SBP StaffNotes 01/18

State of Health Sector in Pakistan

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I. Introduction

Growth literature recognizes well the role of human capital in the development and expansion of an economy. Education and health conditions are the main parameters against which the status of human capital of any economy is gauged. It is well established that healthy people may not only work more effectively and efficiently, but also dedicate more time to industrious activities.

Numerous studies validate the significant positive relationship between health indicators and economic growth. Better health indicators, especially in childhood, such as good nutrition for infants and toddler and less exposure to infectious disease may improve their productivity in future and develop a strong foundation for sustainable economic growth (Schultz, 2010 and Currie, 2009). Whereas, poor state of health in the economies, mostly owing to various infectious diseases may hurt economic growth. Exposure to diseases may result into pre mature deaths and effect labor productivity. This can have adverse effects on economic growth; even wealthy nations can be impacted severely by such state of health indicators and may take much longer to observe strong and healthy progress (Chakraborty et al., 2010). Goenka and Liu (2010; 2013), by studying endogenous growth model and incorporating infectious diseases such as influenza, meningitis, dengue, strep throat etc. concluded that unhealthy workers affect the quality of work hence adversely affecting the growth of the economy.

Some studies have come up with relatively weak relationship between health indicators and economic growth in contrast to strong and significant relationship as discussed above. Ashraf et al. (2008) argued that better health conditions may improve worker's productivity and may affect the GDP positively in the long run, however, rise in the population amid improved health indicators in the developing countries may put negative economic effects as well. Acemoglu and Johnson (2007) estimated impact of life expectancy on economic performance for 75 countries. He found almost no evidence of positive effects of health indicators on GDP supporting neo classical growth theory with the argument of decline in income per capita due to rising population amid improved health conditions. However, he pointed out that his results may not be true for current world scenarios as his study mainly analyzed the international epidemiological transition around 1940s.

In the context of Pakistan, Ali et al. (2012) estimated strong positive relationship of human capital (education enrolment, decline in infant mortality rate, and physical capital) with economic growth. He estimated 2.47 percentage point decline in GDP as a result of 1 percent increase in infant mortality rate. Similarly, Akram et al. (2008) also investigated long-term positive impacts of health indicators (life expectancy, infant mortality rate, health expenditure and population per bed) on economic growth.

These lessons are particularly relevant for developing countries while devising policy options for sustainable economic growth and development as public spending on education and health is relatively low in developing and less developed countries.

Pakistan is a developing economy and its real GDP growth is gaining momentum. Recent years have witnessed highest growth over the last decades as highlighted by many flagship publications on Pakistan economy. China-Pakistan Economic Corridor (CPEC), in this context, is gaining much popularity in terms of providing immense economic opportunities.

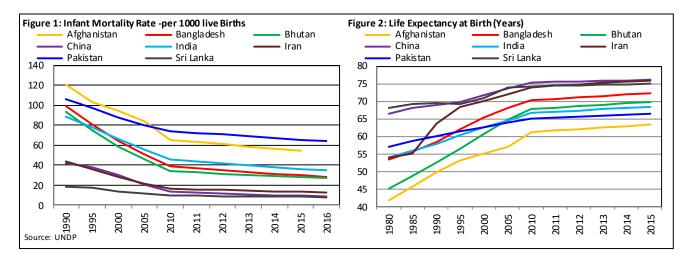
CPEC is likely to contribute significantly in the economic development and provide avenues to various sectors of economy to accelerate economic growth. Whereas, on the other hand, state of country's health is being questioned at various forums. Recently, Pakistan has been ranked as the riskiest country to be born as per United Nations recent report. Fundamental health indicators have been on a positive path for the past few years. However, despite this advancement, the pace of progress is far low, when evaluated with the improvement recorded by regional countries. State of education sector, on the other hand, is also poor. Education sector is facing various hurdles including underinvestment, capacity deficient public sector together with costly and unregulated private sector. Moreover, the aspect of quality education is also missing for long-term gains. Given the adverse state of human capital, Pakistan's ranking in Human Development Index has also dropped from 119th to 147th.

In light of the established theories on positive impact of human capital on economic growth and development, this note aims to analyze the state of health sector in Pakistan, both in terms of basic health indicators and health infrastructure, for sustainable economic growth in Pakistan as mentioned earlier.

II. State of Health in Pakistan

a) Performance of Health Indicators in Pakistan

Given the absolute importance of health indicators, such as positive impacts of better childhood health and adverse effects of infectious diseases and its linkages to economic welfare, this section briefly analyzes the performance of health indicator, particularly at early ages and childhood. Since improved health conditions of a child turns him into a part of potential productive labor force later in his life and contributes positively to economic affairs (Schultz, 2010).



While discussing health indicators in the given perspective, Child mortality, Immunization and Nutrition are the main areas we find in literature around which the focus of research lies mostly.

In reference to child mortality and life expectancy conditions, Pakistan has been experiencing one of the lowest life expectancy ratios whereas neonatal, infant and under-5 mortality rates are somewhat elevated in the region due to certain health issues like diarrhea, malnutrition, acute respiratory illness etc. For instance:

- In terms of *infant deaths per 1,000 births*, Pakistan has also recorded steady progress, but it continues to lag far behind the levels recorded by other regional countries. From 1990 to 2013, the infant mortality rate dropped from 106.1 to 69.0 for Pakistan (**Figure 1**) whereas for *under-5 mortality rate (per 1000 live birth)*, Pakistan lagged far behind countries like Bangladesh and Nepal, which managed to reduce their under-5 mortality during 1990-2015; in Pakistan's case, the rate dropped to 86 in 2013 from 138 in 1990.
- In terms of *newborn mortality* rates, 46 babies died before the end of their first month for every 1,000 babies born (2016); labeling Pakistan the most risky country for newborns, ahead of even sub Saharan African countries and Afghanistan.³
- In terms of *life expectancy at birth*, Pakistan performed reasonably well in the context of individual progress. From 1990 to 2014, average life expectancy in Pakistan increased by 6.1 years; this was well above the increase recorded by countries like Malaysia, Indonesia, Sri Lanka, Philippines, Saudi Arabia, Thailand and many other countries. However, the effect dampens in comparison with improvements recorded by India, Iran, China, Bangladesh and other neighbor countries (**Figure 2**).

In reference to Immunization Indicators, Pakistan is being recognized as one of the few remaining countries with widespread polio. In terms of *Infants Lacking Immunization*, the status of Pakistan is quiet alarming given the effects of infectious diseases on economic growth in literature. Number of infants lacking basic immunization is not only far below than other regional countries but also deteriorated over the years (**Table 1**). The immunization is means to control and eliminate life-threatening infectious diseases. Low immunization is exposing children to a series of health risks and deaths, which may have serious implications on their productivity.

	2011		2	2012		013	2014		
	*DTP (% of Measles (% of		DTP (% of Measles (%		DTP (% of	Measles (% of	DTP (% of	Measles (%	
	one-year-	one-year-	one-year-	of one-year-	one-year-	one-year-	one-year-	of one-year-	
	olds)	olds)	olds)	olds) olds)		olds) olds)		olds)	
Afghanistan	22	36	22	41	20	40	18	34	
Bangladesh	2	11	3	11	3	11	3	11	
Bhutan	2	5	3	5	3	6	1	3	
China	1	1	1	1	1	1	1	1	
India	11	16	11	17	10	17	10	17	
Iran	1	1	1	2	2	2	1	1	
Pakistan	16	37	21	39	21	37	21	37	
Sri Lanka	1	1	1	1	1	1	1	1	

Table 1: Infants Lacking Immunization

DPT refers to a combination vaccines against diphtheria, pertussis, and tetanus. Source: Human Development Indicators

³ UNICEF (2018)-Every Child Alive: The Urgent Need to end Newborn Deaths

In terms of nutrition and *child growth* indictors, Pakistan's performance over the decades has not remained up to the mark as proportion of stunned and wasted children are quite high (**Table 2**). Rather persistent severity of malnutrition calls for an urgent focus of the policy makers. Malnutrition is associated with poverty, with people not having enough income to buy nutritious food.

Stunting (low height for age) in children is a result of consumption lacking essential nutrients for a long time and exposure to frequent infections. They can effect a child's performance adversely such as delayed motor development, impaired cognitive function and poor school performance. Whereas wasting (low weight for height) is mainly caused by critical food shortage and exposure to disease. There are 24 developing countries with wasting rates of 10 percent or more and Pakistan is no exception⁴. Though have improved since 1991 but still is above 10 percent.

Table 2. child di owth indicators- under	nve years	o or age (r	akistanj		
	1991	2001	2011	2012	Severity of Malnutrition by Prevalence Rate- Cutoff***
Proportion of Stunned Children*	54.5	41.5	43	45	Very High
Proportion of Wasted Children**	12.5	14.2	14.8	10.5	High

* Low height for age, ** Low weight for height

Table 2. Child Growth Indicators, under five years of age (Pakistan)

*** Cutoff for Stunted Children (<20=Low, between 20 to 29=Medium, between 30-39=high, >40=very high),

Cutoff for Wasted Children (<5=Low, between 5 to 9=Medium, between 10-14=high, >15=very high

Source: World Health Organization

United Nation General Assembly implemented the Millennium Declaration in 2000 by beginning a global partnership of countries and development partners committed to eight voluntary development goals with an objective to improve and keep track of social indicators. Three⁵ out of eight Millennium Development Goals (MDGs-2000-2015), recently successor of which is termed as "Sustainable Development Goals" (SDGs- 2015-2030) were directly catering the aspect of health improvement. Unfortunately, Pakistan missed most of the targets set under MDGs (**Appendix: Table A**).

Unsatisfactory performance for most of the targets may be attributed to suboptimal allocation of budget by government to health sector, internal and external economic and non-economic challenges. Challenges include natural catastrophes, institutional, administrative and political changes, weak commitments to economic reforms, lack of capacity and willingness to carry out large-scale projects and fading commitments by the development partners due to factors like global recession and delayed ownership of MDG agenda at provincial and federal level. The impact of stated challenges resulted in non-achievement of many of the goals.

In short, despite improvements in the basic health indicators of child mortality and nutrition over time, the state of health is very bleak. The rising population coupled with alarming health indicators especially in the case of children health outcomes, is a source of great concern and is an indication of lack of clear and long term vision in public health policies.

⁴ UNICEF (2007)-Progress for Children

⁵ 1) Reducing Child Mortality, 2) Improving Maternal Health 3) Combating HIV/AIDS, Malaria and other diseases

b) State of Health Infrastructure in Pakistan

Provision of health services depend on conditions and availability of basic health infrastructure (Health establishment and health personnel). Therefore, state of health infrastructure is of great importance especially in connection to growing population.

There are various indicators of health infrastructure such as number of hospitals, basic health units (BHUs), dispensaries, no of beds, health personnel etc. presenting different aspect of infrastructure scenario. Practically different indicators present different dynamics. Sometimes, few indicators present positive developments whereas some contain opposite information. In such scenarios, it is sometimes difficult to describe the overall situation and to reach conclusion.

To tackle such issues, use of indices is recommended as they are constructed to encapsulate multiple aspects of the issue. By doing so, such indices can be used for decision making, particularly measuring change over time or making comparison across regions (Vincent 2004).

Index results are much more vulnerable to no of variables included to form an index and their respective weights. In this section, index has been created for both health establishment and personnel. For that purpose, all variables available

(Economic Survey) under the both heads have been used. However, arbitrary weights have been assigned, as we were interested in the trend of the growth rate, which is insensitive to choice of weights.

Health Establishments: The number of *Basic Health Units (BHUs) and dispensaries* in the country increased significantly in number (**Appendix: Figure A**). However, the extent of services of BHUs is very restricted as it serves approximately 1,000 people, whereas each Rural Health Centre (RHC) provides primary health to a population of 25,000-50,000 people. Thus, despite this major rise in the number of BHUs, the outreach of health services in terms of number of people remains low. Apart from health establishment units, the ratio of population per bed remained almost constant over the years. On the other hand, for overall health establishment scenario, growth in health establishment index⁶ is exhibiting declining trend (**Figure 3**).

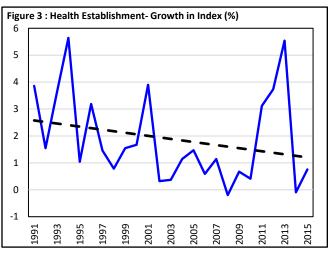


Table 3: Nurses and Midwives

(per 1,000 people)	-	
Country	2010	2013
Bhutan	0.3	1
China	1.5	1.9
India	1.7	2
Iran	1.4	1.5
Brazil	7.3	7.6
Singapore	6.4	5.8
Spain	5.9	5.7
South Africa	4.8	5.1
Vietnam	1	1.2
Kenya	0.8	0.9
Pakistan	0.6	0.6

Source: World Development Indicators

⁶ Health establishment Index has been created by assigning 30 percent to Hospitals and 10 percent each to rest of the seven indicators i.e. Dispensaries, BHUs, Maternity and Child Health Centers, Rural Health Centers, TB Centers, total Beds.

Another concerning fact about the public sector quality health establishments is that since 1985 no major public sector as well as private sector general hospital has been established (**Appendix : Table B**) whereas population has almost tripled since 1980s⁷.

In terms of public provision for medical education, only 40 percent of the total medical colleges in the country are registered as public institutions (**Appendix: Table C**).

According to Urban Citizen's Perception Survey (2016) by Social Policy and Development Center (SPDC), investigating quality aspect of public sector, highest number of non-visitors to government hospital belonged to Karachi particularly because of unsatisfactory doctor's expertise and preference to avail private medical facilities.

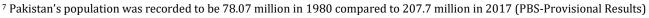
Health Personnel: In terms of Health Staff, Pakistan performed reasonably well as their availability increased sharply after 1980s. Indicators of population per dentist and per doctor have improved. However, population per nurse did not show much improvement (**Appendix: Table B**). Rather Nurses and Midwives per 1000 people remained low when compared to other countries (**Table 3**). Whereas, on the other hand, growth in health personnel index, which has been created by assigning equal weights between registered doctors, registered dentists, registered nurses, registered midwives, registered lady health visitors, is declining over time (**Figure 4**).

Apart from supply of health personnel, Pakistan is experiencing a great level of intellectual brain drain since mid-2000s⁸ (**Figure 5**).

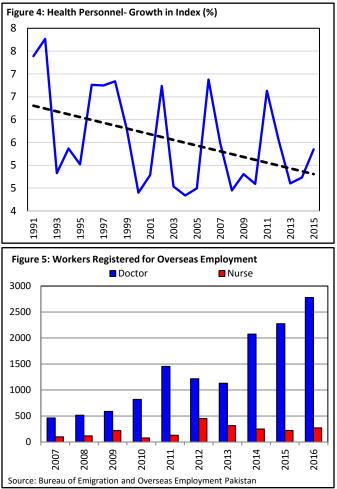
Unsatisfactory remuneration structure and lack of opportunities for health workforce is the major cause of brain drain.

Given the very low ratio of nurses to patients,

declining growth in health workers and significant brain drain along with rising population, serious policy interventions are required for short to medium term corrections.

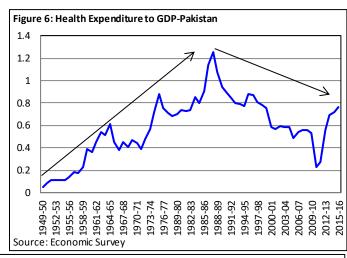


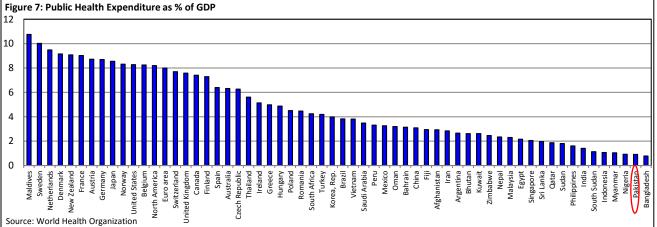
⁸ Tahir et al. (2011) recognized poor salary structure and fewer opportunities for specialization as main causes of brain drain.



c) Public Spending on Health Sector in Pakistan

Since health expenditure is considered as a public good as it adds to the capacity of the economy, many developed economies allocate huge budget for universal medical coverage and others look for measures to improve coverage. However, despite a positive link between economic development and a healthy society, the health sector still gets low priority in the public policies and allocation decisions of the investment funds in Pakistan. In particular, public sector health expenditures as a percentage of GDP have not only remained





immensely low but have also been falling consistently since 1990s (**Figure 6**). Not only the ratio has been declining, Pakistan fell far lower than health related spending in many developing countries (**Figure 7**). Ever rising population and limited budgetary resources are considered principal factors behind these unimpressive statistics.

The prevailing inefficiency and miss utilization of already constraint resources, coupled with alarming health indicators especially in the case of children health outcomes, is a source of great concern.

In addition, healthcare spending in provinces is comprised of developmental and non-developmental activities. An analysis of provincial budgets for the last two years reveals that more focus has been given to current expenditures. More worryingly, the trend has not only been observed for past years, but the same has been continued for the coming year as well (**Table 4**).

Analysis of the provinces reveals that the ratio of developmental expenditure to total public health expenditure is lowest in the case of Sindh, whereas it has been observed to be highest in the KPK.

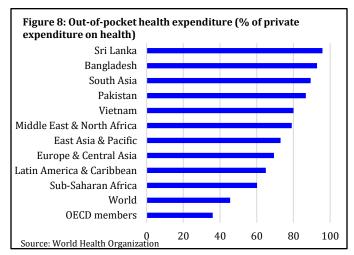
Such biases towards current expenditures and less focus on developmental expenditures on behalf of provinces are adding further misery to the overall health scenario. Furthermore, the provinces have been largely unable to utilize the funds that they have already allocated for health-related schemes due to various issues like delays in the decision making process, complex regulations for appraisal of projects, contractor's complaints for timely payments.

Apart from dismal scenario of public sector health provision, allied health services has been also remarked negatively as per Social Policy and Development Centre survey 2015 (**Appendix: Table D**). Highest negative notes are observed for provision of medicines and supplies by public clinics and hospitals followed by long queues and length of patient waiting time for the doctors. Behavior of medical staff and physical infrastructure were also commented unsatisfactory for public sector medical services.

Table 4: Public Expenditure on Health Sector (billion Rs) FY15 FY16 FY17 Punjab Current 45 61 70 Development 21 33 32

Punjab	Current	45	61	70
Pulljad	Development	21	33	32
Sindh	Current	40	54	62
Siliuli	Development	8	14	15
КРК	Current	24	17	20
лгл	Development	10	11	17
Baluchistan	Current	14	15	n.a
Dalucilistali	Development	4	4	n.a

Source: Provincial Budget Documents



Moreover, inadequate and unsatisfactory provision of public health services has invited highly costly private sector to fill in the large supply and demand gap. Doctor's fee has been constantly on rising trajectory (**Appendix: Figure D**). Costly private sector is keeping Pakistan amongst the top countries having highest percentage of Out-of-Pocket expenditures (direct expenses by the individuals on health related services), constituting around 87 percent of private health expenditures (**Figure 8**). The high cost of private sector health services is giving opportunity of satisfactory healthcare services only for the fortunate ones who can afford it whereas exposing rest of the population to unsatisfactory public sector health services.

III. Concluding Remarks

In short, the output-based health indicators have shown poor performance in comparison with many other developing countries. There have been improvements in some indicators, such as the adult literacy rate and infant mortality, but the rate of growth has remained passive and quite low as compared to the fast-growing developing countries.

In terms of health infrastructure, the index for health establishment and health personal are showing declining trend in growth whereas the population growth has been rising. Similarly, no major hospital has been established since 1990s.

With regard to public health expenditure, the average expenditure on health, since 1949-50, remained around 0.6 percent of the GDP. Whereas, allocation for developmental expenditures has always been low as compared to current expenditures and within the developmental expenditures, the utilization of the budget is geared towards enhancement of physical infrastructure only. Thus, showing that government policies seem to lack the competence to address the issues regarding quality of health facilities and capacity building.

Policy makers' entire focus on the CPEC related activities, provision of improved infrastructure will boost the growth momentum helping in achieving target growth rates in the short term. However, going forward, the goal of economic development may not be achieved if the state of neglected human capital prevails and no attention is given to training Pakistani talent for skills and innovations. In the light of growing consensus on the significant positive effect of healthy human capital on economic growth and development, most neglected areas of human capital (weak public education and health system) may provide hindrances to persistent economic growth in the economy.

Health statistics in Pakistan show serious gaps in public service delivery. A similar pattern of below the mark governance was also highlighted in our previous note on the education sector titled "Quality and Effectiveness of Public Spending on Education in Pakistan", which shared missing aspects and prerequisites of long-term gains in terms of capacity building of human resources. Similarly, multiple layers of health sector, stemming from assisting staff to skilled staff to highly skilled professionals requires solid reforms. There is a dire need to explore the array of opportunities, which can benefit the sector many folds, once adequate attention, and resources are allocated.

It is imperative that policy makers may prioritize their focus towards adequate and quality provisioning of public education and health services in order to build a solid foundation for long-term economic growth. As highlighted by Brempong and Wilson (2004), "government is relatively inefficient in the provision of education and health sectors. This means that higher allocation of budget to a specific sector not necessarily will bring improvement in social outcome, unless specific measures are implemented to correct the underlying inefficiency in spending".

In order to have a meaningful outcome in terms of comparable parameters, priority should be to follow international best practices. There is no quick fix that can be obtained by spending money, bringing foreign aid, investing in infrastructure etc., if standards in human capital are not enhanced and maintained at that level.

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Appendix

Table A: MDGs (covering Health Sector)	Latest		
	National		
	Value	Target	Status
Goal 4: Reduce child mortality Under 5 mortality rate (deaths per 1,000 live births)	85.5	52	Missed
Infant mortality rate (deaths per 1,000 live births)	66	40	Missed
Proportion of fully immunized children 12-23 months	82	>90	Missed
Proportion of under 1 year children immunized against measles	83	>90	Missed
Proportion of children under 5 who suffered from diarrhea in the last 30 days (percent)	9	<10	Achieved
Lady health worker's coverage (percent of target population)	83	100	Missed
Goal 5: Improve maternal health			
Maternal mortality ratio	170	140	Achieved
Proportion of births attended by skilled birth attendants	58	>90	Missed
Contraceptive prevalence rate	35.4	55	Missed
Total fertility rate	3.8	2.1	Missed
Proportion of women 15-49 who had given birth during last 3 years and made at least one antenatal consultation	73	100	Missed
Goal 6: Combat HIV/AIDS, malaria and other diseases			
HIV prevalence among 15-49 year old pregnant women	0.041	Baseline reduced by 50%	Achieved
HIV prevalence among vulnerable groups	IDU=37.4 FSW=0.8 MSW=3.1 HSW=7.3	Baseline reduced by 50%	Missed
Proportion of population in malaria risk areas using effective prevention and treatment	40	75	Missed
Incidence of TB/100,000	275	45	Missed
TB cases detected and cured under DOTS	91	85	Achieved

Source: Pakistan MDG Progress Report 2013, Ministry of Planning , 2015-16 Annual Report The State of Pakistan's Economy, SBP

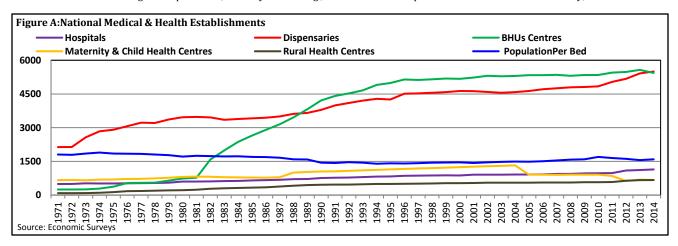


Table B1: Public Sector Hospitals

				Year of	No of
	Hospital	Nature	Location	Establishment	Beds
1	Pakistan Institute of Medical Sciences	public	Islamabad	1985	947*
2	PNS Shifa	public	Karachi	1956	700
3	Military Hospital Rawalpindi	Military	Rawalpindi	1857	>1200
4	Combined Military Hospital	Military	Rawalpindi	NA	>1000
5	Lahore General Hospital	Public	Lahore	1958	1300
6	Jinnah Hospital Lahore	Public	Lahore	1996	NA
7	Civil Hospital Karachi	Public	Karachi	1898	1900
8	DHG Hospital Mirpur	Public	Mirpur-Azad Kashmir	1981	300
9	Nasir Hussain Shaheed Hospital	Public	Karachi	2010	400
10	Abbasis Shaheed Hospital	Public	Karachi	1974	850
11	Shalimar Hospital	Public	Lahore	1982	350
12	DHQ Hospital Faisalabad	Public	Faisalabad	NA	600

*The institute includes three semi-autonomous hospitals including the Islamabad Hospital (IH) which is a 592-bed hospital, the 230 Bedded Children's Hospital and the 125 bedded Maternal & Child Health Care Centre.

Source: Hospital Websites, News links and Wikipedia

Table B2: Private Sector Hospitals

Hospital	Nature	Location	Year of Establishment	No of Beds
The Aga Khan University Hospital	Private	Karachi	1985	542
Shifa International	private	Islamabad	1989	439
South City	private	Karachi	2006	124
Liaquat National Hospital	Private	Karachi	1958	700
The Indus Hospital (TIH)	Private	Karachi	2007	150
National Medical CENTER	Private	Karachi	NA	200
Quaid e Azam International Hospital	Private	Islamabad	2012	400
	The Aga Khan University Hospital Shifa International South City Liaquat National Hospital The Indus Hospital (TIH) National Medical CENTER	The Aga Khan University HospitalPrivateShifa InternationalprivateSouth CityprivateLiaquat National HospitalPrivateThe Indus Hospital (TIH)PrivateNational Medical CENTERPrivate	The Aga Khan University HospitalPrivateKarachiShifa InternationalprivateIslamabadSouth CityprivateKarachiLiaquat National HospitalPrivateKarachiThe Indus Hospital (TIH)PrivateKarachiNational Medical CENTERPrivateKarachi	The Aga Khan University HospitalPrivateKarachi1985Shifa InternationalprivateIslamabad1989South CityprivateKarachi2006Liaquat National HospitalPrivateKarachi1958The Indus Hospital (TIH)PrivateKarachi2007National Medical CENTERPrivateKarachiNA

Source: Hospital Websites, News links

Table C: Recognized Medical Colleges

	Public	Private	Total
Punjab	19	36	55
Punjab Sindh	9	14	23
K.P.K	8	9	17
Baluchistan	1	1	2
AJ&K	3	1	4
Total	40	61	101

Source: Pakistan Medical and Dental Council

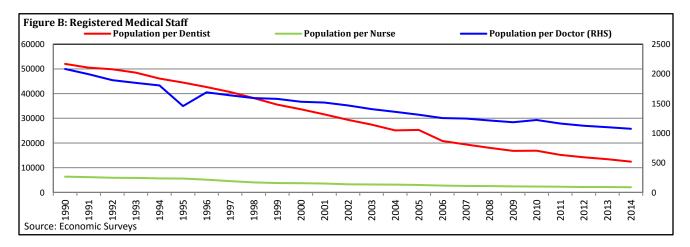
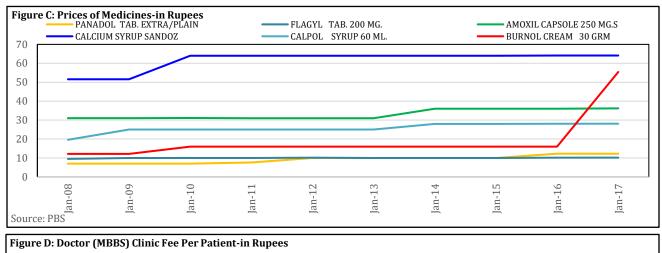
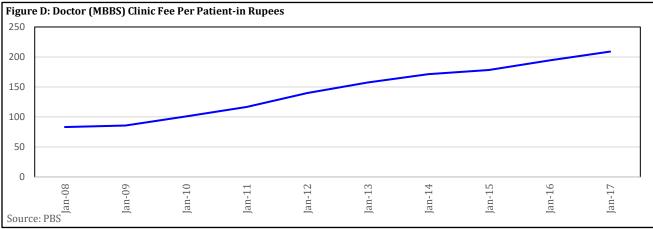


Table D: Perception of Public Hospital Services

Percentage of households who visited hospital for treatment and **'not agree'** with the statement

	Punjab		Sindh		КРК		Baluchistan		Average	
	District hospital	Tehsil hospital	District hospital	Tehsil hospital	District hospital	Tehsil hospital	District hospital	Tehsil hospita l	Distric t hospital	Tehsil hospital
Satisfied with the length of waiting time	79	75	85	76	89	91	98	97	88	85
Hospital is at a convenient distance	78	79	73	69	79	72	92	90	81	78
Had all required medicines and supplies	83	75	87	81	89	94	100	100	90	88
Medical staff were courteous and helpful	80	69	89	78	83	83	100	100	88	83
Building is well-maintained I received good medical	65	62	84	64	82	90	100	100	83	79
attention by qualified staff	72	68	88	81	85	85	100	100	86	84





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