher health expenditures, taxation-based financing and social health insurance.

Impact of out-of-pocket payments on households

The cost to individuals and households of accessing health services includes time and travel costs, in addition to any payments for consultation, procedures and medicines required at the time of service. Thus even “free” health care costs patients some money and loss of income. In the 1970s and 1980s, many developing countries became financially unable to provide free care. International financial institutions recommended that countries introduce user fees to share the costs of providing services to patients. Proponents believed that these fees would provide revenue to improve the quality of health services and expand coverage, and that user fees could reduce inappropriate demand for health services.

A few well-managed user fee projects have improved the quality of services utilized by the poor, and have reduced OOP expenditures by eliminating the unofficial payments often asked by poorly paid providers. However, most experience with user fees has been unsatisfactory. They create barriers to essential health services with public health implications, do not raise significant revenue and fail to protect the poor from unaffordable costs through exemptions. For example, in the Lao People’s
Democratic Republic, user charges have been actively implemented since 1995. The positive impact of a user charge for drugs is the capacity of health centres and district hospitals to ensure the availability of essential medicines throughout the year. However, there is no budget to subsidize the poor, and health-care providers have an incentive to overprescribe and charge for medicines in order to maintain services.\textsuperscript{49,50}

The major objections to user fees are on equity grounds, especially that the poor could not afford the fees and would not be able to access necessary health services when needed.\textsuperscript{51,52,53} The problems of identifying the poor for exemption from user fees have rarely been solved, and there is often no budget allocation to subsidize those who cannot pay. For this and other reasons of equity, WHO and others now recommend moving away from user charges to a prepayment method\textsuperscript{54} of financing health care.

Currently, direct out-of-pocket expenditure is a very large source of health-care financing in the Region, and in many countries it is the largest source.\textsuperscript{55} Out-of-pocket payment at the time of service can result in catastrophic payments when households spend a significant fraction of their net income on health care. Some households are pushed into poverty by borrowing and selling assets, and others give up needed care.

Data from 59 countries\textsuperscript{56} reveal a strong correlation between OOP and the incidence of catastrophic health expenditure. An increase of 1% in the proportion of total health expenditures from OOP is associated with an average increase of 2.2% in the proportion of households experiencing catastrophic payments. In the Asia Pacific Region, 10.5% of households in Viet Nam and 5% in Cambodia experienced catastrophic health-care events. Among industrialized countries, the Republic of Korea has the highest incidence, and most other developing countries have a lower incidence (Table 11.3).

<table>
<thead>
<tr>
<th>Table 11.3 Proportion of households with catastrophic health expenditure</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Selected Asia Pacific countries</strong></td>
</tr>
<tr>
<td>Viet Nam</td>
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<tr>
<td>Cambodia</td>
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<tr>
<td>Republic of Korea</td>
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<tr>
<td>Indonesia</td>
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<tr>
<td>Sri Lanka</td>
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<td>Bangladesh</td>
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<tr>
<td>Thailand</td>
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<tr>
<td>Philippines</td>
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</tbody>
</table>

* Defined here as the incidence of household payments for health services exceeding 40% of net income after subsistence needs have been met.


**Equity in financing health care**

The poor are low consumers of publicly-provided health care because they suffer from problems of information and access, including inability to pay costs of travel and treatment. A recent study\textsuperscript{57} of equity in health-care financing in nine Asian countries and three areas of China found that the poorest quintile (20% of households) accounted for only 5% to 10% of health-care visits. In terms of benefit incidence by the poor, Hong Kong (China) was the most pro-poor with 38.7% of public subsidy going to the lowest quintile. This refers to the relative consumption of public subsidies—for example, to operate facilities in poor areas, or to provide specific services and fee payments for exempted patients. In Malaysia, the poorest quintile also receive more than 20% of the total subsidy, and in Sri Lanka and Thailand the poorest quintile’s share of the total subsidy was close to 20%. This means that even
though the poor do not use their fair share of services, what they do use is fairly subsidized by public funds in those countries, i.e. the public subsidy is pro-poor.

In the other countries and provinces (except Bangladesh), the poorest 20% of individuals receive significantly less than 20% of the public health subsidy. The share going to the poorest 20% of individuals is lowest in Nepal (7%), followed by two Chinese provinces (8% and 10%). In these locations and in Bangladesh, India and Indonesia, the richest quintile receives more than 30% of the total subsidy.

The pro-rich distribution of public health-care subsidies in most developing countries is avoidable. Malaysia, Sri Lanka, Thailand and Viet Nam have achieved pro-poor public health spending by limiting user fees, or effectively protecting the poor from them, by building a wide geographic network of health facilities and ensuring that hospital care (which absorbs most spending) is sufficiently targeted at the poor.

When discussing equity, it is important to highlight issues of gender and the poorest of the poor. Women face more severe financial barriers to access to services relative to men. Though active in household-level economically productive activities, they have less bargaining power within the household and weaker access than men to control of household financial and non-financial resources. These factors add to limits placed on their physical mobility.

The poorest households are particularly challenged, often bearing the double burden of income poverty and sociocultural barriers. They also face language barriers, poor coverage of services in areas of ethnic minorities, a different and sometimes incompatible understanding of health, ill-health and healing practices, all of which hinder their use of modern services.

Key health financing issues

Key health issues requiring attention are shown in Figure 11.2, which summarizes the interrelated problems of financing health care in low-income countries, and provides a conceptual approach to address them by policy change and implementation. This section highlights three major challenges for health financing that especially impact the least developed countries and the low- and middle-income countries (LMICs) in the Region. It will be shown that these problems can be solved, to a large extent, by a transition to prepayment and social health insurance (SHI).

Inadequate and uneven public spending on health

There are two complementary causes of inadequate public spending on health: limited capacity of governments in low-income countries to generate revenue from the economy, and lack of political will to make greater investments in health.

The economies of developing countries rely on agriculture and informal sectors, with formal employment only in relatively small sections, such as the civil service. This results in a small tax base and limited capacity to generate revenue from the economy, with resultant limited government spending on health. In some countries, such as India and the Philippines, state and local authorities assume regional financial responsibility for health. When tax equalization between rich and poor states or provinces does not function well, the health care in poorer areas is relatively neglected due to inadequate resources.

There is low capacity in low-income countries to generate tax revenues for public spending: 8.86% (of GDP) in China, 8.11% in Bangladesh, 7.39% in Bhutan, 10.16% in India and 11.3% average for South Asia. Government spending overall in China has grown rapidly from 17.7% of GDP...
in 1995 to 27.4% in 2003, but is still well below the OECD average of 44.5%. Total government spending on health tends to be lower in provinces with a high proportion of rural poor, and less related to provincial GDP per capita. In contrast, government revenues in Australia and New Zealand were 26% and 37% of GDP respectively, and OECD countries derive taxes of over 30% of GDP. Low ratios of tax to GDP in poorer countries and small GDPs result in low levels of government revenue and low government investment in health (Table 11.2).

Political will and responsiveness to demands for better health care sometimes follow a period of rapid economic development and/or from threats of social instability. Development partners recommend that China increase spending on health, especially to benefit the poor. A recent joint United Nations Children’s Fund/Government of China report proposes that government health spending relative to GDP should be more than doubled, from 0.8% in 2004 to 2%. It argues that this level should be easy to achieve as government revenues are rapidly rising, and this has apparently met with political acceptance. In India, the coalition Government’s Common Minimum Programme calls for public spending for health to increase to at least 2%–3% of GDP over the next five years, from the current 0.9%.

Lack of effective social protection for the poor

Failure of social protection for the poor in low-income countries is caused by government fiscal constraints, ineffective means testing and low capacity to implement official exemption policies. Most governments
have good intentions regarding financial protection for the poor, but in practice limited fiscal flexibility due to competing public sectors leads to inadequate budget allocations for subsidizing health care for the poor. In most systems with user fees, government health services are required to exempt the poor and other disadvantaged groups. For reasons mentioned previously, exemptions are rarely implemented effectively. The following are examples of success and problems with social protection in the Region:

- The Malaysian health system has achieved remarkably high and equitable health status at relatively low cost. The system is fair in the sense that no one is excluded from receiving care on the basis of ability to pay. The government has also encouraged the expansion of private or privately managed care in several ways. The challenge is to ensure that the highly equitable nature of the system is maintained, even with such reforms.

- To attain equitable provision and use of health services requires active compensation, usually by a public subsidy, for the disadvantages the poor experience in access. An analysis of the Thai free health-care programme found that the scheme did not adequately subsidize the poor, and non-poor received a disproportionate subsidy which enabled many to enjoy free medical care.

- In Indonesia in 2005, the government implemented its commitment to increase access to health services by low-income groups with a programme subsidizing social health insurance contributions, known as Askeskin. This programme responds to the legal obligation of the government prescribed by the National Social Security Law. The programme is a significant step in social protection for the poor, covering approximately 60 million low-income families nationwide.

- To finance the (sponsored) component of the Philippine Health Insurance Corporation (PhilHealth) plan, by which the poor are given free care, annual premiums of US$ 21.8 per person are paid by both national/local governments. The programme has suffered from intermittent political interest, especially when politicians purchased insurance cards for the poor as part of their election campaigns but failed to provide continuing support, resulting in a substantial drop in membership a year after the election.

- Health Equity Funds pilot projects were undertaken in Cambodia as alternative financing mechanisms and were intended to remove financial barriers in accessing health services by the poor. They have been supported mainly by donors and nongovernmental agencies as a country-specific poverty reduction strategy contributing to the achievement of MDGs.

Although such poverty-focused programmes are useful, it is important to ensure their long-term sustainability by linking them to existing health financing arrangements, such as social health insurance, where feasible. Otherwise, isolated and fragmented social protection measures tend to have limited effect and problems in scaling up, unless they are linked to a comprehensive health financing package.

### Making more efficient use of limited resources

Whatever the mode of financing and level of spending on health, efficient use of public health resources is necessary to achieve better health outcomes. There is usually scope to improve utilization and efficiency in health systems so that more health benefit is gained from available resources. This requires optimal allocation between geographical areas, levels of services, and between inputs (e.g. between staff, drugs and other inputs). Increasing salaries to a “living wage” can have a significant positive impact on services, as seen in Cambodia when district services were contracted out. It requires good organization and management of services to improve technical efficiency by minimizing the cost of achieving a desired result, and often better use can be made of the private sector.
The fact that some countries attain better levels of service coverage with lower levels of expenditure is an important reminder that health system inefficiency is a critical and often neglected issue. India and Sri Lanka spend similar amounts (approximately US$ 30 per capita total health expenditure) but India’s health indicators are poor compared with Sri Lanka’s. Cambodia and Viet Nam spend similar amounts, but health outcomes are significantly better in Viet Nam. Disease prevention and health promotion are the most cost-effective kinds of health intervention, and most countries in the Asia Pacific Region have well-developed public health functions that promote overall efficiency of resource use.

**Possible reforms**

*Comprehensive review of health-care financing and National Health Accounts*

Without hard evidence on the current situation of health-care finance in the Region, it is not possible to identify or monitor the progress or drawbacks of health-care financing reforms. There is a need to thoroughly review resource levels, sources of financing and types of health care purchased. National Health Accounts (NHA) are a tool developed by the OECD and WHO for tracking health-care resources.

The NHA is now widely accepted as a standard measure for presenting and monitoring the situation of health-care financing in each country. It depicts how much was spent on which services by what type of providers, and gives a baseline for evaluating the impact of proposed or recently implemented health finance reforms.

To increase the usefulness of NHA for policy-makers, its use should be appropriate to the health priorities of each country. In countries in the Region where HIV/AIDS is an important problem, national HIV/AIDS accounts show how public and private resources are used for caring for HIV/AIDS patients and prevention programmes.

Comprehensive, reliable and accurate information on health-care financing is currently quite limited. Only 15 countries in the Region are using NHA and large gaps exist between countries in terms of data availability, comparability, data sources and collection methods, and use for policy formulation. Priority groups cannot be disaggregated from available data to better target policy, notably by income or by women within poor households.

Baseline information on the size of the population (and their dependants) engaged in formal and informal sector employment, and covered by different insurance and social protection schemes, is

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**Box 11.7: Resource allocation strategies in selected countries**

Several countries in the Region have strategies to reallocate resources in favour of those with less access to services, and in favour of interventions that have the most impact on health. Reducing funding for services used by better-off groups is not easy, and demand for funding hospitals is strong. Bangladesh increased the share of the health budget allocated to the Essential Services Package from 45% to over 65% in four years. In Thailand, there has been a shift in public funding and health workers in favour of rural services and provinces. In China, there is a policy to provide additional funding to the poorer provinces.

needed to monitor the effectiveness of social protection policies. This information can help reach consensus on health-financing policy options and strategies best suited for each country.

**Expanded use of prepayment schemes and social health insurance**

The most important goal of health financing in the Asia Pacific Region is for health systems to be funded by prepaid and equitable sources of finance, such as social health insurance (SHI) contributions and progressive general taxation. Such financing sources pool risks and provide health services according to need, rather than ability to pay. Governments in wealthier countries have SHI contributions available for investment in health, as well as more resources derived from general taxation.

Health insurance funds, by their nature, promote solidarity and support among the covered population by risk-pooling – the healthy supporting the sick, high-wage earners supporting low-wage counterparts. Since the health funds are a public entity, their policies can be formulated to support government health policy goals.

There is no single financing model that suits every country. Most developing countries in the Region use mixes of tax funding, SHI, community-based health insurance (CBHI) and voluntary private insurance. The level of health system development, social context and political support are key determinants of success in the transition from OOP financing to prepayment-based health financing. The Region has substantial experience with various models of SHI and tax-subsidized health insurance (Table 11.4).

Except for Japan, Taiwan (China), and the Republic of Korea, SHI now provides a minor part of health-care financing in the Region. China, the Lao People’s Democratic Republic, Mongolia, the Philippines, Thailand and Vietnam have introduced some form of SHI, but face the challenge of extending coverage to the informal sector (and for China, migrants), which includes most of the economically active population in these countries.

Voluntary private insurance largely covers the wealthier urban population who can afford premiums. In general, it forms a small part of the health insurance market in developing countries.

Community insurance and prepayment schemes have been tried in developing countries where relatively few people are employed in the formal sector and most work in farming, small trading or as self-employed craftsmen. Simple prepayment schemes are useful when it is difficult for people to pay for health services during some periods of the year, as is normal in agricultural communities. They are organized at a local level for ease of management and because people tend to have more confidence in local officials than those in a distant capital.

Community based health insurance has been piloted at three locations in the Lao People’s Democratic Republic since 2003. It is a voluntary scheme targeted at the informal sector and managed at the district level by a committee representing district administration, the local health facility and scheme members. Prepayment, risk-pooling and capitation payment are the major operational principles of CBHI in the Lao People’s Democratic Republic. Between 30% and 40% of households in each catchment area are covered. Members are protected against unpredictable health expenditure and have increased their utilization of health services. Other examples of successful community health insurance in the Region are the Self-Employed Women’s Association (SEWA) in India, Dana Sehat in Indonesia and small community financing schemes in the Philippines.
Table 11.4 Social health insurance and tax-funded health insurance in selected countries in the Asia Pacific Region

<table>
<thead>
<tr>
<th>Country/scheme</th>
<th>First Law/Decree</th>
<th>Year started</th>
<th>Current estimated coverage</th>
<th>Comments</th>
</tr>
</thead>
</table>
| Australia      | Medicare (c)     | 1972         | 1975                       | Universal  
Family as the unit of coverage.  
All citizens and legal residents are eligible.  
Family members covered but scheme excludes higher-salaried workers, and small enterprises.  
Very different arrangements by location, occupation and benefits. |
| China          | Urban worker basic insurance (c) | 1998         | 2000                       | 10% of total population  
Not yet law. Implementation in stages by region. Limited to urban workers only, mainly in public sector.  
Individual coverage in rural and urban schemes. Mainly covers catastrophic illness, low reimbursement rates. |
|                | Rural Cooperative Medical Systems (new) (v) | 2003         | 2003                       | 20% of total population  
Family as the unit of coverage.  
Very different arrangements by location, occupation and benefits. |
| India          | ESIS (c)         | 1948         | ...                        | 20% of total population  
Family members covered but scheme excludes higher-salaried workers, and small enterprises.  
Very different arrangements by location, occupation and benefits. |
|                | CGHS (o)         | 1954         | ...                        |                      |
|                | CBHI schemes (v) | 1950s        | ...                        |                      |
| Indonesia      | ASKEJ Jamsostek (c) | 1968         | 1968                       | 20% of total population  
Families covered.  
Small enterprises excluded. Dependents limited to two children.  
Very different schemes. |
|                | CBHI (v)         | 1991         | 1992                       |                      |
| Japan          | Workers Community Elderly | 1922         | 1927                       | Universal coverage (from 1961)  
Extension in stages by population group.  
Family coverage. |
| Republic of Korea | National scheme merging existing schemes (c) | 1976         | 1977                       | Universal coverage  
Gradual extensions to different occupational sectors, family coverage. |
| Lao PDR        | CSS (c)          | 1989         | 2000                       | 5% of total population  
All have family coverage.  
Reimbursement very limited by fund capacity.  
Still limited to capital city.  
Controlled extension of pilot projects. |
|                | SSO (c)          | 2000         | 2001                       |                      |
|                | CBHI (v)         | 2002         | 2002-2004                  |                      |
| Mongolia       | National scheme (c) (g) | 1993         | 1994                       | 78% of total population  
Initial universal coverage dropped, new systems will register self-employed. |
| The Philippines | PhilHealth (c) (g) | 1994         | 1995                       | 55% of total population  
PhilHealth National Health Insurance Program combines previous systems. |
| Singapore      | Medisave (c)     | 1983         | 1984                       | Universal coverage  
Three layers enable universal coverage for hospital-based benefits, with low cost public primary health care. |
|                | Medishield (o)   | 1989         | 1990                       |                      |
|                | Medifund (g)     | 1992         | 1993                       |                      |
| Taiwan (China) | NHI (c)          | 1995         | 97%                        |                      |
| Thailand       | SSS (c)          | 1990         | 1991                       | 10%  
Dependents not covered.  
Dependents covered in non-contributory scheme.  
Rest of the population, completing universal access. |
|                | CMBS (g)         | 2002         | 2001                       | 10%  
76% (Total 96%) |
|                | Universal Coverage initiative (g) | 2002         | 2001                       | 76% (Total 96%) |
| Viet Nam       | VSS (c)          | 1992         | 1992                       | 9.6%  
Dependents not covered.  
Predominantly students.  
Informal sector.  
Acceleration of government programme to subsidize health insurance for the low income populations, including family members. |
|                | VSS (v)          | 1993         | 1994                       | 6.5%  
Informal sector. |
|                | VSS-CBHI (v)     | 2002         | 2003                       | 0.4%  
Informal sector. |
|                | HCFP (Scheme for the poor) (g) | 2002         | 2003                       | 17.7%  
Total 34.2 % |

... Data not available

Note: (c)-compulsory, (v)-voluntary, (g)-government funded programme, (o)-individual can opt out.

CBHI – Community-based Health Insurance; CGHS – Central Government Health Scheme; CMBS – Civil Servants Medical Benefit Scheme; CSS – Civil Servant Scheme; ESIS – Employees’ State Insurance Scheme; HCFP – Health Care Fund for the Poor; NHI – National Health Insurance; SSO – Social Security Office; SSS – Social Security Scheme; VSS – Viet Nam Social Security System

Source: Social health insurance: selected case studies from Asia and the Pacific. New Delhi, WHO Regional Office for South-East Asia; Manila, WHO Regional Office for the Western Pacific, 2005.
Community financing is characterized by three principles: community cooperation, self-reliance, and prepayment. Community members pay a contribution in advance, either in cash or in kind, to a community-organized entity and receive a benefit package of health care. When members are in need, the community entity provides preventive care, primary health care and drugs. The schemes reduce the risk that a person or household will delay seeking treatment when illness occurs due to an inability to pay. Concerns are raised over the limited proportion of the population that can be covered by community-based health insurance (CBHI). Its voluntary nature leads to adverse selection and high treatment costs, problems of geographical access by the poor in remote areas and weak administrative capacity. These factors can adversely affect CBHI schemes, their long-term sustainability and ability to cover a significant proportion of the population.

In most SHI systems employers and employees share the contribution burden equally. Age and health risk do not determine the amount of the premium, nor is it necessarily adjusted for the number of dependents covered. Younger, healthier workers subsidize older, less healthy workers by using less health care, but they tend to pay less into the fund since premiums are a percentage of earnings. This system of funding has the great advantage that contributions can be easily collected and inflows are as reliable as the overall economy. Compulsory membership spreads costs and risks over a large population with predictable financial flows.

**Challenges in implementing prepayment and social health insurance**

**Cost containment**

Inefficiency and cost containment are two major concerns of SHI. Cost-effective purchasing and contracting services from public and private health-care providers have a long-term impact on financial sustainability of insurance schemes. Different provider payment methods send different signals to providers as incentives for conserving health-care resources (Table 11.5).

Fee-for-service provider payments can lead to overutilization of health resources and “provider-induced demand”, as seen in pharmaceutical use in China, Viet Nam and other countries. Insurance schemes with fee-for-service provider payment sometimes have introduced copayments by beneficiaries, both to reduce their costs and as a brake on demand. Copayments have been shown to reduce total health expenditures by reducing utilization, with little adverse effect on the health of insured members, who can also be effectively protected from catastrophic costs by spending ceilings.

Most schemes in the Region, such as SEWA in India, PhilHealth in the Philippines, Korean Health Insurance, Vietnam Health Insurance and China’s new Cooperative Medical Scheme (NCMS) all use a fee-for-service reimbursement model, with either deductibles, copayment and a ceiling on total reimbursement. As a result, user copayments account for almost half of total medical bills in the Philippines and the Republic of Korea.

Insurance agencies in these countries have a great opportunity, through their collective and bulk purchasing power, to improve resource use by introducing provider payment methods signalling better efficiency. Viet Nam is considering introducing capitation, the Philippines implemented capitation for the indigent programme, and Japan and the Republic of Korea are developing Diagnostic Related Group (DRG) systems. The Thai Social Health Insurance has used capitation for provider payments beneficiaries since 1991. The recent universal coverage scheme also applies capitation for ambulatory care and preventive health services, as well as global budgets, with a DRG system for hospitalization.
Any new insurance scheme should take into account proven, effective purchasing mechanisms, but experience in the Region shows that when changing from fee-for-service to a closed-ended payment mechanism, such as capitation, global budgets and DRG can be strongly resisted, especially by profit-oriented private providers. The Republic of Korea found that if reimbursement of providers is too low or narrow, they attempt to regain revenue from patients directly through “cost-shifting”, from insured services with regulated prices to providing uninsured services with unregulated prices. Other countries should draw lessons from these experiences.

**Achieving universal coverage**

WHO advocates universal coverage because it is equitable, promotes efficient use of resources and makes possible more rapid achievement of health objectives. The goal of universal coverage is to develop health systems that guarantee access to services of adequate quality, regardless of a person’s income, health or social status.

Near-universal coverage has been achieved by Australia, Brunei Darussalam, Hong Kong (China), Japan, Malaysia, New Zealand, the Republic of Korea, Singapore, Taiwan (China) and Thailand through a mixture of various health financing mechanisms. In the remaining countries in the Region, the transition from OOP financing to universal coverage could occur in stages as follows:

Stage 1. Absence of financial protection, with out-of-pocket spending for most health-care expenses.

Stage 2. An intermediate (temporary, transitional) stage of coverage, where a mix of cooperative and enterprise-based health insurance and other private insurance covers the informal sector, and specific employed groups are covered by new SHI-type plans, and limited tax-based financing for a safety net.

### Table 11.5 Provider payment methods and expected level of production

<table>
<thead>
<tr>
<th>Payment method</th>
<th>Over or under-production of health care</th>
<th>Main design remedy (alongside monitoring activities)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fee-for-service</td>
<td>Over</td>
<td>Combine with budgets, adjust fees when specified level exceeded.</td>
</tr>
<tr>
<td>Daily payment (for inpatient care)</td>
<td>Over</td>
<td>Reduce daily payment as length of stay increases.</td>
</tr>
<tr>
<td>Case payment (Diagnostic Related Group)</td>
<td>Over</td>
<td>Ensure diagnostic groups are clearly defined.</td>
</tr>
<tr>
<td>Capitation</td>
<td>Under</td>
<td>Integrated referral systems.</td>
</tr>
<tr>
<td>Budgets</td>
<td>Under</td>
<td>Strict budgets not based on historical allocations, integrated referral systems.</td>
</tr>
<tr>
<td>Salaries</td>
<td>Under</td>
<td>Ensure salaries are performance-related.</td>
</tr>
</tbody>
</table>

Stage 3. Universal coverage through SHI for most of the population, and a mix of other insurance and tax-based financing to cover the remainder.

Different groups require different strategies for increasing coverage:

• For the formal employment sector, an effective policy is to rapidly extend coverage of SHI to include small private sector firms. Non-working spouses and children of employees should be covered, possibly with premium adjustments for more dependants.

• For the poor, membership can be made available in the same SHI-type scheme as for the non-poor, with premiums paid from a fund established by some combination of central and local government and donor support. Full or partial payment of fees retrospectively is another option, as is done by Health Equity Funds in Cambodia (100% donor-funded at present). The decision whether to cover user fees or purchase health insurance cards for the poor is made at the fund management level in Viet Nam’s Health Care Fund for the Poor. Effective means testing is necessary to target poor households and avoid subsidizing the non-poor. Where means testing does not work well, tax-funded quality primary care services should be accessible by the poor with inpatient care costs financed through a safety-net system to reimburse hospitals.

• For the non-poor informal sector, a temporary strategy is to introduce voluntary CBHI to extend coverage in rural and urban areas. While acknowledging the weakness of voluntary insurance schemes, this approach builds health system capacity to work with insurance funds.

Based on different capacities of governments to pay for health care, two alternative strategies for financing health care for the informal sector are possible. The first approach is through social health insurance contributions, applying a flat premium rate or several bands. The costs and administrative complexity and difficulty of premium collection from the informal sector are disadvantages of this strategy.

A second approach to rapidly achieve universal coverage is to finance services for the informal sector through general tax funding, as is done in the Thai universal coverage scheme. Criticisms refer to the long-term capacity to fund the scheme, and to the unfair public subsidy to the non-poor in the informal sector. However, analysis of benefit incidence showed that public subsidies were pro-poor, as the top quintiles opt out and use private health care. The universal coverage scheme uses capitation contracts to help long-term cost containment, and projections of government expenditures show it is sustainable, even in a scenario of economic difficulties.

Women dominate the informal sector in the Asia Pacific Region. Insurance coverage of the informal sector, where most women are employed, is a key health financing challenge. Also, when formal sector health insurance coverage does not extend to family members, women are particularly disadvantaged since their share of formal sector labour force participation is lower than that of men. In some systems, elderly parents without personal income and residing in the same household as the insured workers are also covered as dependents. In some countries SHI does not cover the non-working spouse, child dependants and other family members.

If there are multiple schemes in use, it is most efficient to harmonize benefit packages and the level of public subsidies as well as payment of health-care providers. Under multiple systems, providers have shifted costs to gain higher reimbursements. A “single-payer” system prevents this from occurring.
Thailand has taken a piecemeal approach by gradually extending the coverage of SHI while developing a targeted health insurance scheme for the poor, older persons, disabled and children. By 2002, the entire population was covered by one of the three public insurance schemes: the Civil Servant Medical Benefit Scheme, SHI, and the Universal Coverage Scheme for the rest of population.

Within the mandate to achieve universal coverage by 2012, the Philippine’s PhilHealth is offering health insurance coverage to workers in the informal economy (some 20 million workers—most of the employed population). In 2003, PhilHealth launched the PhilHealth Organized Group Interface, an innovative approach to reach out to workers in the informal economy through microcredit cooperatives, which act as marketing and premium collection agents for health insurance.

Singapore has had the unique experience of financing health with medical savings accounts (MSAs). The system combines universal MSAs with supplementary programmes to protect the poor. Results have been impressive, with low costs, universal coverage, excellent health outcomes, and full consumer choice of providers and quality of care. A unique mix of features differentiates Singapore’s health financing system from most other government-funded or national health insurance programmes:

- By providing incentives to save and to avoid unnecessary use of medical services, MSAs encourage individuals to take responsibility for their own health-care needs as they belong to the individual, accumulate over a lifetime and can be used at the individual’s discretion.

- To address the risk of catastrophic illness, MSAs are complemented with catastrophic insurance—Medishield and ElderShield, which provide some basic insurance coverage for long-term care. Premiums are kept low because catastrophic events and payouts are relatively rare. People can pay their Medishield and ElderShield premiums from their MSAs.

- To assist the poor, the unemployed and older persons, the government provides targeted subsidies through Medifund and “top-ups” of Medisave and Medishield funds. It also provides direct subsidies to public hospitals to ensure that basic services are available and affordable for all.

Singapore’s advantages, such as a high national savings rate, high levels of education and income, and a relatively young population, have helped restrain demand for health care and allowed the build-up of Medisave balances, fund subsidies, and enabled copayments to fund a large share of spending.

A recent evaluation of the China New Cooperative Medical Scheme found that it increased overall outpatient and inpatient utilization by 20% to 30% with no significant effects on average OOP spending. For the poorest decile, the scheme increased average OOP spending, but reduced the incidence of catastrophic health spending, and had no impact on utilization.

**Conclusions**

In the Asia Pacific Region, the main health financing problems are scarcity of financial resources in low-income countries, inequitable distribution of public subsidies for health and incomplete protection against catastrophic health-care expenditures. Effective reforms should address three key issues: mobilizing more resources, using limited resources more efficiently and providing risk protection for the poor. A gradual approach for attaining universal coverage of prepaid health insurance has been outlined here, and the experience of several countries described. The use of National Health Accounts makes it possible to identify key issues in financing health care, followed up by a policy forum among stakeholders to serve as a platform to reach consensus on reform directions and possible action.


11.4 Essential medicines

Medicines are a critical component of health-care services and access to them is regarded by many as a human rights issue. Since the concept of essential drugs was introduced in the late 1970s, substantial improvements in access to medicines have been achieved in many parts of the world. Selected with due regard to public health relevance, evidence on efficacy and safety and comparative cost-effectiveness, essential medicines fulfil priority health-care needs. Access to essential medicines worldwide has become an important international agenda, as reflected in the United Nations Millennium Development Goals, but much of the Asia Pacific Region’s population is still denied regular access to these lifesaving drugs.

Improving access to essential medicines: an unfinished agenda

Major causes of morbidity and mortality in many developing countries, such as malaria, tuberculosis, pneumonia and acute diarrhoea, can be treated with a relatively short subset from the national essential medicines list. But essential medicines save lives and improve health only if they are widely available and affordable, of good quality and properly utilized. Poor access and their irrational use remain critical problems in many countries and areas in the Region, but efforts to correct this have been intensified in recent years. The Regional Strategy for Improving Access to Essential Medicines 2005–2010 was developed through a consultative process with experts from WHO, regional countries and areas, and partner organizations. The strategy identifies issues and challenges and defines strategies and actions in eight main technical areas as follows:

- Rational selection
- Rational use
- Affordable prices
- Access to medicines, trade globalization and the Trade-Related Aspects of Intellectual Property Rights (TRIPS) agreement
- Sustainable financing
- Supply and management systems
- Quality: substandard and counterfeit products
- Monitoring and evaluation

These elements are derived from the WHO Medicines Strategy and have been adopted by many countries and areas in the Region. The strategy requires the implementation of national medicines policies and existing tools and guidelines, such as essential medicines lists, treatment guidelines and formularies. How it is implemented depends on specific health-care systems, taking into account national priorities, resources and the legislative and administrative environment. Most countries and areas in the Region have developed their own national workplans and have taken at least some of the recommended actions.

The regional strategy complements the Global WHO Medicines Strategy which guides work in pharmaceuticals and focuses on:

- developing, implementing and monitoring national medicines policies based on the essential medicines concept;
• access, including equitable financing, affordability, and delivery of essential medicines;
• quality and safety of medicines by strengthening regulatory and quality assurance standards;
• rational use, promoting therapeutically sound and cost-effective use of medicines by health workers and consumers.

National medicines policies: development, implementation, monitoring and evaluation

Essential medicines offer a simple and cost-effective answer to many health problems. However, in most developing countries there are still constraints to accessibility and affordability of medicines; problems related to quality, including proliferation of substandard, counterfeit and fake products; and improper usage by providers and consumers. The potential benefits of essential medicines are jeopardized by these problems.

Multiple and complex factors underlie these problems, which require systematic and comprehensive efforts to resolve. A national medicines policy serves as a framework to guide a multi-pronged programme of action. It defines goals and objectives, and provides direction and guidance for strategies and actions in the pharmaceutical sector. National medicines policies are integral to national health policies. Some two thirds of countries and areas in the Asia Pacific Region have developed national medicines policies and are implementing at least some elements of them.

Despite existing national medicine policies, access and affordability, quality and irrational use remain widespread problems in the Region, partly because it is easier to articulate a complex policy than implement it. Furthermore, the health sector is sometimes wrongly perceived by governments as contributing less to national development than the pharmaceutical industry. When conflict arises between the concept of medicines as an economic product, as opposed to a tool for health, the latter often loses out.

While all countries and areas in the Region have leaders committed to improving this situation, the efforts and resources applied to implementing policies are usually insufficient. National medicines policy is often seen as a matter for either the pharmaceutical or health sector, instead of a unified intersectoral issue. It is vital to identify strengths and weaknesses when governments implement policy, but the process is compromised because actions taken to achieve goals are infrequently monitored and outcomes rarely evaluated.

Selection

Endorsed by over 120 countries and called the most important public health concept in medicines, the essential medicines concept celebrated its 30th anniversary in 2007. The method for selecting medicines for the WHO Model Essential Medicines List has been refined over the years. Recent modifications to the selection criteria, as exemplified by inclusion of expensive antiretroviral drugs because of their cost-effectiveness, provide a model list more finely attuned to public health requirements.

Countries can develop their national lists by adapting the selections on the model list to their own particular needs. Judging by the prevalence of national essential medicines lists in the Asia Pacific Region, this has been an extremely successful initiative, but the modified criteria for selection are not yet widely used by countries and areas in the Asia Pacific Region.
The national essential medicines lists have disseminated the essential medicines concept in a symbolic way but their effect on improving public health has been far less than anticipated. The concept and the list are widely accepted by health decision-makers; however, not all public sectors follow them at the implementation level, and since the private sector is large (larger than even the public sector in many countries), the overall effect of essential medicines on the totality of health care is limited. Individual private providers can prescribe and sell medicines ranging from those that are effective to others of doubtful therapeutic efficacy. The vagaries of the medicines market and the effect of promotion are well-known antagonists of rational and appropriate use of medicines.

Deficient support for drug information has been a serious obstacle. The use of essential medicines is as important as the selection, meaning that there should be appropriate, unbiased, independent information available for using carefully selected products. Few countries in the Region provide funding in their medicines budget to produce information that could have a great impact on rational use of the medicines supplied—an example of concentrating on the “hardware” and ignoring the “software”.

While not using essential medicines lists as such in public policy, most developed countries in the Region have strong regulations and control governing the choice and price of medicines available to their citizens. Australia, for example, has regulations and reimbursement policies that implement the principles of the essential medicines concept.

**Box 11.8: The Australian Pharmaceutical Benefit Scheme**

The formulary committee of the Australian Pharmaceutical Benefit Scheme reviews and decides whether any particular medicine can be listed for reimbursement in the scheme. The review is based mostly on evidence of cost-effectiveness and this has resulted in enormous savings to the health care system. Prior to listing in the scheme, a medicine must be assessed by the Australian Drug Evaluation Committee. If this committee recommends that the medicine should be available for sale in Australia, a sponsor, usually a drug manufacturer, applies to the Pharmaceutical Benefits Advisory Committee for listing in the scheme.


**Rational use: improving quality care and access**

Use of medicines in ways that are medically ineffective, unsafe or economically inefficient jeopardizes the quality of health care and wastes public and private resources for health. Access to useful essential medicines is reduced when limited resources are wasted. Inappropriate use and overuse of antimicrobials, overuse and unsafe use of injectable products, and multiple prescribing are widespread problems in both developed and developing countries and have many public health consequences, including the emergence of drug-resistant strains.

In many parts of the Region, an increasing incidence of antimicrobial resistance is having dramatic consequences on the outcome and the cost of treatment of major infectious diseases. It is largely the result of the irrational use and uncontrolled distribution of antimicrobial products. Discovery of new antimicrobials against resistant strains may not keep up with the rapid emergence of resistance to existing antimicrobials, and new medicines are more costly for patients and health systems. Appropriate usage and distribution can help contain antimicrobial resistance and preserve the effectiveness of currently available medicines.
Irrational medicines use by providers and consumers is common in many parts of the world, including the Asia Pacific Region. A lack of knowledge and information on medicines among providers and consumers, excessive medicine promotion and misinformation, poor monitoring and supervision of medicine distribution and usage, and insufficient financing mechanisms means poor purchasing decisions are made by ill-informed consumers. This is largely due to the failure of health systems to make continuing medical education a priority and to keep registration updated.

The full potential of regulatory measures has not been realized. Inclusion of the generic name of a drug in labelling and packaging is required by law in most countries and is often adhered to by the pharmaceutical companies. This should enable the consumer to identify the same drug among the myriad brand names and choose the least expensive formulation, but this is not stressed in information to patients. Information about the benefits and need for promoting generic prescriptions is also not communicated to pharmacists, who play a key role in providing medicines to customers.

Effective interventions to deal with this public health problem are known, and include the following components:

- A multidisciplinary national body to coordinate medicines use policies
- Clinical guidelines
- National essential medicines list and formulary list
- Drugs and therapeutics committees in hospitals and at regional levels (province or district)
- Problem-based pharmacotherapy training in undergraduate education of health workers
- In-service continuing education
- Supervision and monitoring or audit system of medicines usage
- Independent medicines information
- Consumer education and empowerment
- Incentives and disincentives for rational and irrational use of medicines
- Enforcement of regulations
- Sufficient public expenditures on essential medicines

However, the irrational use of medicines is a complex issue and involves many participants. Continuous interventions and monitoring should be integrated into an ongoing health system development process, and include training, managerial and regulatory changes, and incentives for rational use practices. Operational research is useful in identifying drug use problems and specific interventions, and testing their effectiveness prior to wide implementation.

In Cambodia, integrated monitoring and supervision of medicine supply, management and rational use has been implemented with a positive impact in public health facilities. In Cambodia, Indonesia and the Lao People’s Democratic Republic, a focused rational use intervention involving monitoring, training and planning has been implemented in health facilities. This small group training intervention, using a problem-solving approach, is implemented in health facilities with periodic meetings and indicators for measuring improvement.

Consumer education and empowerment are necessary for promoting rational use of medicines. Information about medicines should be available to consumers and be consistent with adequate labelling and proper instructions for over-the-counter medicines, regulation and monitoring of advertisements, and targeted public education campaigns. Many forms of consumer education have
been used in the Region utilizing mass media. An innovative approach by a community grassroots organization, employing small group discussions, active learning, and problem-solving product information leaflets, has been effective in improving the rational use of over-the-counter medicines in Indonesia.85

**Affordable prices**

When medicines are physically available, affordable prices make it possible for many people to have access to them. In some countries, prices of essential medicines are high in relation to local purchasing power. The market mechanism should lower the prices of off-patent medicines through competition, but it often does not work as it should. Information is power in the marketplace, and for medicines, sellers invariably have better information than consumers. Generic prescribing and dispensing are not widely practiced, with branded and patented products dominating many market segments. Where quality-assured generic drugs exist in the market, a generics substitution policy should be instituted that encourages or requires generic substitution of the lowest-priced generic product when a brand name product is prescribed. This is the practice in most states of the United States of America.

The problem of medicine affordability is complex and many factors play interlinked roles. For example, the absence of effective drug quality regulation weakens confidence in generics and encourages prescribers and consumers to use brand names. A lack of public financing (such as social insurance), asymmetrical knowledge and reliance on out-of-pocket payments reduce the power of consumers. Some countries in the Region are proactively trying to regulate medicine prices, but supply chain mark-ups are not transparent and evasions are possible due to “transfer pricing” by manufacturers.

Regulation of medicine prices in the private sector varies widely across the Region, ranging from no regulation to set prices for essential medicines. Depending on the amount of competition, price controls may or may not be effective in reducing medicine prices, when compared to a free market. Commercial considerations are not satisfactory grounds for regulating pricing as they may provide perverse distribution incentives. For example, a drug that is expensive to produce but has little health relevance might attract manufacturers because it is more profitable than an essential medicine that is cheaper to produce.

**Access, trade globalization, and the World Trade Organization Agreement on Trade-Related Aspects of Intellectual Property Rights**

National patent laws give patented and branded products market exclusivity, which is sometimes effectively monopoly power. An option for many developing countries is to allow cheaper equivalents of those medicines to be produced under the internationally agreed “TRIPS-compliant safeguards”. The World Trade Organization (WTO) Agreement on Trade-Related Aspects of Intellectual Property Rights (TRIPS) makes it obligatory for member countries to apply uniform standards for patent protection for new medicines. This makes production, distribution and sales of generic versions of patented medicines in countries and areas where patent protection exists only possible under certain safeguard provisions which include the following:

1. Least developed countries can delay implementation of the TRIPS agreement for pharmaceuticals until January 2016. Production and supply of generic equivalent of patented medicines are still possible if there is no patent legislation in place;
(2) Price negotiation of patented medicines with the patent holder producers, for countries wanting to purchase those medicines, not using compulsory licensing; 

(3) Negotiation of voluntary licenses between local manufacturers and patent holders for the production of generic equivalents of the patented medicines; 

(4) Local production of generic equivalents of patented medicines for countries with manufacturing capacity, through granting compulsory licenses to the local producer; 

(5) Importation of generic equivalent of patented medicines for countries without manufacturing capacity, through restricted export from countries producing generic equivalents of patented medicines under compulsory licensing (decision of WTO August 2003); 

(6) If a significant price difference on identical products exists between the country and others, parallel importation is an option allowing a product marketed in other countries to be purchased and imported at a price cheaper than the domestic market.

Member countries should incorporate these safeguards into national patent legislation if they want to use them to make medicines more accessible.

As WTO member countries move to full implementation of the TRIPS agreement, it is probable that the supply of generic equivalents of some patented but essential products will have a strong impact. India, currently the major manufacturer and supplier of generic antiretroviral medicines, amended its patent laws to comply with the WTO TRIPS agreement as of January 2005.

Most countries having TRIPS-compliant safeguard provisions in their laws have not yet taken full advantage of the flexibility in TRIPS. The Government of Malaysia in 2003 granted a “government use” license to a domestic company to import generic equivalents of patented products for public non-commercial use, including antiretroviral medicines from India. This was the first successful example of compulsory licensing by an Asia Pacific Region country to make prices of medicines more affordable. The decision was taken after price negotiation could not achieve a satisfactory outcome. Indonesia and Thailand have used the same mechanism to make certain antiretroviral medicines more affordable and accessible.

**Options for fair financing of medicines**

Ideally, medicines would be available on the basis of need rather than ability to pay. The essential medicines list makes medicines more affordable, but equitable financing is crucial for attaining this fundamental requirement to achieve the right to health care. Very few countries in the Region have achieved equity, and most that have are from the developed world.

Most countries and areas in the Region recognize the principle of equity in access to medicines and many have attempted, through various means, to ensure the principle in their health-care system. But health care is a demand that can never be satisfied. Ever-increasing costs in the developed world, despite a healthier population, demonstrate this. For this reason, regulation is needed to maintain the financial viability of a health-care system and within it, the cost of medicines. Some countries, such as Bhutan and Sri Lanka, have attempted to provide medicines at their public sector facilities free of charge. This approach can have significant impacts on health, but at some point the increasing financial burden may become impossible for governments to bear.
In countries where there is little control on prescribing in the public sector, shortages of essential medicines inevitably result because funding is limited. Some countries have adopted measures requiring copayments from patients. The amount of copayment can be a serious barrier to access if it is high, but if it is too low it will not recover enough to assure drug supplies after the costs of administration are subtracted. These systems can also introduce incentives for over-prescribing if the copayments are based on the cost of drugs.

Box 11.9: The Bamako Initiative in the Asia Pacific Region

Originating in Africa in 1987, the Bamako Initiative (BI) was a model for some Asian countries including the Lao People’s Democratic Republic, which established community-level revolving drug funds to mobilize resources for primary health care. In addition, BI-type revolving drug funds have been implemented in some districts in Cambodia, in Myanmar, at the barangay level in parts of the Philippines, and in Viet Nam. Early critics of BI predicted that health systems could become dependent on revenues from the sale of drugs, creating a tendency to irrational drug use. This is believed to be true in the Lao People’s Democratic Republic.


Most models that enable fair health financing are based on universal social insurance in which the state is the regulator and promoter and sometimes the main health provider. Few universal insurance schemes exist in the Region’s developing countries, but there is coverage in several countries of indigents, school-age children, war veterans and some other identifiable groups. Some countries with existing insurance schemes for government employees are considering ways to extend membership to informally employed workers and farmers. Even in these situations, some copayments may be required, so systems must be underpinned with measures that ensure cost-effective prescribing.

Whatever systems of financing are used, the private sector cannot be ignored, which in the Asia Pacific Region is a significant provider of health care, especially of medicines. In an ideal world, the health benefits of drugs would serve as the basis for pricing, but now faith is placed in the expansion of insurance systems to control costs. However, even insurance systems do not consistently eliminate perverse incentives. In Japan, for example, as reimbursements to hospitals for consultations and procedures have been reduced, inpatient drug charges have filled a gap to become a major source of hospital revenues. For this reason some countries have tried to break the linkages between prescribing and ownership of pharmacies by hospitals and doctors.

Local production

Promoting and sustaining local capacity for manufacturing quality pharmaceuticals can improve reliable access to medicines. Many countries in the Region lack the capacity to meet their pharmaceutical requirements with local production. Some least developed countries rely totally on imports, others on both national production and importation, but there is great need to increase local manufacturing capacity to meet national requirements. Some countries, including Indonesia, Sri Lanka, Thailand and Viet Nam, have established state-owned drug manufacturing units and concessions to increase production of essential medicines.
Local production of essential medicines in the Region is supported by WHO through technical assistance for good manufacturing practice (GMP), advising on the use of TRIPS-compliant safeguards to produce generic versions of patented medicines and support to regulatory authorities to ensure the quality of local production. The WHO prequalification scheme (which included some manufacturers of generic antiretroviral medicines) helps countries choose suppliers and products of good quality, safety, and efficacy.

Incentives for promoting local production of quality medicines was the subject of a recent Asia Pacific Region meeting, which included participants from regulatory, trade, patent, research and development, production, and insurance sectors. Also discussed were areas of possible cooperation in production of antiretroviral medicines and other essential medicines in the Region.

**Ensuring supplies and good management**

Problems of access and availability of medicines in developing countries in the Region are very often due to weaknesses in supply management systems. Effective drug supply management ensures that the right medicines are available at the right time and in correct quantities, at reasonable prices, and with recognized standards of quality. The best national pharmaceutical systems efficiently select, procure, and manage storage and distribution of medicines and other supplies. Common challenges in the supply of medicines are:

- Public sector planning, monitoring and management information systems for procurement are inadequate, often due to insufficient trained staff.
- Wastage of stocks occurs at different levels due to inadequate stock management.
- Procurement is not always based on essential medicines, and needs are projected inaccurately.
- Poor information on prices and sources of good quality medicines leads to higher cost and lower quality products.
- In some countries decentralization of the procurement system reduces savings from bulk procurement, resulting in higher prices and/or restricted supply. Different programmes and organizations use various methods and standards for procurement of essential medicines and do not coordinate with one another.
- Transportation and distribution of medicines in geographically difficult and remote areas can result in long lead times and deterioration of quality.

In the Asia Pacific Region, good procurement practices are supported by a WHO/Australian Agency for International Development (AusAID) collaborative project to promote good governance and ethical practices in the pharmaceutical sector. WHO also advises on monitoring and supervision of medicines supply management and on rational use in health facilities. In Cambodia, integrated monitoring and supervision of drug management and usage in health facilities has been sustained and implemented over the years with support from WHO and other donors.

**Quality assurance and regulation**

Active monitoring is necessary to ensure that pharmaceutical products are fit for their intended use, comply with the requirements of their marketing authorization and do not expose consumers to risks. Adverse clinical events, suggesting problems with product quality, safety and efficacy, should be reported and steps taken to identify and correct problems.
Unfortunately non-compliance with international standards such as GMP results in substandard drugs being manufactured, distributed and used. Regulatory authorities in many countries do not have sufficient capacity to thoroughly inspect establishments and register medicines, and breaches that are found are sometimes not followed up by action. Legislation on registration, inspection of establishments, GMP licensing, regulation of pharmacies and advertisement and promotion of drugs, are still lacking or incomplete, or are poorly implemented, especially in small island countries. Medicine regulatory authorities are often lacking in resources, regulatory functions are distributed among different organizations and linkages between them are weak. WHO provides support to several countries to strengthen drug regulatory systems and legislation, improve national pharmaceutical quality control laboratories and conduct training in GMP.

**Combating counterfeit medicines: the silent killer**

There are counterfeit medicines circulating in the Asia Pacific Region which contain insufficient quantities of active ingredients or none at all, and are sometimes contaminated with toxic substances, thus jeopardizing treatment and public health outcomes, and wasting money. The production and sale of these dangerous products have recently increased sharply in the Region, and include medicines for such life-threatening illnesses as malaria, and chronic diseases such as diabetes and cardiovascular diseases.

A counterfeit form of artesunate, a first-line life-saving antimalarial drug, was found circulating in Mekong countries in the late 1990s. Surveys conducted in 1999 and 2000 showed that approximately 38% of artesunate products in shops were fake, a figure that rose to 53% by 2004.

Absent or weak national medicines regulatory authority, poor cooperation among various stakeholders, inadequate enforcement of laws and regulations, and a lack of public awareness all contributed to the proliferation of counterfeit medicines and the number of unlicensed drug outlets. Intensified surveillance of counterfeit medicines in Mongolia and the Philippines in 2005 revealed that the increase in counterfeit medicines not only involved unlicensed outlets but also licensed drug sellers.

In 1988 WHO was requested by Member States to initiate a programme for the prevention and detection of production, distribution and smuggling of counterfeit medicines. The World Health Assembly resolved in 1994 to support national efforts to combat counterfeit medicines. Subsequent joint WHO projects on counterfeit drugs include collaborative projects with AusAID on Combating Counterfeit Medicines in Greater Mekong countries and the Rapid Alert System (RAS). The latter was necessary because counterfeit medicines are often distributed across national boundaries, and there was an absence of effective mechanisms for alerting other countries when they are detected. The objectives of the Rapid Alert System are to:

1. Encourage government, nongovernmental and international organizations to report through this system when counterfeit medicine is detected;
2. Minimize adverse impacts of counterfeit medicine through rapid dissemination of information and timely action by relevant authorities;
3. Distribute alert notifications in a timely manner;
4. Advocate intensified surveillance of counterfeit medicine in high-risk areas and premises, such as markets, rural areas and unlicensed outlets;
5. Stimulate rapid follow-up action on the reported cases through interactive communication;
6. Encourage public warnings about counterfeit medicines by authorities;
(7) Monitor actions taken by countries, including investigation and removal of counterfeit medicines from the distribution system.

In 2006, WHO launched the International Medical Products Anti-Counterfeiting Task Force. Primarily aimed at building coordinated international collaboration and networks for combating counterfeit medicines, the task force included major worldwide anti-counterfeiting partners. The task force has working groups on legislative and regulatory infrastructure, implementation, enforcement, technology and communication.

**Promoting ethical practices and good governance**

The pharmaceutical sector is susceptible to unethical practices other than counterfeiting, such as conflicts of interest and non-transparency in registration, selection and procurement. Poorly defined and documented processes and limited institutional checks can compromise regulatory systems. The enormous size of the market (about US$ 500 billion in audited sales in 2006), and economic interests contribute to vulnerability in national pharmaceutical systems.

Strengthening regulatory systems and improving efficiency of registration, selection and procurement can inhibit unethical practices, and is a step toward the goal of better access to essential medicines. Promotion of ethical practices and promoting transparency and good governance also strengthen the technical aspect of the pharmaceutical system.

In the Asia Pacific Region, a project by WHO and partners promotes ethical practices in registration, selection and procurement. The project involves the assessment of registration, selection and procurement practices using a standardized methodology, and the development of an ethical framework and its advocacy and implementation. Initiated in the Lao People’s Democratic Republic, Malaysia, the Philippines and Thailand, the project was later expanded to Cambodia, Mongolia and Papua New Guinea. The objective of the initiative is to minimize the vulnerability of pharmaceutical sectors to unethical practices and corruption.

Equitable access to essential medicines is unfinished business for national governments and the international community. The effort, will and collaboration of international organizations, governments, industry and professional organizations are vital to solving the problems of pharmaceutical equity and resources.

**11.5 Traditional medicines**

Traditional medicine comprises all non-Western or modern medical (allopathic) knowledge, skills and practices used in the maintenance of health and in the prevention, diagnosis, improvement or treatment of physical and mental illnesses. These systems are based on theories, beliefs and experiences indigenous to different cultures, whether or not they are explicable in modern “scientific” terms. The terms complementary, alternative and non-conventional medicine are sometimes used interchangeably with traditional medicine.

Despite a limited base of scientific information, millions of people consider traditional medicine effective for a wide range of infirmities, from self-limiting to life-threatening illnesses. It is used for both acute and chronic diseases, and to improve the quality of life, especially of older persons and those suffering from pain and chronic conditions.

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[^1]: Approximately 90% of the US$ 500 billion is in industrialized countries, leaving “only” US$ 50 billion in sales to the developing world.
Traditional medicine has had significant impact on modern medicine and pharmaceuticals. The traditional herbal remedy *Artemisia annua*, used in China for about 2000 years, is effective against drug-resistant malaria and is now the basis of life-saving, first-line treatment for severe malaria in several countries in the Asia Pacific Region. In addition, some 25% of modern medicines are based on substances in plants originally used traditionally including digitalis, morphine, quinine, vincristine and shikimic acid, which is used for making oseltamivir, a medicine for avian influenza treatment.

Acupuncture has been proven effective in relieving post-operative and dental pain, and for nausea resulting from chemotherapy and during pregnancy, with very few unwanted side effects. It is also useful for alleviating anxiety, panic disorders and insomnia. Yoga can reduce asthmatic attacks, and Tai Chi techniques can help older persons reduce their fear of falls.

**Traditional medicines in the Asia Pacific Region**

The major systems of medicine practised in the Region are listed in Table 11.6.

<table>
<thead>
<tr>
<th>Country</th>
<th>Principal Traditional Medicine/Complementary Medicine Systems</th>
</tr>
</thead>
<tbody>
<tr>
<td>Australia</td>
<td>Traditional Chinese Medicine, Chiropractic</td>
</tr>
<tr>
<td>Bangladesh</td>
<td>Unani, Ayurveda</td>
</tr>
<tr>
<td>Bhutan</td>
<td>Traditional Bhutanese Medicine</td>
</tr>
<tr>
<td>Cambodia</td>
<td>Traditional Cambodian Medicine</td>
</tr>
<tr>
<td>China</td>
<td>Traditional Chinese Medicine</td>
</tr>
<tr>
<td>DPR Korea</td>
<td>Koryo Medicine</td>
</tr>
<tr>
<td>India</td>
<td>AYUSH (Ayurveda, Yoga &amp; Naturopathy, Unani, Siddha and Homeopathy) and traditional Tibetan Medicine</td>
</tr>
<tr>
<td>Indonesia</td>
<td>Jamu</td>
</tr>
<tr>
<td>Japan</td>
<td>Kampo Medicine</td>
</tr>
<tr>
<td>Lao PDR</td>
<td>Traditional Lao Medicine</td>
</tr>
<tr>
<td>Malaysia</td>
<td>Traditional Chinese Medicine, Ayurveda, Traditional Malay Medicine, Complementary Medicine, Homeopathy</td>
</tr>
<tr>
<td>Maldives</td>
<td>Dhivehibeys</td>
</tr>
<tr>
<td>Mongolia</td>
<td>Traditional Mongolian Medicine</td>
</tr>
<tr>
<td>Myanmar</td>
<td>Traditional Myanmar Medicine</td>
</tr>
<tr>
<td>Nepal</td>
<td>Ayurveda</td>
</tr>
<tr>
<td>New Zealand</td>
<td>Rongoa Maori Medicine, Traditional Chinese Medicine</td>
</tr>
<tr>
<td>Republic of Korea</td>
<td>Traditional Korean Medicine</td>
</tr>
<tr>
<td>Singapore</td>
<td>Traditional Chinese Medicine, Ayurveda</td>
</tr>
<tr>
<td>Sri Lanka</td>
<td>Sri Lanka Indigenous Medicine</td>
</tr>
<tr>
<td>Thailand</td>
<td>Traditional Thai Medicine</td>
</tr>
<tr>
<td>Viet Nam</td>
<td>Traditional Vietnamese Medicine</td>
</tr>
</tbody>
</table>

Source: WHO Regional Offices for South-East Asia and the Western Pacific
Traditional or alternate systems are widely accepted in developed as well as developing countries, by people in both urban and rural areas. In urban communities, the use of traditional medicine is mainly by choice, while in rural communities it is by tradition, belief and social acceptance. Furthermore, traditional practitioners and remedies are readily available, accessible and affordable even to those in areas where the modern system of Western medicine has a limited presence. Payment is often based on the barter system, which is convenient and preferable to people in rural areas.

Traditional medicine is part of many national health systems in the Region, provided in parallel with modern medicine in both public and private sectors. Even though modern medicine is the foundation of most health care in the Region, traditional systems are very much in use and are a major element of health care in many communities. Some countries have extensive networks of traditional medicine services, with both inpatient and outpatient facilities and support for national traditional medicine programmes.

Expenditure on traditional medicine is growing rapidly. Due to its popularity and relatively low costs, some countries promote traditional medicine in order to increase access to health care. These countries are investing in policy formulation, research, standardization, regulation and quality control, human resources development, and the integration of traditional medicine services into national health systems. In Malaysia, an estimated US$ 500 million is spent annually on traditional health care, compared to about US$ 300 million on modern medicine. In Australia, annual complementary and alternative medicine expenditure is estimated at US$ 80 million.

As the economic and trade value of the knowledge of traditional medicine and medicinal plants increases, concerns have arisen that the benefits should be fairly and equitably shared. Developing appropriate policies for traditional medicine intellectual property rights has proven difficult. Patent rights for traditional medicine products and knowledge could encourage the promotion and development of traditional medicine, but could also impinge on access to health care by the poor.

Protecting traditional medicine knowledge from exploitation

Some countries have adopted measures protecting traditional medicine and knowledge. Thailand has a comprehensive regime for the protection and promotion of traditional medicine through the Thai Traditional Medicine Intelligence Act. In order to protect its traditional knowledge from patenting, India has developed the Traditional Knowledge Digital Library that contains traditional knowledge on Ayurveda and Unani. It contains 65,000 Ayurvedic formulations and 70,000 for Unani in English, French, German, Japanese and Spanish, totalling more than 30 million pages.

Demand for herbal medicines has grown tremendously in recent years, with annual sales estimated to be more than US$ 60 billion, and annual growth of 5%–15%. In some countries, a large percentage of traditional medicinal plants is being lost due to deforestation and over-exploitation for export earnings. India, Myanmar and the Republic of Korea have taken steps to reverse this trend by establishing and promoting new plantations and gardens, and creating legislation for controlling the export of medicinal plants and products of herbal origin. The problems of conserving the biodiversity of medicinal plants have been discussed internationally, but there is still no consensus on the best way of protecting traditional knowledge.

WHO has assisted countries of the Asia Pacific Region in four main areas of traditional medicine development.
(1) **Policy.** Integrating traditional medicine with national health systems by developing and implementing national traditional medicine policies and programmes.

(2) **Safety, efficacy and quality.** Promoting safety, efficacy and quality of traditional medicine by expanding the knowledge base for traditional medicine and by improving regulatory and quality assurance standards.

(3) **Access.** Increasing the availability and affordability of traditional medicine, with an emphasis on access for underserved populations.

(4) **Rational use.** Promoting therapeutically sound use of appropriate traditional medicine by providers and consumers.

### Progress in national activities

Several countries in the Asia Pacific Region have established national policies and are currently implementing activities in traditional and complementary medicine.\(^{93,94}\)

**Australia**

The Australian Government has given grants to traditional medicine practitioner associations to assist them in developing accreditation standards and regulatory schemes, and tax incentives to encourage participation. The Government of the state of Victoria passed legislation and is implementing a regulatory system for practitioners of traditional Chinese medicine (TCM). Australia also set up a Queen’s Commission to look into chiropractic activities and, subsequent to a favourable report, legalized independent chiropractic practice.

**Bangladesh**

The national Drug Regulatory Authority has been strengthened through the training of drug administration officers in the quality control of traditional and homeopathic medicines.

**Bhutan**

The training capacity of the Institute of Traditional Medicine has been strengthened. Traditional doctors and health workers are given refresher training to improve traditional medical service delivery.

**China**

The State Administration of Traditional Chinese Medicine, established in 1988, is a relatively independent government agency under the Ministry of Health, with the overall responsibility of developing and regulating TCM activities. In 1997 the Government reiterated that it attaches equal importance to TCM and modern medicine, and TCM has similar status in Hong Kong (China), where the Chinese Medicine Ordinance enacted in 1999 regulates the registration of TCM practitioners, the licensing of traders in Chinese medicine, the registration of proprietary Chinese medicine and other related matters.

The Government of China has paid significant attention to TCM since the founding of the state, and the constitution makes specific reference to the need to develop both modern and traditional Chinese medicines. Traditional and modern medical systems are integrated at every level of health care. In 2004 there were 2973 TCM hospitals with 301,178 beds and 433,819 licensed TCM doctors.
and assistant doctors. Most general hospitals also have TCM departments. A TCM educational network has been formed that is similar to other medical education systems, including apprenticeship. Concurrently, traditional medicine from minority groups such as Mongolians and Tibetans has been further revived and enhanced. By the end of 2004, there were 196 minority medicine hospitals with a total of 11,687 professional staff.

**The Democratic People’s Republic of Korea**

Standardization and clinical evaluation of traditional medicine and human resources for preparation of traditional drugs have been strengthened. National guidelines for the use of traditional medicines have been developed.

**India**

The Department of Ayurveda, Yoga & Naturopathy, Unani, Siddha and Homoeopathy (AYUSH) falls under the Ministry of Health and Family Welfare. These systems of medicine are being strengthened by the improvement and upgrading of standards of education in undergraduate and postgraduate teaching; including AYUSH as part of the national health-care delivery system; promoting AYUSH practices through education, communication, documentation and dissemination of information; compiling an evidence base on efficacy, safety and standardization of drugs; and creating pharmacopoeia standards.

Standardization and quality assurance of Ayurvedic remedies has been emphasized through workshops with practical, hands-on training. Ten laboratories for AYUSH are being strengthened to provide accurate analysis of traditional remedies. Training has been carried out in research methodologies, quality assurance and drug standardization. Traditional medicine programmes in tribal areas are being strengthened with supplies for effective delivery of health services. Rare manuscripts, textbooks and documents are being revised, translated and published. In addition, several important private sector corporate houses are playing an important role in standardization and quality control of traditional remedies.

**Indonesia**

The drug regulatory authority is being strengthened to monitor the safety and efficacy of traditional medicines by developing training workshops and testing analytical methods and tools.

**Japan**

Although Japan has no national policy or government unit for traditional medicine, social health insurance covers 148 traditional medicine formulas. Japanese expert groups are actively involved in WHO projects on traditional medicine standardization.

**The Lao People’s Democratic Republic**

Traditional medicine treatments are being integrated into the health system. Complementary and alternative treatment guidelines have been revised and added to the national standard treatment guidelines.

**Malaysia**

The Herbal Medicine Research Centre within the Institute for Medical Research has developed a herbal medicine database, the Compendium of Medicinal Plants Used in Malaysia, which listed
2002 plants, the parts used and reported medicinal claims. The Institute for Medical Research is also in the process of developing a centralized electronic portal that consists of comprehensive, up-to-date and validated information on integrated medicine called the Global Information Hub on Integrated Medicine (GlobinMed). The web portal (http://www.globinmed.com/IMRContent/default.aspx) was officially launched in July 2007.

**Mongolia**

Traditional medicine is popular and plays a prominent role in the health-care system, with some 1235 drugs and bio-preparations registered for use. State policy on the development of Mongolian traditional medicine was approved by parliament in 1999, including strategies to develop traditional medicine hospitals and traditional medicine manpower, and to produce safe medicinal drugs. A national advisory council on traditional medicine was established in 2000.

**Myanmar**

Traditional medicine is being developed in a systematic and coordinated manner by producing medicines of assured quality, improving herbal gardens, strengthening the University of Traditional Medicine, and training human resources in research and development.

**Nepal**

The quality of Ayurvedic health care is being improved through the promotion of the proper use of traditional remedies by providers and consumers. Operational guidelines for all levels of government health care are being developed, with standard treatment protocols for selected priority disease conditions and guidelines for monitoring quality of care. The supply of traditional remedies is being improved. Traditional health-care providers are trained in the rational use of traditional medicines. A list of essential Ayurvedic medicines is to be printed and disseminated.

**New Zealand**

Standards for traditional Maori healing were released by the Ministry of Health in June 1999. These emphasize the role of Rongoa Maori in New Zealand’s health sector and provide national standards of practice for traditional healing. Recent legislation established an expert committee to evaluate complementary health care and provide continuing information and advice.

**The Republic of Korea**

The national medical law of 1952 recognizes both modern and traditional medicine. There are now 11 oriental medical colleges that run six-year courses. Each college has an affiliated oriental medical teaching hospital. Further specialization requires a one-year internship plus a three-year residency and qualifying examination. The Korean Herbal Pharmacopoeia was established in 1984, and includes detailed quality control test procedures. The National Health Insurance Corporation has covered traditional medicine since 1987. Traditional medicine doctors began to serve at public health centres in 1988. A traditional medicine bureau was established in the Ministry of Health and Welfare in 1996, and legislation for the development of Korean traditional medicine was passed in 2003. The first five-year comprehensive plan for promotion of traditional Korean medicine started in 2005 and includes a programme of research and development.
**Singapore**

New regulations were developed in 1998 requiring documentation, labelling and quality control of Chinese proprietary medicines, and this regulatory framework was fully implemented by 2001. Importers, wholesalers, manufacturers and re-packagers of Chinese proprietary medicines must be licensed by the Health Sciences Authority, and products have to undergo pre-marketing assessment before they can be sold in Singapore. The Traditional Chinese Medicine Practitioners Act was passed by parliament in November 2000, providing for registration of all TCM practitioners, and a Traditional Chinese Medicine Practitioners Board was formed in 2001. The Ministry of Health established a Traditional Medicine Unit in November 2005. The Ethical Code and Ethical Guidelines for Traditional Chinese Medicine Practitioners were published by the board in January 2006.

**Sri Lanka**

Training programmes have been organized on the rational use of traditional medicine for homeopathic practitioners and in *panchakarma* therapy of Ayurveda. Quality assurance in the production and standardization of traditional medicine is being strengthened.

**Thailand**

The Government is committed to the promotion of Thai Traditional and Alternative Medicine (TTAM). The Ministry of Health’s Department for Development of Thai Traditional and Alternative Medicine was established in 2002 to support the use of herbal medicines at public health facilities. The department establishes and promotes standards for TTAM and promotes its integration into the national health-care system.

**Viet Nam**

Traditional medicine is integrated into both primary and secondary health care. Explicit government policies and special agencies regulate traditional and complementary practices and herbal medicines, research, formal course work and practitioner associations. There is a legal and regulatory infrastructure, with updated legislation on registration and inspection of herbal medicines, and a licensing system to control traditional medicine practices. The official national policy document for traditional medicine has been approved recently by the Government. Viet Nam’s policy on traditional medicine is based on a statement by Ho Chi Minh in 1955 that Viet Nam should “inherit valuable experiences from traditional medicine and at the same time study the possibility of combining traditional medicine with modern medicine in order to establish our own medicine”. The 1980 constitution calls for the integration of traditional and modern medicine.95

**Problems and constraints**

Considerable progress has been made in the Asia Pacific Region in the recognition, integration and regulation of traditional medicine. However, the Region still faces many challenges, which can be grouped under the four categories adapted from the WHO Traditional Medicine Strategy.96 These are presented in Table 11.7.
Chapter 11

Future perspectives

A large proportion of the Asia Pacific population uses some form of traditional medicine. With a rich heritage of traditional medicine in the Region, it is a resource that can be effectively used in primary health care. Political support has increased as the vital role that traditional systems of medicine play in contributing to overall health systems development is recognized.97,98

Countries in the Region are developing and enhancing health research efforts, human resources development, the exchange of information and intercountry collaboration in traditional systems of medicine, and are establishing appropriate standards.

Table 11.7  Challenges in the development of traditional medicine in the Asia Pacific Region

<table>
<thead>
<tr>
<th>Category</th>
<th>Challenges</th>
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<tr>
<td>National policy and regulatory frameworks</td>
<td>Lack of official recognition of traditional medicine and providers</td>
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<td></td>
<td>Traditional medicine not integrated into the national health-care system</td>
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<td></td>
<td>Lack of regulation and legal mechanisms</td>
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<td></td>
<td>Inequitable distribution of benefits derived from indigenous traditional medicine knowledge and products</td>
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<tr>
<td></td>
<td>Inadequate allocation of resources for traditional medicine development and capacity-building</td>
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<tr>
<td>Safety, efficacy and quality research</td>
<td>Lack of research methodology and inadequate support for developing an evidence base for traditional medicine therapies and products</td>
</tr>
<tr>
<td></td>
<td>Lack of international and national standards for ensuring safety, efficacy and quality control of traditional medicine therapies and products</td>
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<tr>
<td></td>
<td>Lack of adequate regulation and registration of herbal medicines</td>
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<td></td>
<td>Lack of registration of traditional medicine providers</td>
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<td></td>
<td>Lack of evidence-based clinical trials on efficacy of traditional cures</td>
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<tr>
<td>Access</td>
<td>Lack of data about access and affordability</td>
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<td></td>
<td>Lack of official recognition of the role of traditional medicine providers in national health systems</td>
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<td>Poor cooperation between traditional medicine providers and modern practitioners</td>
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<td></td>
<td>Unsustainable use of medicinal plant resources</td>
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<tr>
<td>Rational use</td>
<td>Lack of training for traditional medicine providers and modern practitioners</td>
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<td></td>
<td>Lack of communication between traditional medicine and modern practitioners and between modern practitioners and consumers</td>
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<td></td>
<td>Lack of information for the public on the proper use of traditional medicine</td>
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</table>

Measures are being taken to protect, preserve and improve medical knowledge and medicinal plant resources for the sustainable development of traditional systems of medicine, including formulating policies on the protection and conservation of indigenous health resources.

Importance should continue to be given to ensuring the safety, efficacy and quality of traditional medicines by developing appropriate national norms and standards. Continuous promotion of public awareness about effective traditional remedies and practices will increase safe and rational use of traditional medicine.

Collaborative research should be pursued by experts, students and other health professionals on evidence-based practices in traditional medicine. Partnerships between relevant organizations will help develop the exchange of research information, regulatory standards and intellectual property, as well as the conservation of biodiversity.
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