



Asia in the ageing century: Part III – Healthcare



CEPAR research brief 2013/03



Australian Government
Australian Research Council

Summary

- *This is the third research brief in a three-part series that looks at Asia in the ageing century, with a particular focus on the countries of East and South-East Asia.*
- *The context is outlined in the first brief, which describes population, urbanisation and social trends in the region. Specifically, it notes that population ageing in East and South-East Asia is happening faster and at a lower level of economic development than in the West. Many Asian countries now have a decade or so to prepare for the final stages of demographic transition. Parts II and III of the series focus on two areas of economic activity which are both pertinent to population ageing and have enormous scale: provision of retirement income (covered in Part II) and of healthcare (outlined in the present brief).*
- *As Asian societies become wealthier and older they will demand more of their health systems. This translates to extending health insurance coverage to a broader cross-section of the population, and offering reimbursement for a greater proportion of costs on a larger package of benefits. China has enrolled 1.2 billion people into the health insurance system within the last decade but in some provinces benefit packages are lacking. Malaysia achieved universal health coverage in the 1980s, but in 2004 key medicines were only available in a quarter of public health facilities.*
- *East and South-East Asian governments currently have the fiscal capacity to keep expanding health systems, but to avoid the excessive cost growth seen in the West they will need to employ various micro, macro and demand-side measures – heeding the successes and failures of reforms within the region and elsewhere.*
- *An important area for healthcare is the epidemiological transition that comes with ageing societies, where the relative prevalence of non-communicable diseases increases. Health packages in Asia are yet to take a full account of this change.*
- *Health spending in the region was worth over US\$1 trillion in 2010. On the financing side, private health insurance is still a niche market making up US\$50 billion of spending, but recent growth has been high (e.g. 100% p.a. in China). On the provider side, the size and growth of the market will result in opportunities for pharmaceutical, medical device manufacturing and consumer health companies, as well as for operators of hospitals and specialised facilities. Some of that demand will spill over into the growing medical tourism market.*
- *At the level of the macro-economy, stronger welfare provision offers an opportunity to rebalance growth in the region by reducing excessive precautionary savings. So far, East and South-East Asian countries have been taking this opportunity but much remains to be done for healthcare systems to be fully ready for an ageing population.*

1. Introduction

Richer and better-educated populations across Asia will demand more from their health systems than they have in the past. It is now clear that developments in this field will not merely involve a transition from poor to rich or from low to high levels of health spending.

Changes will be layered with demographic and epidemiological dimensions, requiring specific responses and providing unique opportunities in financing, provision, and trade in the health sector. In most cases, the speed of Asia's demographic transition will dictate a level of healthcare development that is more advanced at a given level of income than was necessary in the evolution of western national health systems.

This is the final brief in a three-part series that looks at ageing in the Asian century, with a particular focus on the countries of East and South East-Asia Asia, but with contrasting comparisons to key regional countries such as India and Australia. Part I set the demographic context, showing that the scale and speed of ageing and urbanisation in the region is unprecedented, and that levels of labour mobility and weakening social institutions are eroding familial support networks.

Part II and III of this series look at the necessary responses and potential opportunities arising from Asia's population ageing. The second brief considered retirement income systems; here, we look at healthcare.

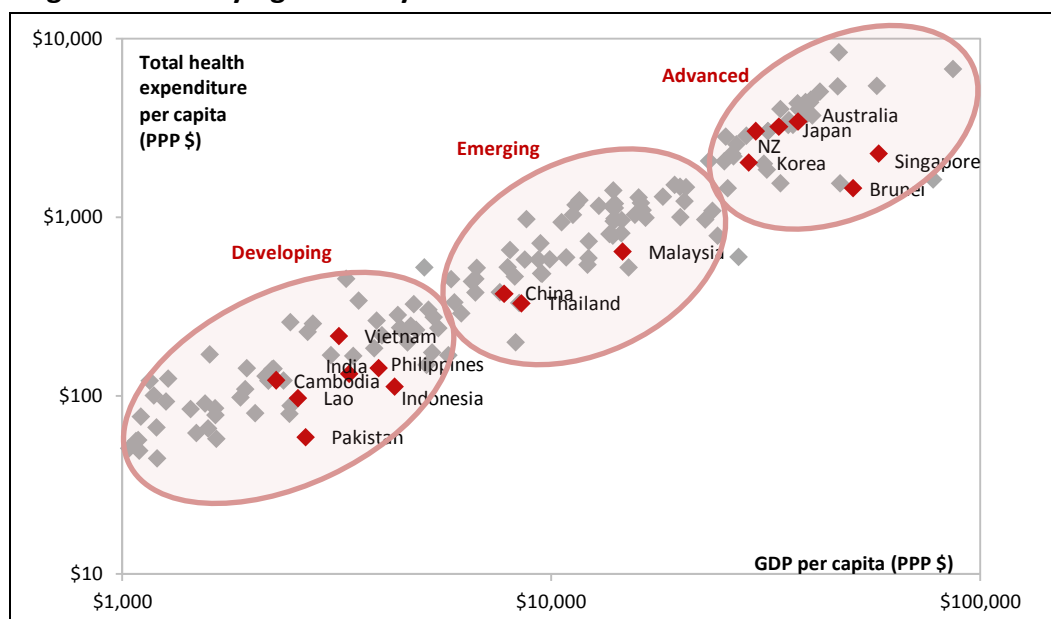
Not only are these two sets of topics pertinent to population ageing, they have enormous scale. They also represent a macro-economic opportunity to rebalance growth across Asia – allowing individuals to pool idiosyncratic risks associated with income and health shocks and reducing the need for households' excessive precautionary savings (Chamon and Prasad, 2008, Baldacci et al., 2010).

2. Systems in transition

Despite the diversity of Asia's health systems, we can try to classify them

Asia's health systems have diverse origins, levels of development and expected trajectories. This heterogeneity is, for example, apparent in the range of health outcomes proxied by average life expectancy – from 64 in Cambodia to 84 in Japan. At the cost of some oversimplification, it is possible to classify these systems using the same types of categories into which one might group a set of economies: developing, emerging and advanced (e.g., see Kanzler and Ng, 2012). The classification corresponds to the level of spending on healthcare as well as income per capita, which are highly correlated (see Figure 1).

Figure 1. Classifying health systems 2010



Source: WHO (2013); World Bank (2013)

‘Developing’ systems, for example, have low or uneven health coverage

Health systems which are in the ‘developing’ category, including those of Cambodia, India, Indonesia, Pakistan, the Philippines, and Vietnam, can be characterised by high out-of-pocket costs, poor use of technology, low and uneven coverage of financing and service availability, inadequate preventative care, and inequality in the health status of the population.

‘Emerging’ systems still suffer from some of these issues, but less so

Emerging health systems, including those of China, Malaysia, and Thailand share some of these characteristics but to a lesser degree; for example, access to services can still be variable. In addition, emerging systems experience growing levels of private insurance and medical tourism, particularly in Malaysia and Thailand. Both developing and emerging systems face challenges relating to the dual burden of infectious as well as non-communicable diseases (see Section 6). All countries, but particularly those with advanced health systems, are experiencing public cost increases as an area of concern.

A key issue for ‘Advanced’ systems is excessive costs

All these elements are coloured by the changing demographics. Increasing costs are being driven by greater use of costly technology, higher levels of utilisation, as well as growing elderly populations. Older people, especially the older-old, have higher rates of disease; health treatments for older people are on average more expensive than those for younger people; and the decreasing size of families and level of cohabitation means that a greater proportion may rely on public financing rather than private, familial support.

Countries which are further advanced with demographic transition may be thought of as a model for the still younger, emerging countries in designing effective healthcare systems. Japan, for example, has the oldest population in the world but its health system is still one of the most efficient and, compared with developed countries, one of the cheapest.

Table 1. Summary of health financing in selected countries

	Public	Pop cover	Costs cover	Benefit cover / Access issues	Private market
Australia	<ul style="list-style-type: none"> Tax financed Medicare (1984) 	100%	68%	<ul style="list-style-type: none"> Hospitals and medical service free/subsidised Ancillary at public hospitals Medicine purchase scheme to lower costs + subsidies for poor 	\$11.4b
China	<ul style="list-style-type: none"> Urban Employee Basic Medical Insurance (1998; mandatory) Urban Residents Basic Medical Insurance (2007; voluntary) New Rural Cooperative Medical Scheme (2003; voluntary) Medical Financial Assistance covers premiums/extra costs of rural poor 	95%	54% but varies by area	<ul style="list-style-type: none"> Mostly catastrophic and inpatient care Tiered public hospitals Median availability of selected generic medicines: 18% in 2006 Decentralised, with variable benefit packages, access and quality Oversubscribed/wait periods 	\$29.5b
Hong Kong	<ul style="list-style-type: none"> Tax financed Dept of Health and Hospital Authority 	100%	29%	<ul style="list-style-type: none"> Hospitals /medical: free/subsidised But long waiting periods 	\$1.1b
India	<ul style="list-style-type: none"> Employee State Insurance Corporation (1948) 	low	49%	<ul style="list-style-type: none"> Medical free/subsidised through tiered hospital system Median availability of selected generic medicines: 21% in 2004 Oversubscribed/waiting lists Variable access and quality 	\$6.6b
Indonesia	<ul style="list-style-type: none"> Jamsostek Medical Scheme (1992). Mandatory for employees unless they have better private cover Jamkesmas (2004) tax funded for poor Askes for public sector 	63%	83%	<ul style="list-style-type: none"> Jamkesmas medical free at public or private hospitals, and generic medicines at special pharmacies Variable access and quality Median availability of selected generic medicines: 47% in 2004 	\$2.3b
Japan	<ul style="list-style-type: none"> Employees Health Insurance (1961) for employees and families National Health Insurance for others Integrated aged care/healthcare for older 	100%	46%	<ul style="list-style-type: none"> Universal access to any facility: public and private hospitals / clinics (for-profit hospitals don't exist) 	\$16.3b
Korea	<ul style="list-style-type: none"> National Health Insurance (1977) for employees, subsidised by Medical Aid Programme for others 	100%	56%	<ul style="list-style-type: none"> Free choice of facilities, almost entirely by private providers 	\$6.6b
Laos	<ul style="list-style-type: none"> Health insurance for employees and family 	Low	35%	<ul style="list-style-type: none"> Medical through hospitals Excludes vehicular road traffic accident and cosmetic treatment 	n/a
Malaysia	<ul style="list-style-type: none"> Tax financed system run by Ministry of Health (1957) 	100%	36%	<ul style="list-style-type: none"> Medical care in hospitals and clinics Medicine subsidised Median availability of selected generic medicines: 25% in 2004 	\$1.1b
Philippin.	<ul style="list-style-type: none"> National Health Insurance Programme (1995) for formal employees Sponsored Programme (1996) for poor Individually-Paying Programme (1999) for informal and self-employed Overseas and retiree programmes 	82%	75%	<ul style="list-style-type: none"> Benefits on schedule up to a ceiling Medical and hospitals provided at different govt levels Median availability of selected generic medicines: 15% in 2005 	\$0.8b
Singapore	<ul style="list-style-type: none"> Medisave (1984) – mandatory savings MediShield (1990) – group insurance Medifund (1993) means-tested cover ElderShield (2002) for aged care 	100%	38%	<ul style="list-style-type: none"> Heavily subsidised hospitals Medisave used for basic treatment Serious treatment from Medishield Medifund covers deficit beyond Medisave/Medishield /own means 	\$0.8b
Thailand	<ul style="list-style-type: none"> Civil Servant Medical Benefit Scheme Social Security Scheme (1990) Universal Coverage Scheme (2001) - formerly 30-Baht Scheme for poor 	99%	68%	<ul style="list-style-type: none"> Basic medical and hospital Median availability of selected generic medicines: 75% in 2006 	\$1.4b
Vietnam	<ul style="list-style-type: none"> Compulsory Health Insurance (2009) with tax financing for poor Voluntary Health Insurance (2009) 	65%	54%	<ul style="list-style-type: none"> Basic inpatient/outpatient package Variable access and quality 	\$0.3b

Source: Swiss Life (2012); WHO (2013); China's Ministry of Health (2012); Barber and Yao (2010); UHC Forward (2013); European Observatory on Health Systems and Policies (2013); government health insurance provider web sites; Author's calculations. Note: Dates denote scheme inception. Private sector insurance market based on value of prepaid premiums in US\$ in 2010. Costs cover relates to public sector expenditure as proportion of total health expenditure – it may be different essential healthcare since above figures may reflect levels of discretionary health spending (e.g., in Japan public cover for essential treatment is 70-90%).

China can also act as a model for other developing countries. It has achieved near universal coverage at a fraction of the income of countries that have put it in place in the past and at an unprecedented pace.

3. Health insurance coverage

A common aim is for health coverage to become universal

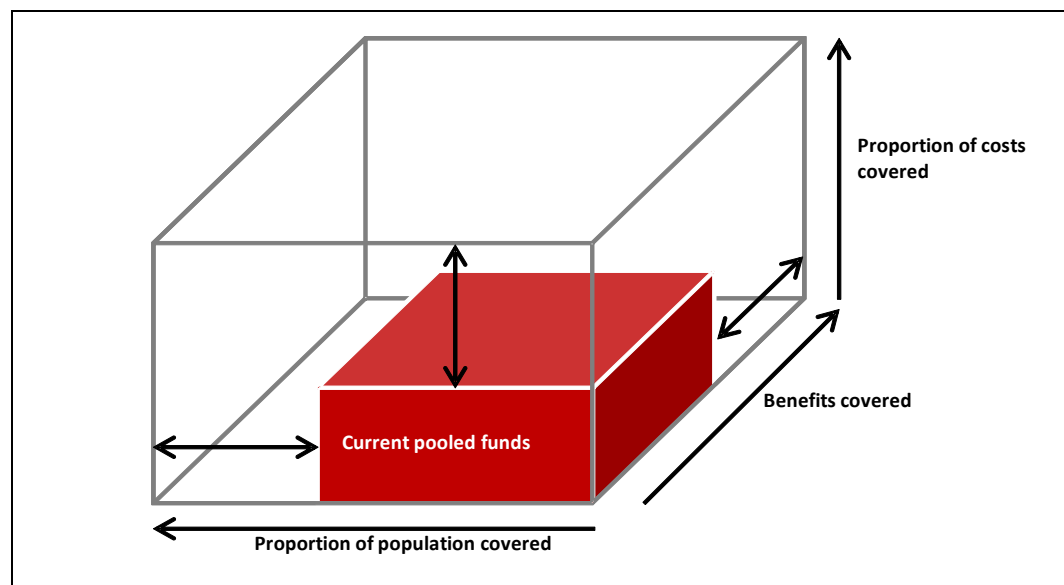
The coverage of a country's health insurance system has several dimensions. The most popular meaning refers to the proportion of the population insured by the scheme. Advanced countries (with the notable exception of the United States) and many emerging countries have reached universal coverage. This ensures that all or almost all citizens are entitled to some level of health care.

But the types of benefits and level of reimbursement also matter

But even where the whole population is covered by health insurance, the depth or scope of the benefits package that is available through the system – or the proportion of costs covered – may be limited. The concept is demonstrated visually in Figure 2. Furthermore, effective coverage can be poor despite the official level of entitlement, for example, when clinics are far away. Malaysia may have achieved universal health coverage in the 1980s, but in 2004 key generic medicines were only available in a quarter of public health facilities.

And these can also be limited if accessing them is difficult

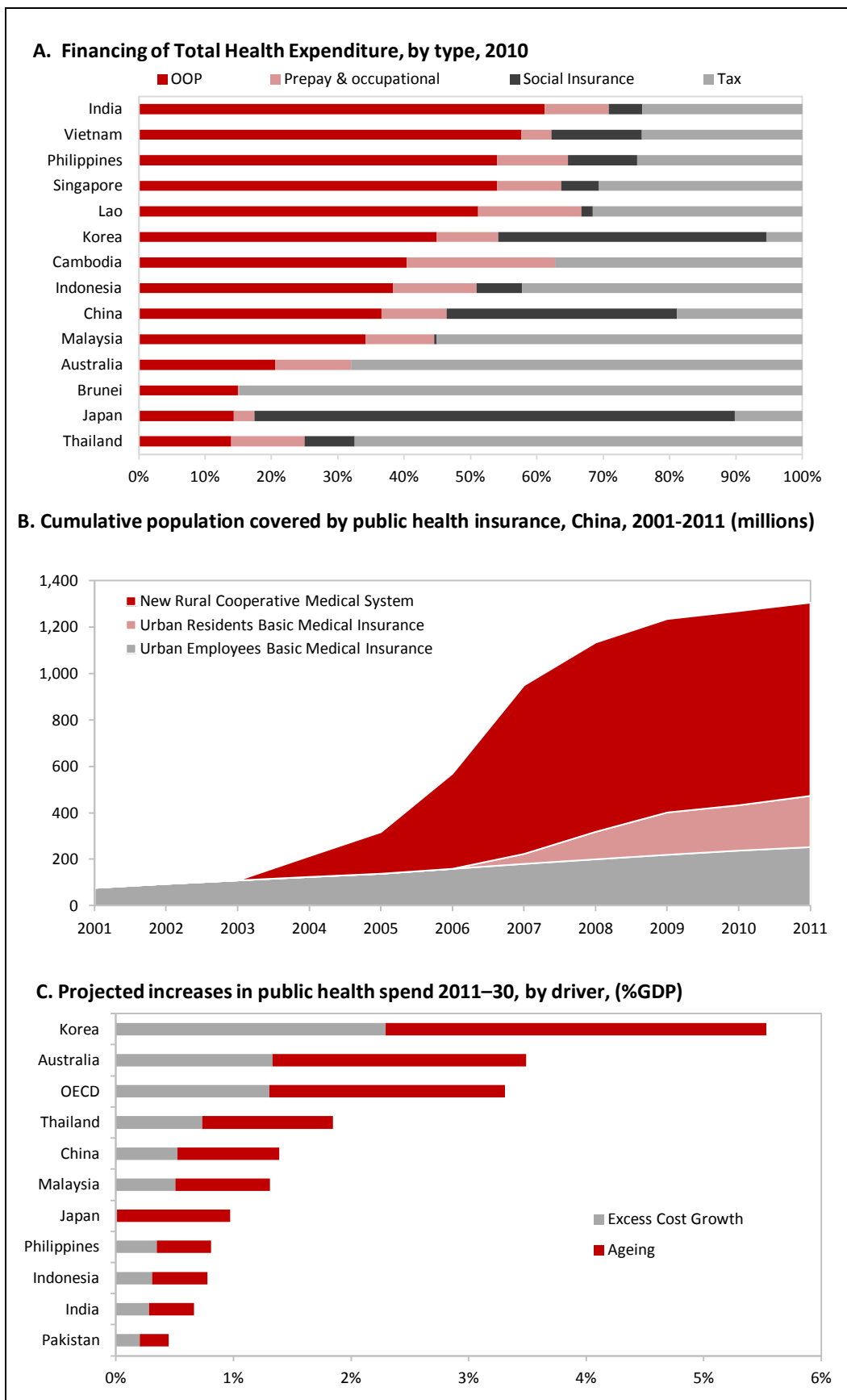
Figure 2. Conceptual model of health insurance coverage



Source: Busse and Schlette (2007)

Table 1 summarises the main public health insurance systems in place and the extent of their coverage across selected Asian countries. Countries with emerging health systems, such as India, Indonesia, Laos, Philippines, and Vietnam still have low levels of coverage, though some, such as the Philippines and Vietnam are en route to achieving universal levels.

Figure 3. Coverage and financing



Source: Busse and Schlette (2007); China's Ministry of Health (various); WHO (2013); Soto et al. (2012); Note: OOP denotes Out-Of-Pocket costs. Excess cost growth relates to increases in cost of health due to non-demographic factors (e.g., technology, utilisation).

Countries with tax-financed systems, such as Malaysia, tend to have more comprehensive coverage, compared to those with social health insurance coverage, where only formal sector employees have traditionally been covered (Figure 3.A).

Extending coverage and lowering out-of-pocket costs can be done in a number of ways

China's expansion of health coverage has been staggering. It has enrolled 1.2 billion people into the health insurance system within the last decade and coverage for rural citizens increased from near-zero to almost universal in the space of just five years (Figure 3.B.). Much of this has been the result of the central government subsidising local governments and decentralising decision-making rather than mere mandate. While successful in covering the population, it has meant uneven benefit packages across provinces (Barber and Yao, 2010).

Filling out the box in Figure 2 to a level that is financially sustainable is often the stated aim for health systems. Governments that have achieved universal coverage are now looking to improve the generosity of their respective systems, in particular, reducing high out-of-pocket costs. For example, out-of-pocket spend was nearly 40 per cent of total health expenditure in Indonesia and China, compared to 14 per cent in Thailand and Japan (Figure 3.A).

In Singapore, for example, there is greater onus on self-provision

Yet, reducing private spending is not uniformly pursued by all governments. For example, Singapore aims to foster personal responsibility for health: while it offers extensive subsidies within the public system, it has instituted a compulsory, tax-deductible savings scheme from which families must pay a varying proportion of costs or purchase their own private health insurance.

4. Containing costs

Bigger health systems and older populations will result in greater costs

The increase in health expenditure resulting from improvements in coverage, technology and ageing is replete with challenges and opportunities. The IMF, in Soto et al. (2012), estimates that in the next 20 years public health spending in Asia will see an increase of between 0.5 per cent of GDP in Pakistan and 5.5 per cent of GDP in Korea (Figure 3.C), with more than half of that increase due to population ageing. While OECD countries are expected to see higher proportional levels of growth than emerging Asia, the projected GDP growth in the latter translates to a considerable amount of money in absolute terms. China's Ministry of Health (2012) notes that between 1978 and 2011 the average annual real growth rate of total health expenditure was over 11 per cent, well above annual GDP growth.

But while Asia can still afford it, it still needs to consider efficiencies and cost controls

The IMF believes that emerging economies have the fiscal space to increase health expenditure, but warns that this be done in a "*fiscally sustainable manner while avoiding the inefficiencies and resulting high costs of the health systems of advanced economies*" (Gupta et al., 2012, p7).

So how can governments restrain health costs? There are a number of macro, micro and demand-side measures that various countries have implemented with varying degrees of success (Tyson et al., 2012; Jenkner et al., 2012). These are summarised in Table 2, and range from budgetary caps to introducing co-payments.

Table 2. Measures for containing healthcare costs

Macro-level controls	Budget caps	Limits on overall or subsector spending (e.g., hospital budgets or GP expenditure ceilings)
	Supply constraints	Limiting volume of inputs or outputs in healthcare (e.g., GP numbers, controlling the pharmaceuticals or benefits schedule)
	Price controls	Regulating prices (e.g., wages, reference pricing of pharmaceuticals or benefits, payment by capitation or Diagnosis Related Group (DRG))
Micro-level reforms	Public management and coordination	Organisational changes to improve accountability, incentives, or reduce overlap (e.g., fewer management levels, gate-keeping by GPs to screen out unnecessary specialist treatment)
	Contracting	Changing arrangements with physicians, hospitals and other providers (types are: salaries or budgets, capitation or DRG, fee-for-service)
	Market mechanisms	Introducing market mechanisms between supply and demand side to stimulate competition (e.g., internal market of GPs buying services from hospitals, separating financing and provision, patient choice)
Demand-side reforms		Increasing share of costs borne by patients (e.g., lump sum or co-payments, tax treatment of private health insurance)

Source: Adapted from Oxley and MacFarlan (1995) and IMF (2010)

Japan is one example where pricing controls have been effective

Japan has been very successful in using price controls across the entire health system to keep costs down, while Thailand has been a regional leader in moving from fee-for-service payments to location-specific caps, hospital budgets, and a Diagnosis Related Groups system of reimbursement. China follows other countries in announcing a pilot to use collective market power and negotiate pharmaceutical contracts at a provincial level (Government of People’s Republic of China, 2012).

Future-proofing health systems against population ageing will require more work, however. Even though Japan is thought to have a successful health system model, it still suffers from poor incentives and over-utilisation issues. Even excluding long-term care costs, elderly Japanese (aged 65+) are responsible for per capita health expenditure that is four times that of the rest of the population (Li, 2012).

5. Role of private sector

Private sector can help to pool excess risks and reduce out-of-pocket expenses

Differences in the level of development, values and political priorities will influence how much prominence countries place on private sector involvement in healthcare. Yet private sector financing has its benefits in limiting public expenditure, supplementing basic socialised coverage, reducing Out-Of-Pocket expenses, and stimulating the supply of more advanced, specialised treatments. Based on the conceptual framework in Figure 2, private health insurance allows us to expand the breadth, depth and height of the box.

But the sector is still nascent

Private health insurance in the region is still a relatively niche market, worth an estimated US\$50 billion in 2010 across East, South-East and South Asia (see Table 1; total excludes Australia and Japan). More than half of that is attributed to China, which saw the value of private health insurance revenues approximately double each year between 2008 and 2011.

With appropriate regulations in place, the benefits of an active private sector health insurance market can be reaped while limiting inequality. Examples of these regulations include fixed private insurance premiums for basic coverage that encourage competition on quality rather than cost, mandatory acceptance of all patients regardless of pre-existing conditions, and the creation of risk funds that equalise risk across insurers and therefore reduce the targeting of low-risk populations (Kanzler and Ng, 2012; also, see Box 1 about related modelling).

It can also improve efficiency and reduce costs if managed correctly, and private market entrants can reap some of the rewards

As noted in Section 4 and Table 2, private sector involvement is one way to introduce market mechanisms to drive efficiency and innovation – the third wave of reforms in the development of the health system (following reaching universal coverage and pursuing rationing and expenditure caps; Cutler, 2001). Thailand is one example. Viriayh, one of its established private health insurers, has recently developed micro-insurance products to meet the demands of the lower-income population within the universal healthcare system. It has been rewarded for its success. In 2009, it recorded growth of over eight per cent compared to the three per cent average in the Thai non-life insurance industry (International Insurance News, 2010).

But private insurer competition must be managed correctly to avoid the pitfalls seen in the dysfunctional market in the USA, where the proliferation of insurers weakens their individual market power to negotiate with providers and results in increased costs (Porter and Teisberg, 2006). In general, a greater share of private insurance across OECD countries is associated with lower non-demographic cost increases (Tyson et al., 2012)

Aside from financing, there are many opportunities for private sector provision

Private sector involvement can come in different forms. In addition to acting as payors themselves, private institutions can help public health insurers in purchasing, claims processing, IT, quality control and cost control under competitive contracting. Taiwan has managed to run its national health insurance with administrative costs accounting for only 1.3 per cent of the budget thanks to effective use of health information technology (Cheng, 2012).

Encouraging private payors to run health facilities, including physician networks, could create incentives to improve provider quality and efficiency (Kanzler and Ng, 2012). China has pledged to double the patient volume at private hospitals, which make up a third of the country's hospital stock, during its current five year plan (Government of People's Republic of China, 2012). If

this involves large-scale privatisations, it may be a possible route into Chinese healthcare for private investors.

Box 1. CEPAR research spotlight: Private health insurance over the lifecycle

A well-functioning private health insurance system alongside universal health insurance may reduce cost pressures on the public systems and improve overall efficiency. Yet the prominence of private health insurance differs greatly across countries, not least because governments impose different regulatory mechanisms and incentives to protect those who may otherwise be priced out of the market.

In the first paper of its kind, CEPAR research fellow, [Elena Capatina](#), with Minchung Hsu and Gary Hansen (forthcoming) study the interaction between public and private insurance in a general equilibrium, life-cycle framework. They develop a life-cycle model of individual decision-making based on outcomes seen in several, mostly, OECD countries (Korea, Japan, and Taiwan are included in the study) and show that the interactions between health and labour income risk during working life and between health risk and bequest motives during retirement are important in shaping the demand for private health insurance.

They also look at the implications of several government policies and regulations of private health insurance markets, focusing on the effects of subsidies and of regulation preventing discrimination based on health status, as well as how other government programs such as social security distort the incentives of different age groups to purchase private health insurance.

The total health sector spending in East and South-East Asia was worth over US\$1 trillion in 2010. That level of expenditure allows ample opportunities for providers, from private hospitals to specialised facilities, IT providers (see box 3), pharmaceuticals and consumer health. Greater competition in the provider market has the potential to lower costs for public and private payors.

The East and South-East Asian market for medical devices, medical imaging, and diagnostics was worth about a third of the global market, at around US\$100 billion (Frost & Sullivan, 2011). It is predicted that Asian markets will overtake those of Europe and North America within 15 years, presenting advanced economies such as Australia, which are integrated in the region, a significant advantage. At present, Australian companies excel in very niche markets. Only seven per cent of medical technology patents filed in Australia in 2007 were by Australian companies, indicative of a dominance of foreign players (Griffith Hack, 2010).

The advice is that investors in this sector should take the long view

Healthcare market growth seen in recent years is naturally not guaranteed to continue, and foreign entrants will want to take a long view on investment as Asian healthcare budgets reach advanced economy levels and as the demographic shift takes place. In the meantime, the advice is that companies

wishing to explore the market think about local partnerships, build creative business models to reach diverse market segments and engage, where possible, with the various, decentralised layers of government (Le Deu et al., 2012).

6. Changing needs

Having discussed breadth of coverage and levels of cost covered, we turn to the benefit package

Demographic changes described in this paper are coupled with, and in many ways linked to, the epidemiological transition. This trend involves an adjustment of the burden of disease from infectious to non-communicable diseases (NCDs; see Singapore in Figure 4.A, for an example). NCDs are often those associated with lifestyle, urbanisation and ageing, and include cardiovascular disease, cancer, chronic respiratory diseases, and diabetes.

As incomes increase and populations age non-communicable diseases become more important

Like other parts of the world, even as overall mortality rates have decreased, Asia has experienced a rapid relative increase in the prevalence of NCDs leading to considerable human and economic costs (Abegunde, 2007). According to the International Diabetes Federation (2012) there are already some 125 million diabetics in East Asia and the Pacific, which has seen rates quadruple since the 1970s, and China reports to have a total of 260 million people diagnosed with various chronic diseases (China's Ministry of Health, 2012).

The region faces a double burden of disease, where NCD rates are increasing even as communicable diseases are still prevalent. Indeed, vulnerable populations are the hardest hit, with NCD related death rates inversely proportional to GDP (Dans et al., 2012).

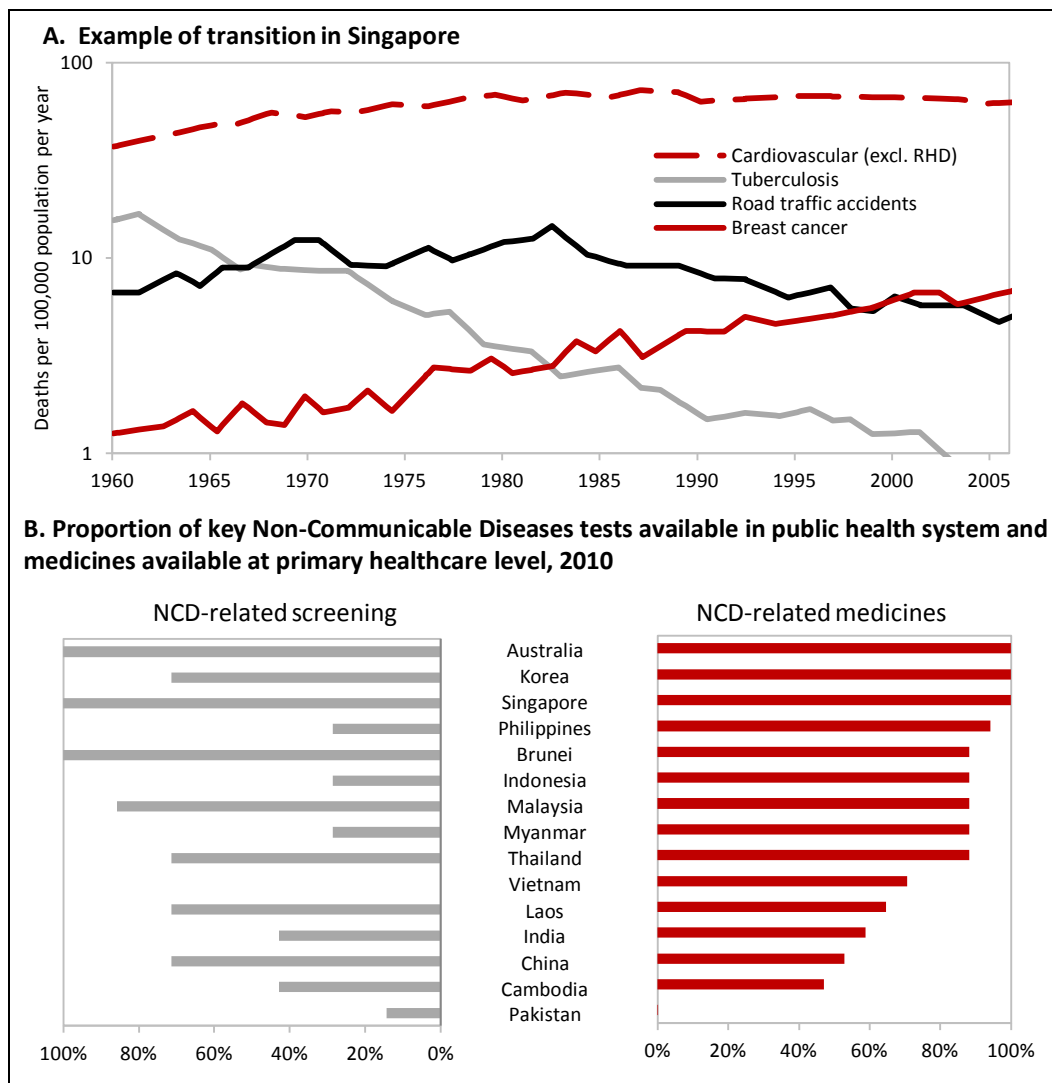
Even though the age- and sex-specific burden of disease from chronic illness, measured by financial cost, mortality or morbidity, may be expected to decline, the demographic profile of populations will mean that total burden of non-communicable disease will likely increase across all regions (except possibly for lung cancer).

But some countries are not yet responding to this changing need

There are some significant implications. In terms of financing, it will be important to design essential benefit packages that include NCD screening and treatment. Screening and response capacity will also need to be strengthened across the region. Currently, the availability of key NCD tests in the public system and medicines at primary healthcare level are limited in many Asian countries (Figure 4.B).

There is also a public health imperative to focus on preventative care and managing lifestyle factors (See Box 2). For example, strategies to reduce salt intake and control tobacco in emerging countries can cost as little as US\$1-2 per person and avert millions of deaths and billions of dollars of loss in economic output (Lim et al, 2007).

Figure 4. Epidemiological transition



Source: Chongsuvivatwong et al. (2011), WHO (2013); Note: Based on availability of 17 medicines (insulin, aspirin, metformin, glibenclamide, thiazide diuretic, ACE inhibitors, CC and beta blockers, tamoxifen, statins, oral morphine, nicotine patches or gum, salbutamol, prednisolone tabs, steroid inhalers, hydrocortisone injections, ipratropium bromide) and 7 tests (peak flow measurement spirometry, total cholesterol measurement, electrocardiogram, diabetes testing, palpation or mammogram, bowel cancer screening (digital or colonoscopy), and cervical cytology).

Those that are responding are also investing in related research

Developing institutional capacity for research can be one early tactic. The successes of the Thai health system in tackling NCDs may in part be the result of investment in research and health promotion directly funded by tobacco and alcohol taxes.

Indeed, there are strands of research in this area that remain unexplored. For example, the relationships between urbanisation and the health of a population are well known, but there is far less knowledge about the health effects of urban living on an ageing population (Black et al., 2011).

Box 2. CEPAR research spotlight: Chronic illness management

Many patterns of illness confronting ageing populations are avoidable and can even be reversed with appropriate lifestyle changes. This is often referred to as ‘healthy ageing’ and can mitigate the expected increases in health expenses. CEPAR Associate Investigator, **Colette Browning**, with colleagues at Peking and Monash universities and in the Beijing government, has been conducting a study related to such a chronic illness management system in China. It is work based on previous research conducted in Australia.

As part of the initiative, known as the Happy Life Club, doctors and nurses are trained to change the behaviour of people with chronic conditions by way of motivational interviewing techniques. Initially, the Happy Life Club intervention was conducted in a large residential area of Beijing, but has now been extended to a larger district of Beijing. There are now plans to extend it to other cities in China and Malaysia.

The large-scale research shows that the approach is highly effective. The cost and benefit modelling is still taking place, but the smaller-scale Australian modelling showed a net benefit of AUD \$16,000 a year for each participant due to improved health and lower use of services. What is more, the programme has improved the participants’ quality of life, with increased social networks and greater psychological well-being.

7. Medical tourism

Medical tourism is another area seeing changes as a result of economic and demographic developments

Medical tourism is amongst a range of niche markets that will likely be fuelled by the health demands of ageing populations. The term usually refers to patients travelling to other countries in pursuit of medical services, often incorporating leisure activities.

The industry is still poorly defined. Services can range from ‘wellness’ treatment (e.g., massage and acupuncture) to elective procedures (e.g., cosmetic, dental) and specialist and medically necessary healthcare (e.g., chemotherapy). The main Asian destinations are thought to be India, Korea, Malaysia, Singapore and Thailand. Those liable to benefit may not only include the health providers themselves but also those involved in travel and accommodation, conference and media, financial products and insurance, website portals and brokering agencies.

It is reportedly growing very rapidly...

The lack of robust definitions and or standard data means that estimates of the size of the industry range from an annual 60,000 to 50 million patients worldwide (Ehrbeck et al., 2008; Lunt et al., 2011). But most sources agree that the market is growing rapidly. Even in Australia, which was estimated to have received only around 13,000 medical travellers in 2010, the rate of growth of

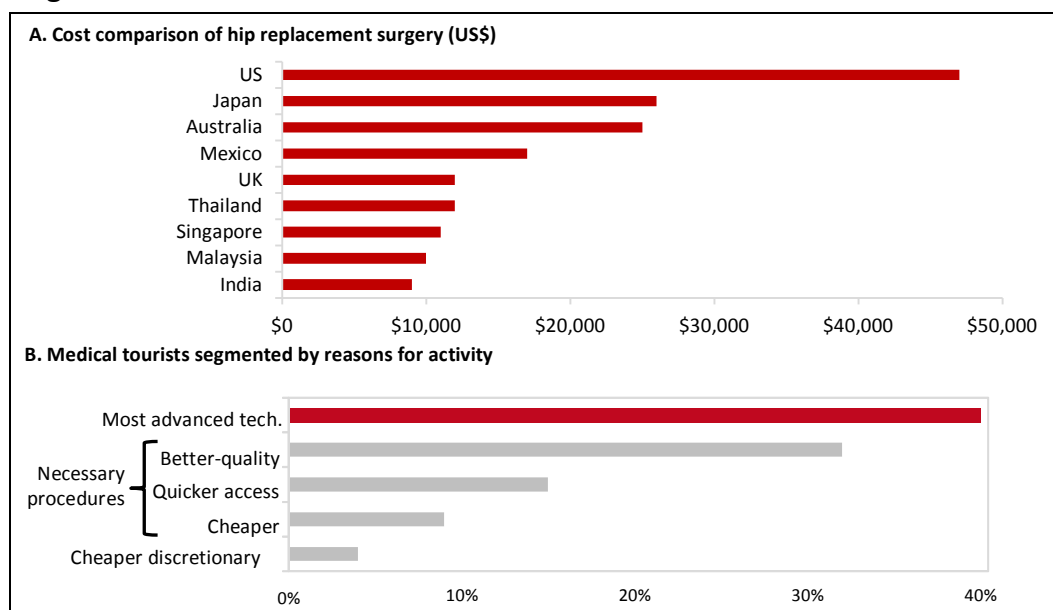
...but it is still poorly defined, and lacks good quality data...

this figure is thought to be 14 per cent per year, compared to 2 per cent for all tourists (Deloitte Access Economics, 2011).

The pace of growth is perhaps unsurprising given the increases in demand from wealthier and older populations coupled with limits on supply from health systems, which leave some procedures uncovered or rationed by way of long waiting periods. The demand will likely intensify. For example, if China had the same levels of hip replacement per person over the age of 65 as the OECD, by 2050 it would translate to over three million hip replacements per year.

Unlocking the potential of this market depends on several factors. Currently, waiting time and cost are important reasons for travel. A hip replacement in Thailand costs about a quarter of what it does in the United States, and half of the cost in Australia (Figure 5.A). Yet, a survey by Ehrbeck et al. (2008) reveals that only 28 per cent of those who travelled for treatment did so because of cost and time considerations (Figure 5.B). The rest cared more about superior quality or medical technology available in the destination country. This finding is encouraging for countries with medium levels of cost but advanced medical facilities, such as Japan and Australia.

Figure 5. Costs and drivers of medical tourism



Source: Ehrbeck et al, 2008; Lunt et al, 2011; Note: Cost of surgery is based on 2010/2011 values

...and appropriate regulations

One issue with gauging quality is that despite an accreditation scheme, there is scant data on quality of care and little in the way of disclosure about complication rates, or, indeed, international regulation to cope with such complications. Without regulatory infrastructure agreed at a regional level, health insurers may also be wary of covering travel and treatment in other countries, even if the total cost may be lower. The limitations suggest that providers, insurers and governments need to approach this area constructively if they are to benefit from such trade.

Box 3. CEPAR research spotlight: Delivering services by mobile phone

Innovative delivery models can improve access and reduce costs of healthcare. For example, some health needs can be addressed by use of mobile phone technology, especially in countries with low healthcare infrastructure. This is the concept behind mHealth (and eHealth via the internet), where patients can have a medical consultation, treatment, diagnosis, referral and counselling from registered physicians, all by mobile phone. Pradeep Ray, a CEPAR Associate Investigator, has looked at perceptions of quality of mHealth (Akter et al. 2010) and is undertaking work on acceptance of such delivery models in Bangladesh and India. Mobile and internet technology in healthcare will be important for both developing and developed countries as population ageing takes place.

8. Conclusion

This final research brief in a three-part series looked at healthcare systems across Asia. It described how the development of healthcare systems will be shaped by demographic change. As Asians become wealthier and older they will demand greater levels of health coverage, which will depend not only on the breadth of the eligible population but also on the scope of the benefits and level of costs covered of those who are insured.

To ensure that this does not result in disproportionate cost growth, governments will have to consider various macro, micro, and demand-side measures. Healthcare demand provided by the state, out-of-pocket costs and private insurance is already substantial and population ageing will increase this further, creating market opportunities for private sector insurers, providers, and the medical tourism market.

At the level of the macro-economy, stronger welfare provision has the potential to rebalance growth in the region – where individuals can pool income and health risks and have less need for excessive precautionary savings.

The briefs covered retirement and healthcare systems, but there are of course other fields that invite analysis. For example, long-term aged care is a yet undeveloped policy area in Asia, particularly among low and middle-income countries, but one that will also require attention (Box 4; see also Box 2 in the first brief in this series).

As the first brief in this series notes, the Asian century will also be the ageing century – an important concept to grasp for countries, institutions, and individuals wishing to understand their place in its future and to take advantage of the opportunities it can offer ■

Box 4. CEPAR research spotlight: Disability & functional limitations of older people

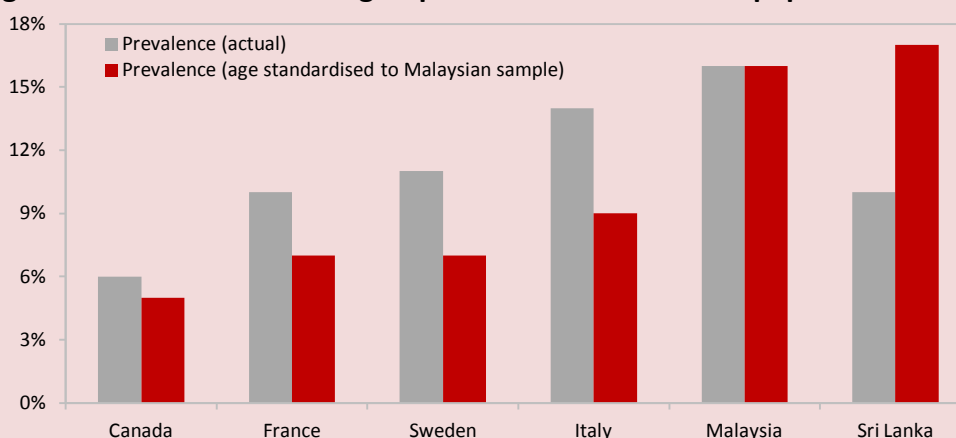
Physical disability and functional limitation are known to increase with age. But there is a dearth of relevant data for emerging Asian countries. CEPAR Chief Investigator, **Robert Cumming**, with other colleagues (Hairi et al., 2010), collected such data for the rural population in Malaysia.

The study involved two levels of assessment: (1) self-reported physical disability, based on whether the individual had problems with one in five, six, or ten Activities of Daily Living (ADLs); and (2) functional disability, based on practical tests of functional limitation such as walking and sitting.

They find that half of those aged 75+ reported needing help in at least one of the 10 ADLs, and that ethnic Indians had greater levels of physical disability. Comparing results with international studies reveals that developing countries such as Malaysia have higher levels of disability among the old (Figure 6). This may relate, firstly, to socio-demographic differences: older people in rural Malaysia have lower levels of education and remain active in physically demanding, farming jobs. Secondly, formal care in Malaysia is accessible only to the wealthy or the destitute, so more disabled older people live in the community than is the case in developed countries. Institutions were not included in the Malaysian data, so sampling differences may exist between studies.

Collecting such data is an important step in designing support for care-giving arrangements as well as gauging the likely utilisation of healthcare. Professor Cumming is also involved with a major multidisciplinary study of ageing in Malaysia (MELoR – Malaysian Elders Longitudinal Research).

Figure 6. Prevalence of needing help with one in five ADLs for population 65+



References

- Abegunde, D., C. Mathers, T. Adam, M. Ortegón, K. Strong (2007) 'The Burden and Costs of Chronic Diseases in Low-income and Middle-income Countries', *The Lancet* 2007; 370: 1929–38
- Akter, S., J. D'Ambra (2010), 'User Perceived Service Quality of mHealth Services in Developing Countries', ECIS proceedings
- Baldacci, E., G. Callegari, D. Coady, D. Ding, M. Kumar, P. Tommasino, and J. Woo (2010) 'Public Expenditures on Social Programs and Household Consumption in China', IMF Working Paper, WP/10/69, Washington DC
- Barber, S. and L. Yao (2010) 'Health Insurance Systems in China: A Briefing Note' World Health Report, Background Paper, 37
- Black, D., K. O'Loughlin, H. Kendig and L. Wilson (2011) 'Cities, Environmental Stressors, Ageing and Chronic Disease' *Australasian Journal on Ageing*, Volume 31, Issue 3
- Busse, R., and S. Schlette (2007) 'Health Policy Developments 7/8: Focus on Prevention, Health and Ageing, and Human Services', Verlag Bertelsmann Stiftung, Gutersloh
- Capatina, E., M. Hsu, and G. Hansen (Forthcoming) 'Private Health Insurance in the Presence of Universal Health Insurance over the Life-cycle', CEPAR working paper series
- Chamon, M., and E. Prasad (2001) 'Why Are Saving Rates of Urban Households in China Rising?' IZA Discussion Paper Series No. 3191, Forschungsinstitut zur Zukunft der Arbeit Institute for the Study of Labor, November 2007
- Cheng (2012) 'Taiwan Province of China's Experience with Universal Health Coverage', in B. Clements, D. Coady, and S. Gupta (eds) 'The Economics of Public Health care Reform in Advanced and Emerging Countries', International Monetary Fund, Washington DC
- China's Ministry of Health (2012) 'White Paper on China's Medical and Health Undertakings', December 2012, Beijing
- China's Ministry of Health (various) statistics from <http://uhcforward.org>
- Chongsuvivatwong, V., K. Phua, M. Yap, N. Pocock, J. Hashim, R. Chhem, S. Wilopo, A. Lopez (2011) 'Health and Health-care Systems in Southeast Asia: diversity and transitions' *The Lancet* 2011; 377: 429–37
- Cutler, D. (2001) 'The Third Wave in Health Care Reform', in S. Ogura, T. Tachibanaki and D. Wise (eds) 'Aging Issues in the United States and Japan', University of Chicago Press
- Dans, A., N. Ng, C. Varghese, E. Tai, R. Firestone, R. Bonita (2011) 'The Rise of Chronic Non-Communicable Diseases in Southeast Asia: Time for Action', *The Lancet* 2011; 337: 680–89
- Deloitte Access Economics (2011) 'Medical Tourism in Australia: A scoping Study' Department of Resources, Energy and Tourism, Commonwealth of Australia, 15 August 2011
- Ehrbeck, T., C. Guevara, and P. Mango (2008) 'Mapping the Market for Medical Travel', Mckinsey & Company, May 2008
- European Observatory on Health Systems and Policies (2013) 'Health Systems in Transition series', <http://www.euro.who.int>, Accessed January 2013
- Frost & Sullivan (2011), <http://www.frost.com>, Accessed January 2013
- Government of People's Republic of China (2012), Official notifications <http://english.gov.cn>
- Griffith Hack (2010) 'Mind the Gap: Medical Technology Innovation in Australia', <http://www.griffithhack.com.au>, Accessed January 2013
- Gupta, S., B. Clements, and D. Coady (2012) 'The Challenge of Health Care Reform in Advanced and Emerging Economies' in B. Clements, D. Coady, and S. Gupta (eds) 'The Economics of Public Health care Reform in Advanced and Emerging Countries', International Monetary Fund, Washington DC
- Hairi, N, A. Bulgiba, R. Cumming, V. Naganathan, and I. Mudla (2010) 'Prevalence and Correlates of Physical Disability and Functional Limitation Among Community Dwelling Older People in Rural Malaysia, a Middle Income Country', *BMC Public Health*, 2010; 10: 492
- International Diabetes Federation (2012) 'IDF Diabetes Atlas Update 2012' <http://www.idf.org/>, Accessed January 2013
- International Insurance News (2010) 'Growth Predicted for the Thai Insurance Market' <http://www.globalsurance.com>, October 21, 2010, Accessed January 2013
- International Monetary Fund (2010) 'Macro-Fiscal Implications of Health Care Reform in Advanced and Emerging Economies', International Monetary Fund, December 2010, Washington DC
- Jenkner, E., B. Shang, and B. Clements (2012) 'Health Reform Lessons from Experiences of Emerging Economies', in B. Clements, D. Coady, and S. Gupta (eds) 'The Economics of Public Health care Reform in Advanced and Emerging Countries', International Monetary Fund, Washington DC
- Kanzler, L., and A. Ng (2012) 'The Future of Public and Private Health Care Insurance in Asia', in B. Clements, D. Coady, and S. Gupta (eds) 'The Economics of Public Healthcare Reform in Advanced and Emerging Countries', International Monetary Fund, Washington DC
- Le Deu, F., R. Parekh, F. Zhang, and G. Zhou (2012) 'Healthcare in China: Entering Uncharted Waters', Mckinsey & Company, July 2012
- Li, M. (2012) 'Challenges in Reforming the Japanese Health Care System', in B. Clements, D. Coady, and S. Gupta (eds) 'The Economics of Public Health care Reform in Advanced and Emerging Countries', International Monetary Fund, Washington DC
- Lim, S., T. Gaziano, E. Gakidou, K. Reddy, F. Farzadfar, R. Lozano, A. Rodgers (2007) 'Prevention of Cardiovascular Disease in High-risk Individuals in Low-income and Middle-income Countries: Health Effects and Costs', *The Lancet*, 370, Issue 9604, 2054–62
- Lunt, N., R. Smith, M. Exworthy, S. Green, D. Horsfall, R. Mannion, (2011) 'Medical Tourism: Treatments, Markets and Health System Implications: A Scoping Review', OECD, Paris
- Porter, M., and E. Teisberg (2006) *Redefining Health Care: Creating Value-Based Competition on Results*, Harvard Business Press
- Ministry of Health of the People's Republic of China (2012) 'White Paper on China's Medical and Health Undertakings', December 2012
- Oxley, H., and M. MacFarlan (1995) 'Health Care Reform: Controlling Spending and Increasing Efficiency', OECD Economic Studies No. 24, Paris
- Soto, M., B. Shang, and D. Coady (2012) 'New Projections of Public Health Spending, 2010-2050' in B. Clements, D. Coady, and S. Gupta (eds) 'The Economics of Public Health care Reform in Advanced and Emerging Countries', International Monetary Fund, Washington DC
- Swiss Life (2012) 'Employee Benefit Reference Manual - Country Profiles', <http://www.swisslife.com>
- Tyson, J., K. Kashiwase, M. Soto, and B. Clements (2012) 'Containing Public Health Spending: Lessons from Experiences of Advanced Economies' in B. Clements, D. Coady, and S. Gupta (eds) 'The Economics of Public Health care Reform in Advanced and Emerging Countries', International Monetary Fund, Washington DC
- UHC Forward (2013) <http://uhcforward.org>
- WHO (2013) 'Global Health Observatory Data Repository' <http://www.who.int>
- World Bank (2013), <http://data.worldbank.org>

About the author



Rafal Chomik is the author of this brief. He is a Senior Research Fellow at CEPAR and has worked as an economist at the OECD and for the British Government. His interests include tax & benefit modelling and social policy development.

Featured researchers



Elena Capatina is a Postdoctoral Fellow at CEPAR. She received a Masters and a PhD in Economics from the University of Toronto. Elena's research interests are in the fields of macroeconomics, health and labour economics.



Colette Browning is an Associate Investigator at CEPAR, a Professor at Monash University and Honorary Professor at Peking University. Her research focuses on healthy ageing and improving quality of life for older people, chronic disease self-management and consumer involvement in health care decision-making.



Pradeep Ray is an Associate Investigator at CEPAR, a Professor of Information Systems at the Australian School of Business and the Director of the Asia-Pacific ubiquitous Healthcare Research Centre (APuHC) at UNSW. He leads a number of collaborative global research projects on eHealth.



Robert Cumming is a Chief Investigator at CEPAR and a Professor of Epidemiology and Geriatric Medicine at the University of Sydney. Much of his research brings together biological, psychosocial and medical aspects of ageing. He has an international reputation for research on osteoporosis, falls and fractures.

Contact

CEPAR, Australian School of Business, Kensington Campus, The University of New South Wales, Sydney NSW 2052 | cepar@unsw.edu.au | +61 (2) 9931 9202 | www.cepar.edu.au

About CEPAR

The ARC Centre of Excellence in Population Ageing Research (CEPAR) brings together researchers, government and industry to address one of the major social challenges of this century. It aims to establish Australia as a world leader in the field of population ageing research through a unique combination of high level, cross-disciplinary expertise drawn from Economics, Psychology, Sociology, Epidemiology, Actuarial Science, and Demography.

CEPAR is one of 13 centres that commenced in 2011 under the Australian Research Council's Centres of Excellence program. It is a global research centre with international university partners, and is supported by the Australian Government, the NSW Government and industry leaders. Our mission is to produce research that will transform thinking about population ageing, inform private practice and public policy, and improve people's wellbeing throughout their lives.

We acknowledge financial support under project number CE110001029 and from our corporate and government partners. Views expressed herein are those of the authors and not necessarily those of CEPAR or its affiliated organisations.

CEPAR Partners

