

The rise of private medicine in South Asia

Amit Sengupta and colleagues describe how stagnant public investment in health in South Asia has seen a growth in private practice and may hamper efforts to enable universal health coverage in the region

Healthcare services in South Asia are characterised by low public investment, dependence on services provided by the private sector, and very high rates of out of pocket (OoP) expenses as the principal source of health financing. Only the sub-Saharan Africa region has worse public health indicators than those seen in South Asia (with the exception of Sri Lanka), such as life expectancy, malnutrition, and infant and child mortality rates.¹ South Asia is the only region in the world where health expenditure fell between 2000 and 2006.¹ In this paper we examine the evidence regarding the growth and characteristics of the private health sector in South Asia, the drivers of their sustenance and growth, and the implication of these for public health outcomes.

Current trends in private health expenditure

The majority of people in South Asia depend on private healthcare services, and this trend is accompanied by stagnant public investment in health (Table 1).²

Government expenditure on health as per cent of gross domestic product (GDP) in the region is just above 1% (with the exception of Nepal)—well below the average for low and low middle income countries, and significantly lower than the global average (4.9%). There has been a small increase in

government expenditure (as per cent of GDP) in India, a definite increase in Nepal and Pakistan, but a sharp decline in Sri Lanka.

Private health expenditure (PHE) accounts for about two thirds of total health expenditure (THE) in the region, similar to trends in low and low middle income countries but much higher than the global average (42.4%). Economic growth in the region over the last decade is the highest for all regions.³ The rapid rise in GDP in countries in the region and the stagnation in the proportion of public expenditure (only Nepal shows a notable increase) translates into an enormous increase in private expenditure on health.

OoP spending, widely acknowledged as the most regressive form of financing, accounts for well over 80% of all private expenses, indicating very low penetration of financial protection mechanisms. As a consequence, in India for example, 55 million people are pushed below the poverty line as a result of healthcare expenses.⁴ In Nepal an estimated 1 million people fall below the poverty line for similar reasons,⁵ while in Bangladesh 7% of households spend more than 25% of monthly non-food expenditure on healthcare.⁶

A significant driver of the growth of private expenditure is the private purchase of drugs. In Nepal, in the case of acute illnesses and injuries, around two thirds of OoP expenses are on drugs, and this share goes up to more than four fifths in the case of chronic illnesses.⁷ In Bangladesh nearly 62% of healthcare expenditure (a major portion of which is met by OoP expenses) is on purchasing drugs and medical consultations.⁸ In India 72% of OoP in rural areas and 68% in urban areas is accounted for by drugs.⁹

Current trends in size, structure, and growth of private sector

Private healthcare in South Asia encompasses large for-profit corporate entities, not-for-profit trusts (private and religious), general practitioners (both qualified and unqualified), chemists, and diagnostic laboratories. Table 2 gives an overview of the current size of the hospital based infrastructure in the private sector for some of the countries in the region—with the exception of Afghanistan—that have data available.

In all countries in the region, a major proportion of primary care is accessed through private practitioners, often unqualified. The organised private sector, primarily the hospital sector, is mostly located in large towns and cities as the paying clientele are concentrated in these areas. In Nepal three quarters of hospital beds are located in the Central Region where access is relatively good, compared with virtually no private hospitals in the Far Western Region.²¹ An interesting trend is emerging in India where private facilities are expanding to smaller town and cities. Currently 48% of all private hospitals and two thirds of corporate hospitals are in smaller cities.²² In India about 80% of outpatient services and 60% of inpatient services are provided by the private sector.⁴ In Nepal 55% of patients access private facilities for acute illnesses and 57% for chronic illnesses.⁵ In Bangladesh 13% of patients use government services, 27% access qualified practitioners in the private or non-governmental organisation (NGO) sectors, and 60% access unqualified private practitioners.²³ In a survey conducted in Pakistan in 2010-11, 71% of people who had consulted a health provider in the past two weeks reported going to a private facility.²⁴

KEY MESSAGES

- The majority of people in South Asia depend on private healthcare services, and this trend is accompanied by stagnant public investment in health
- The growth of private medicine in the region is a function of both active and passive measures instituted by governments
- There is an urgent need to expand public provision of healthcare and public funding of medical education
- It is necessary to curb the abuse of social health insurance mechanisms which further strengthen for-profit private care facilities
- OoP expense on drugs is the most significant driver of private expenses and needs to be addressed by public procurement and regulation of medicine prices

Table 1 | Private health expenditure (PHE) in selected countries South Asia: 2000-12

Country	Government expenditure as % of GDP 2012 (2000)	PHE as % of total health expenditure 2012 (2000)	Out of pocket expenditure as % of PHE 2012 (2000)
Bangladesh	1.1 (1.1)	68.1 (59.3)	93.0 (97.4)
India	1.2 (1.2)	69.5 (73.0)	87.2 (91.8)
Sri Lanka	1.2 (1.8)	60.9 (51.6)	83.0 (80.8)
Nepal	2.2 (1.3)	60.5 (75.4)	81.4 (91.2)
Pakistan	1.0 (0.7)	63.1 (78.3)	86.8 (81.0)
Low income	1.5 (1.3)	61.2 (62.4)	77.6 (84.7)
Low middle income	1.5 (1.3)	63.6 (66.0)	86.7 (89.1)
Upper middle income	3.4 (2.8)	43.8 (46.7)	74.2 (80.4)
Global	4.9 (4.3)	42.4 (44.5)	52.6 (52.2)

Table 2 | Private healthcare facilities in selected countries in South Asia for inpatient care

	India(2011-12) ¹⁰⁻¹²		Nepal (2014) ¹³¹⁴		Bangladesh (2013) ¹⁵¹⁶		Pakistan (2012-13) ¹⁷¹⁸		Sri Lanka(2011) ^{19 20}	
	Private	Public	Private	Public	Private	Public	Private	Public	Private	Public
Hospitals	54 004 ^a	20 306	350	97	2983	559	692	1142	155	592
Hospital beds	978 000 ^b	675 779 ^c	19 580	6944	45 485	45 853	Around 20 000	128 998	5205	70 000

^aIncludes 352 charitable hospitals and 104 corporate hospitals.

^bData for 2010.

^cData for 2014.

Sri Lanka provides a contrast with 66% reporting that they visited a public healthcare facility.²⁵

Of the estimated 1.2 million private providers in India, four out of five are run by a single person and half were located in rural areas.¹⁰ This pattern is now changing and the share of sole enterprises declined from 96% to 90% between 1980 and 2004.²⁶ In Nepal, before 1991 there were only two private hospitals but the situation has since changed. The number of public and private hospitals in Nepal has grown: from 78 and 69 respectively in 1995 to 97 and 350 in 2014.²⁷ In Bangladesh around 50% of doctors, 42% of nurses, and 65% of paramedics work exclusively in the private sector. Overall spending on hospital care in Bangladesh has increased from 17% to 27% of total healthcare expenditure, driven by increasing expenditure at private hospitals.²⁸ In Sri Lanka, private hospital provision increased by more than 120% between 1990 and 2011, accompanied by a shift in the private sector from smaller to larger (100+ bed) facilities.²⁹

There is a growing trend towards private sector participation in medical education in the region, accompanied by high costs. In India the share of seats in private medical colleges grew from 1.4% in 1950 to 52.1% in 2014.³⁰ In Nepal, 19 out of 23 medical colleges are in the private sector and a large proportion of hospital beds in private facilities are located in private medical colleges. In Bangladesh there were no medical colleges in the private sector in 1996, but by 2011 there were 44 private medical colleges.²⁸

Provision of care by private not-for-profit providers

While for-profit private facilities are currently the major providers of healthcare in the region, faith based groups and NGOs provide a large proportion of care in some parts of the region. Historically Christian missionary hospitals played a prominent role in the Indian subcontinent and in 1920 Christian institutions ran nearly half of the hospitals in the region. In 1947 there were around 900 of these hospitals in the region. The number has now dwindled to around 200.³¹ Mission hospitals still play a role in providing healthcare in India, especially in underserved areas. Currently Christian

healthcare networks manage over 3731 healthcare facilities and around 80 895 beds.³² However, they also face challenges—such as dwindling donor support from external missions and difficulty attracting personnel—that threaten their survival. Other faiths do not have a similarly strong tradition of investing in healthcare but some instances do exist. In Pakistan local NGOs providing healthcare are funded by philanthropic contributions and the Islamic Zakat (charity tax) from citizens and private companies.³³ In Bangladesh healthcare provided by NGOs plays a significant role. An estimated 4000 NGOs, including international and large national organisations, provide healthcare services.³⁴

In India the Public Charitable Trust Act 1950 was enacted to enable private entities to set up charities and the act includes a waiver for income tax. While, historically, many philanthropists invested in setting up charitable hospitals (also called trust hospitals), the act is now being misused widely by commercial hospitals, and some of the biggest private hospitals in Mumbai operate as trust hospitals.³⁵

Government policies that drive expansion of private healthcare

A number of public policies foster the growth of the private sector—several forms of input subsidies in land, electricity, import of capital goods, and technologies are available; while a wide range of clinical and non-clinical services in public facilities are being outsourced.³⁶ In India, since the liberalisation of Foreign Direct Investment (FDI) norms in the hospital sector in 2000 (100% FDI permitted under the automatic route) FDI inflow to the sector increased from \$6.93m (£5.52m; €6.39m) in 2001-02 to \$684.58m in 2013-14.³⁷ The promotion of medical tourism, particularly in India, is also a driver in the growth of large corporate hospitals. Since 2006, the government has issued medical visas to patients and the accompanying spouse. In 2009, the Ministry of Tourism extended its market development assistance scheme to cover hospitals certified by Joint Commission International, an international organisation that accredits healthcare facilities.³⁸

Tax funded health insurance schemes have become a recent mechanism for

transferring public funds to strengthen private facilities. India introduced several public funded insurance schemes about ten years ago³⁹ but coverage and benefits are weak. In 2014 only 13% of rural and 12% of urban households were covered. Coverage extends only to selected packages for hospital based care and an assessment of the oldest public funded scheme shows that 25% of the state's health budget dedicated to the scheme addressed only 2% of the burden of disease. These schemes involve outsourcing a major proportion of care to private facilities.⁴⁰ There have been several reports of unscrupulous private facilities milking these insurance schemes by conducting unnecessary procedures. Horrific incidents have been reported, for example, of unnecessary hysterectomies performed on young women.^{41 42}

Notwithstanding such reports, other countries in the region are starting to follow suit. In 2015 the government of Nepal signalled the initiation of social health insurance involving public funding and mixed provision of care, and the first phase of the scheme is to be piloted in three districts.⁴⁷ In Pakistan, under the prime minister's National Health Insurance Programme, which covers families earning less than PKR200 (£1.5; €1.76; \$1.9) per day, soft loans of PKR5-10m will be provided to empanelled private hospitals.⁴³

Instances of unethical behaviour by providers, given increasing private sector involvement in public funded insurance schemes, is a known risk in the absence of effective measures to regulate private facilities. The Indian parliament adopted the Clinical Establishments Act in 2010. It was designed to regulate standards of care in all facilities but its implementation has been virtually stalled in parts of the country because of lobbying by private physicians. Recently, the government of Maharashtra was admonished by the state's High Court for non-implementation of the Act.⁴⁴ Pakistan, Bangladesh, and Nepal report that existing regulations are ineffective.^{45 47} In Sri Lanka the Private Medical Institutions (Registration) Act was adopted in 2006 but implementation of its provisions remains weak.⁴⁶

Private practice by doctors employed in public services is rampant in the region and acts as a conduit for the transfer of patients

to private facilities. In Pakistan, though publicly employed doctors receive non-practising allowances, a significant number use their work in the public sector to boost their private practice.⁴⁸ In Bangladesh a substantial number of government doctors practise privately after office hours.³¹ In Sri Lanka the number of government doctors working part time in private hospitals is reported as 2100.²⁰ In India rules regarding private practice by government doctors vary—some states have completely banned such practices while others allow private practice during “off duty hours.”

Recommendations

The growth of private medicine in the region is a function of both active and passive measures instituted by governments. Poor public funding has led to the vacuum being filled by a large and unregulated private sector. The growth is also driven by concessions and subsidies provided to set up private facilities, public funded insurance where care is largely outsourced, and weak efforts to regulate private providers. The absence of a robust public sector also acts as a barrier to regulation, as private facilities do not have to compete with a well functioning public system. The end result is a segmentation of healthcare services into a poorly resourced public system for the poor, and a growing private system for the rich. The rich, while opting out of the public system, also draw resources, political clout, and accountability away from it. Given that for-profit commercial enterprises target the hospital sector, resources—both financial and human—have a tendency to shift towards tertiary care at the expense of primary care.

Several characteristics of private provision have a negative impact on the quality of care. For example, unnecessary interventions reduce the quality, efficiency, and accessibility of care, and increase OoP expenditure.⁴⁹ The private sector, furthermore, absorbs a disproportionate share of the health workforce, and is inaccessible to most of the population.⁴⁹

Two other points merit attention. Private procurement of drugs is the single largest component of high OoP healthcare expenses, signifying poor access to public facilities. Secondly the rapid commercialisation of medical education draws young professionals into the private commercial sector, as they seek to recover the high cost of private medical education.

Goal 3 of the Sustainable Development Goals is a call to “Ensure healthy lives and promote wellbeing for all at all ages.” More specifically Goal 3.8 calls upon countries to “Achieve universal health coverage, including financial risk protection, access to

quality essential healthcare services, and access to safe, effective, quality, and affordable essential medicines and vaccines for all.” It is unlikely that the unregulated and rapid growth of private medicine in South Asia provides an enabling environment to meet these goals.

South Asian countries need to take action if they are to achieve universal health coverage that includes financial risk protection. We recommend the following steps as priority areas for policy makers:

- Progressively increase public spending on health and expand the role of public services in health systems
- Reduce the burden of out of pocket expenses through the regulation of private sector provision and through direct public provision of comprehensive healthcare services at all levels of care
- Address the abuse of social health insurance mechanisms for the growth of for-profit private care facilities
- Increase public investment in medical education to support the growth of public services
- Regulate drug prices effectively and ensure drug availability in public facilities to reduce the impact of purchase.

If the growth of the private sector continues unregulated, the outcomes will include healthcare funded through OoP expenses in the absence of effective financial protection measures, uneven and poor quality care in the absence of the regulation of private facilities, and lack of access to healthcare services for a large proportion of the population.

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- 1 Haté V, Gannon S. Public health in South Asia: a report of the CSIS Global Health Policy Center. 2010. https://csis-prod.s3.amazonaws.com/s3fs-public/legacy_files/files/publication/100715_Hate_PublicHealthSouthAsia_Web.pdf.
- 2 World Health Organization. World health statistics 2015. 2015. www.who.int/gho/publications/world_health_statistics/EN_WHS2015_Part2.pdf?ua=1.
- 3 World Bank. South Asia remains world's fastest growing region, but should be vigilant to fading tailwinds. 2016. www.worldbank.org/en/news/press-release/2016/04/09/south-asia-fastest-growing-region-world-vigilant-fading-tailwinds.

- 4 Ministry of Health and Family Welfare. National health policy 2015 draft. 2014. www.mohfw.nic.in/showfile.php?lid=3014.
- 5 Government of Nepal. Nepal living standard survey 2010-11, NLSS third. 2012. <http://cbs.gov.np/nada/index.php/catalog/37>.
- 6 Rannan-Eliya RP, Kasthuri G, Begum T, Rahman A, Hossain N, Anuranga C. Impact of maternal and child health private expenditure on poverty and inequity. 2012. www.adb.org/sites/default/files/publication/30160/impact-mnch-private-expenditure-poverty-inequity-bangladesh-tr-b.pdf.
- 7 Overview of public-private mix in healthcare service delivery in Nepal. 2010. http://www.rti.org/sites/default/files/resources/42_nepal_overviewpublicprivate.pdf.
- 8 Huq NM, Al-Amin AQ, Howlader SR, Kabir MA. Paying out of pocket for healthcare in Bangladesh: a burden on poor? *Iran J Public Health* 2015;44:1024-5.
- 9 Singh J. Medicine costs form bulk of out-of-pocket health expenses: NSSO. 2016. www.livemint.com/Politics/30z97MDZDMewkjh5fM5D6l/Medicine-costs-form-bulk-of-outofpocket-health-expenses-N.html.
- 10 National Sample Survey Organisation. National sample survey 67th round. 2013. <http://mail.mospi.gov.in/index.php/home>.
- 11 Gudwani A, Mitra P, Puri A, Vaidya M. India healthcare: inspiring possibilities, challenging journey. 2012. www.mckinsey.com/global-themes/india/india-healthcare-inspiring-possibilities-challenging-journey.
- 12 Central Bureau of Health Intelligence, Ministry of Health and Family Welfare. National health profile. 2015. www.cbhidghs.nic.in/writereaddata/mainlinkFile/NHP-2015.pdf.
- 13 Government of Nepal. A report on census of private hospitals in Nepal 2013. 2014. <http://cbs.gov.np/image/data/2015/A%20Report%20on%20Census%20of%20Private%20Hospitals%20in%20Nepal%202013.pdf>.
- 14 Government of Nepal. Department of health services: factsheet. <http://dohs.gov.np/>.
- 15 National Institute of Population Research and Training, Associates for Community and Population Research, ICF International. Bangladesh health facility survey 2014. 2016. <https://dhsprogram.com/pubs/pdf/SPA23/SPA23.pdf>.
- 16 Ahmed SM, Alam B, Anwar I, et al. Bangladesh health system review. 2015. www.wpro.who.int/asia_pacific_observatory/hits/series/bgd_health_system_review.pdf.
- 17 Ather F, Sherin A. Health system financing in Pakistan: reviewing resources and opportunities. *Khyber Medical University Journal* 6(2) 2014. www.kmu.edu.pk/article/view/13994.
- 18 Pakistan Bureau of Statistics. Hospitals/dispensaries and beds by province. 2012. www.pbs.gov.pk/sites/default/files/tables/Health1%28Website%29.pdf.
- 19 Govindaraj R, Navaratne K, Cavagnero E, Seshadri SR. Healthcare in Sri Lanka: what can the private health sector offer? 2014. <http://documents.worldbank.org/curated/en/423511468307190661/pdf/899540WPOBox380thOCareOinOriO Lanka.pdf>.
- 20 IPS Research Team. Health statistics of private, co-operative, and estate hospitals 2014. 2016. <http://www.ips.lk/index.php/latest-publications/20-latest-publicationss/1224-health-statistics-census-of-private-co-operative-and-estate-hospitals-2013>.
- 21 Ministry of Health and Population, Government of Nepal. Overview of public-private mix in healthcare service delivery in Nepal. 2010. http://www.rti.org/sites/default/files/resources/42_nepal_overviewpublicprivate.pdf.
- 22 Mukhopadhyay I, Selvaraj S, Sharma S, Datta P. Changing landscape of private healthcare providers in India. Paper presented at International Public Policy Association Conference. Milan. 2015 July.
- 23 Asia Pacific Observatory on Public Health Systems and Policies. Bangladesh health system review. 2015. www.wpro.who.int/asia_pacific_observatory/hits/series/bgd_health_system_review.pdf.
- 24 Nishtar S, Boerma T, Amjad S, et al. Pakistan's health system: performance and prospects after the 18th constitutional amendment. *Lancet* 2013;381:2193-206.
- 25 Weerasinghe MC, Fernando DN. Access to care in a plural health system. *Journal of the College of Community Physicians of Sri Lanka* 2009;14:2009.
- 26 Ministry of Health and Family Welfare, Government of India. Report of the national commission of macroeconomics and health. 2005. www.who.int/macrohealth/action/Report%20of%20the%20National%20Commission.pdf.

- 27 Dolma Development Fund. A report on market data for private sector investments in Nepal healthcare sector. 2014. www.dolmainpact.com/pdf/DIF%20I-%20Healthcare%20Market%20Report_Final_1-10-2014.pdf.
- 28 Ministry of the People's Republic of Bangladesh, Ministry of Health and Family Welfare. Health bulletin 2013. www.dghs.gov.bd/images/docs/Other_Publication/HB%202013%20final%20-%20Full%20version%201March14.pdf.
- 29 Institute for Health Policy. Private health sector review 2012. 2015. www.ihp.lk/publications/docs/PHSR2012.pdf.
- 30 Choudhury PK. Role of private sector in medical education and human resource development for health in India. 2014. <http://isid.org.in/pdf/WP169.pdf>.
- 31 Gokavi S. Medical missions in India today, All People's Church and World Outreach. www.apcwo.org/newsite/resources/missions/MedicalMissionsInIndiaToday-DrSunilGokavi-EHA.pdf.
- 32 Cherian A, Abraham M, Thomas T, et al. Leveraging the untapped potential of non-state players for universal health coverage: India Infrastructure Report 2013-14. 2014. www.idfc.com/pdf/report/2013-14/Chapter-08.pdf.
- 33 Alliance for Health Policy and Systems Research. Primary care systems profiles and performance, Pakistan case study 2016. www.who.int/alliance-hpsr/projects/AHPSR-Pakistan-061016.pdf.
- 34 Bangladesh Health Facility Survey 2014, (2016) National Institute of Population Research and Training (NIPORT), Ministry of Health and Family Welfare, Dhaka, Bangladesh. P 6 http://www.aidsdatahub.org/sites/default/files/publication/Bangladesh_health_facility_survey_2014.pdf.
- 35 Duggal R. The uncharitable trust hospitals, economic and political weekly. 2012 www.academia.edu/21084236/The_Uncharitable_Trust_Hospitals?auto=download.
- 36 Sen K. Health reforms and developing countries: a critique. In: Qadeer I, Sen, K, Nayar KR, eds. Public health and poverty of reforms: a South Asian perspective. Sage, 2011.
- 37 Hooda SK. Foreign investment inflow into Indian hospital sector: status and trends. 2015. <http://isid.org.in/pdf/WP181.pdf>.
- 38 Sengupta A. Medical tourism: reverse subsidy for the elite. *Signs (Chic)* 2011;36:312-9. doi:10.1086/655910.
- 39 Selvaraj S, Karan A, Mukhopadhyay I. *Publicly-Financed Health Insurance Schemes in India: How effective are they in providing Financial Risk Protection? Social Development Report, 2014*. Council For Social Development, 2014.
- 40 Purendra Prasad N, Raghavendra P. Healthcare models in the era of medical neo-liberalism: A study of Aarogyasri in Andhra Pradesh. 2012. http://hsrii.org/wp-content/uploads/2014/07/Healthcare_Models_in_the_Era_of_Medical_Neoliberalism.pdf.
- 41 Rao M. Bihar women who lost their wombs to needless surgeries suffer while doctors thrive. 2017. <https://scroll.in/pulse/816202/bihar-women-who-lost-their-wombs-to-needless-surgeries-suffer-while-doctors-thrive>.
- 42 Jaiswal A. Uterus scam: Chhattisgarh doctors get away with one year suspension. 2013. <http://timesofindia.indiatimes.com/city/raipur/Uterus-scam-Chhattisgarh-doctors-get-away-with-one-yearsuspension/articleshow/20748235.cms>.
- 43 Mishra SR. National health insurance policy in Nepal: challenges for implementation. *Glob Health Action* 2015;8:28763doi:10.3402/gha.v8.28763.
- 44 Human Rights Commission of Pakistan. State of human rights in 2015. 2015 <http://hrqp-web.org/hrqpweb/wp-content/uploads/2016/04/Health.pdf>.
- 45 Plumber M. Bombay High Court asks Maharashtra for steps taken to curb illegal abortion. 2017. www.dnaindia.com/health/report-bombay-high-court-asks-maharashtra-for-steps-taken-to-curb-illegal-abortion-2348263.
- 46 Asia Pacific Observatory on Health Systems and Policies. Bangladesh Health System Review. 2015. www.wpro.who.int/asia_pacific_observatory/hits/series/bgd_health_system_review.pdf.
- 47 Fernando M. Patients die despite stringent laws. 2013. <http://archives.sundayobserver.lk/2013/02/24/fea11.asp>.
- 48 Transparency Fund. NWFP Health Reform Unit and Heartfile, Pakistan's health sector: does corruption lurk? 2007. www.heartfile.org/pdf/health-sector-corruption-pakistan.pdf.
- 49 Morgan R, Ensor T, Waters H. Performance of private sector health care: implications for universal health coverage. *Lancet* 2016;388:606-12. doi:10.1016/S0140-6736(16)00343-3.

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