

NUST BUSINESS SCHOOL



Health as an Economic Growth Indicator- a Study of Pakistani GDP (2000-14)

BUSINESS PROJECT-A EMBA2K14

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Acknowledgement

I owe this effort to Dr. Muhammad Zubair Mumtaz, who taught me the art of looking beyond the apparent and for his continuous guidance in preparation of this paper.

Dedication

I dedicate this humble effort to my parents who brought me up with urge to learn from lap to grave.

Abstract

Health is an important economic growth indicator of any country which not only reflects true development of a country and its masses but also improves international status as a welfare state among international community. In this study I have made an effort to analyse growth of medical facilities, medical and paramedical human resource, use of percentage share of GDP for development of Health Sector, population growth and its relevant effects on health facilities and professionals' availability. It was found that health sector is highly neglected and very negligible percentage share of GDP is being spent by successive governments for meeting this basic need of their masses. Population is growing at quiet a high rate whereas health infrastructure is not developing at proportionate level. Rural population is majority of the country but health facilities specific to rural areas witnessed comparatively lower growth in the period under review. Health infrastructure should be developed with a vision for longer perspective to convert same as a productive industry. In this way the expenditures will become productive and developmental, instead of becoming non developmental.

Health & Nutrition

1. **Introduction:** ‘A healthy body bears a healthy mind’ is the idiom known for centuries. In view of this we infer that a healthy nation has all the venues of life open for progress and development. When people are worried about their health they cannot give any worthwhile input to the development progression cycle of a country. Therefore, I chose health indicators as focus of my assignment to get a better picture of the development of my country. Health infrastructureⁱ growth is an important factor in the developmental growth of any country but it is very slow in Pakistan. Inadequacy of this infrastructure results in high infant mortality rate, for example in 1998ⁱⁱ, the infant mortality rate was 91/1000. Lack of health facilities, health facilities without medical professionals and facilities with professional but without requisite instruments and medicines sans any worthwhile support to suffering population. Presence of all these with due share of budget can only produce right results. Our majorityⁱⁱⁱ resides in rural areas and facilities like RHCs and BHU with LHVs can bring better results in health sector. How we can be assured that an ailing person can take benefit of education, employment, economic development and many more growth opportunities provided by successive governments? This strengthens my view that better the health opportunities provided better the country can develop economically.
2. **Aim:** To analyse various health indicators vis-à-vis GDP share as given in Economic survey of Pakistan 2013-14.
3. **Literature Review**
 - 3.1. The economic development and growth in a country is supposed to be affected by economic activities by successive governments. The strength of economic institutions in a country is a baseline that drives continuity of economic policies with a strategic direction set at national level that ensures consistent growth and economic development of people and state. However, this desired strength of institutions is somehow missing in case of Pakistan, where non-economic factors like quality of governance, functioning of institutions, openness and transparency in society which can be summarized in the strength of democracy has taken a leading role in deciding fate of economic development and growth. It can be rightly said that in Pakistan

economic development has increasingly become a matter of political economy^{iv}.

- 3.2. The fiscal year 2003/04 had achieved the highest growth rate since 1995/96 and was higher than the average for the entire decade of 90's^v. Human capital is the essence of any economic growth but in Pakistan one wonders how high economic growth has coexisted with very low social sector development, there is now a growing consensus that this pattern may have been one of the past, and now there is an urgent need for a highly skilled, literate, educated and healthy work force and population to deal with open trade, new technology and the ability to maximize all human potential^{vi}.
- 3.3. S. Akbar Zaidi in his book 'Pakistan's Economic & Social Development' argues that economic growth and development without social development cannot take place anymore. The real indicator of social development is HDI (Human Development index). Pakistan was 128th out of 174 in 1993, showing lack of social development. The situation has worsened as Pakistan ranking fall to 146th out of 186 in 2012 a, mirroring the worsening trend in per capita income^{vii}. Author is of the view that overall adult literacy and more importantly female literacy is considered to be fairly good indicator which reveals true status of social development in any country. He also observes that Pakistan's performance in terms of health is better, but has concerns due to population growth rate which is among highest in the world, and foresees problems in this field too.
- 3.4. One of the most important aspects of the social sectors and social services is the interdependence of many factors both as causes and as solutions^{viii}. Pakistan's population grows at the rate of 2.4 whereas its public health expenditure is just 0.9% of its GDP^{ix}, although total health expenditure for Pakistan is about 3.9%^x, which means a public share is much more than the government. A 2002 World Bank study found that in the case of female health care data related to utilization, there was strong correlation with income^{xi}.

Discussion and Analysis

Various factors which affect the economic development of a country within the realm of health have been divided into five elements that are health expenditure as percentage of GDP, Number of Health Facilities across the country, number of health practitioners, population growth and mortality rate over a period of last 10-15 years. I will discuss each with focus on data from Pakistan economic survey 2013-14. For the purpose of analysis and quick overview, the discussion is divided into following categories:

- Health Facilities (Infrastructure)
- Health Practitioners (Human Capital)
- Population Growth and Its Relationship to Health
- Expenditure on Health as Percentage of GDP

4. **Health Facilities:** This important indicator of economic growth in health category shows number of hospitals, dispensaries, Basic health units (sub units of hospitals), Rural Health Centers, child health and maternity centers, and TB centers combined. This category speaks of health infrastructure in the country which is very important for the bare fact that no health practitioner can optimize his/her potential without availability of these elements of infrastructure.

4.1. **Health Facilities- An Overview** (Table 1)^{xii}: All types of health facilities

including Hospitals, Rural Health Centers, BHUs or hospital subunits, Dispensaries and Maternity & Child Health Centers have been added to form one category for an overview and quick analysis. This graph indicates number of health facilities throughout the period as well as their

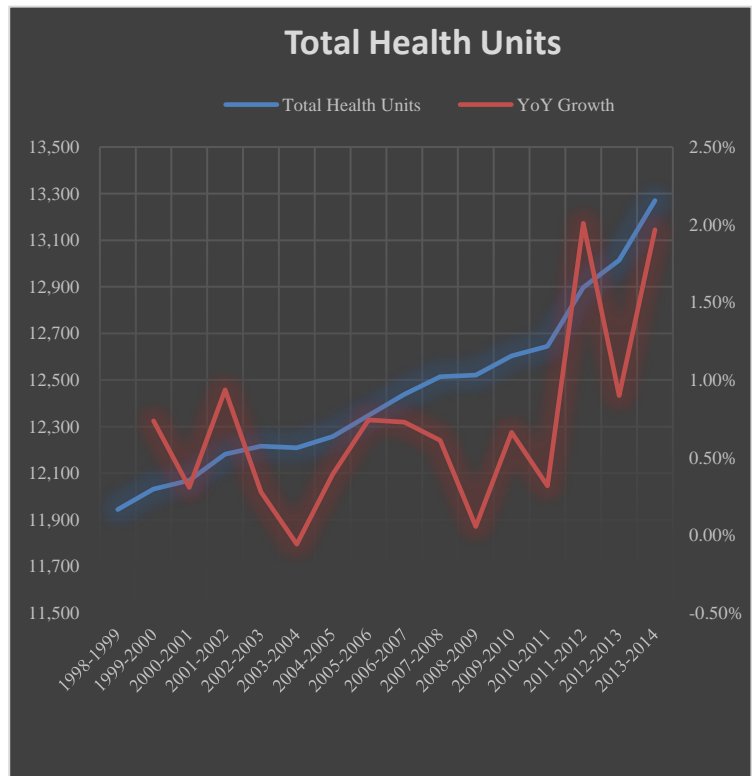
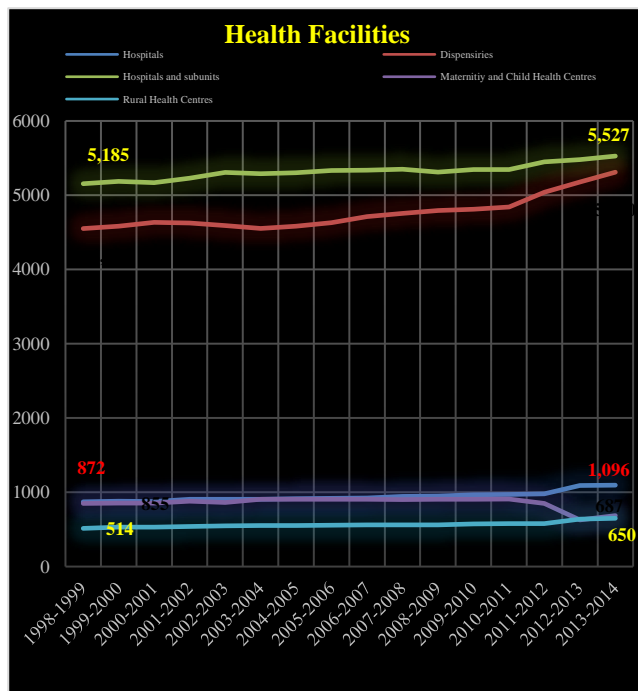


Figure 1

quantitative status on YoY (year on year) basis. It indicates an increasing upward trend in the number of facilities which tells us that number of facilities has increased from 12454 in 2001-2 to 13596 in 2013-14. The graph shows an increase of 1142 over 13 years with 87.8 in a year, on average which is 0.6% per annum.

4.2. **Health Facilities- In Details** (Table 2): This graph gives an overview of

various health facilities situation throughout the period under review. Number of 'Hospitals' have increased from 872 in 1998-99 to 1096 in 2013-14 meaning an addition of 224 in 15 years showing an average increase of 15 each year or just 1% increase per year. 'BHUs' (Hospitals

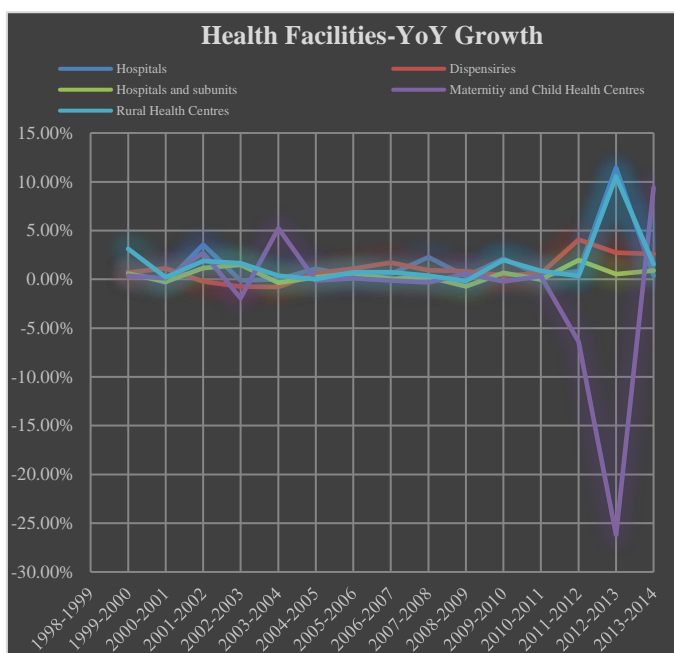


and sub units) have increased from 5185 to 5527

Figure 2

with average yearly increase upto 22.8 and 0.4% per annum increase in the period under review. 'Dispensaries' have increased at an average yearly rate of 48.5 or 0.9%, with total increase of 727 over 15 years. 'Maternity & Child Health Centers' have decreased by 168 in 14 years at an average fall of 12 or 0.2%. 'Rural Health Centers' have risen by 134 at an average increase of 8.9 or 1% with overall increase by 134 from 514 in 1998-99 to 650 in 2013-14. In overall context number of hospitals and dispensaries is much higher than other three sub-categories which are more relevant to rural areas. **Knowing that almost 70% of our population resides in rural areas, it is unfortunate that successive governments have ignored majority of the population.**

4.3. **Health Facilities-YoY Growth** (Table 3): In previous graph we discussed



HeHealth

Figure 3

Centres' in 2011-14 when its YoY basis share was

dropped by PPP government to -26.2% and then raised to 9.39% by PMLN government. In the same period the reverse action took place during same two repetitive governments as 'Rural Health Centers' saw an increase upto 10.54% and a decrease to 1.56%.

5. **Health Practitioners:** This category is very important for the fact that health infrastructure without these professionals is useless and their absence would mean void of health-care in the country. In following paras details of this category will be discussed.

number of various health facilities during the period and here we will analyse their share percentage during the same period. The share percentages of all the sub categories were almost same before 2012 remaining under 5%. However a major dip and a jump is seen in

5.1. **Total Number of Health Professionals** (Table 4): This graph indicates number of health professionals during the period under review. It shows an upward trend with 147130 in year 1998-99 and 314723 in year 2013-14 with an addition of 167593 in 15 years, thus, a per annum change of 11173 or 3.6% yearly.

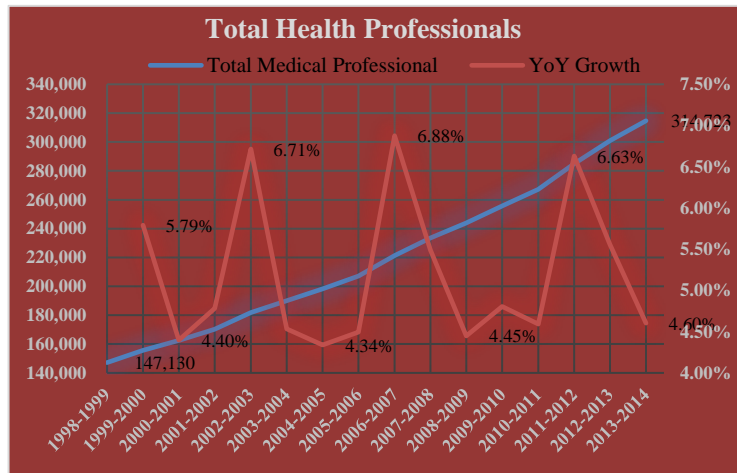


Figure 4

However if analysed on YoY basis percentage change, it is seen that three peaks and five troughs are significant in entire period under review. First peak is in 2002-3 with 6.7% share, second peak emerges in 2006-7 with 6.88% share and third peak is seen in 2011-12 with 6.3% share. The trough lows are visible in 2000-1, 2004-5, 2008-9, 2010-11 and 2013-14 with share percentages as 4.4%, 4.34%, 4.45%, 4.59% and 4.60%. This peak/ low pattern shows a consistency indicating an alternative shifting of priorities of government from this factor to some other factor.

5.2. **Doctors vs Paramedics Growth** (Table 5). This graph indicates growth of health professionals in the period under focus. Number of doctors include both medical as well as dental doctors and similarly Paramedics include nurses, midwives and Lady Health

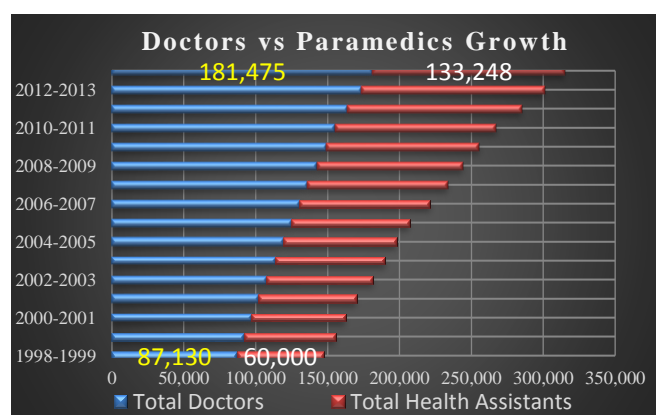


Figure 5

Visitors. The data represents registered health practitioners. It shows an upward trend in both categories with larger proportion of increase and presence of doctors in comparison to health assistants. Number of doctors have increased from 87130 in 1998-99 to 181475 in 2013-14, which shows an addition of 94345 in 15 years and an

average increase of 6290 per annum or 3.5% yearly. In case of health assistants the number increased from 60000 in 1998-99 to 133248 in 2013-14, showing an addition of 73248 over 15 years time and 4083 as average increase per year or 3.7% change per annum.

5.3. **Registered Medical Staff Category-wise** (Table 6): This graph indicates numbers of various sub categories of medical staff in each year. It shows an upward trend in almost all the subcategories but at a varying scale. The maximum upward change is in doctors and nurses and lowest in LHV's and dentists.

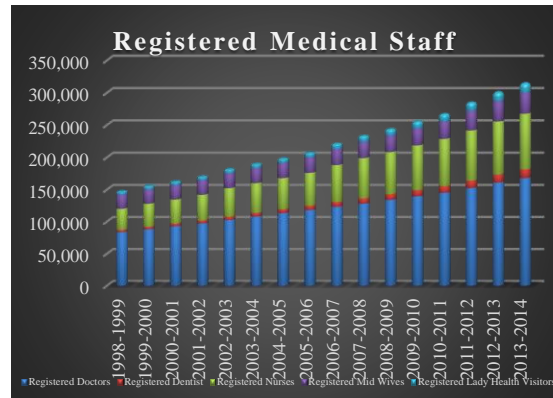


Figure 6

5.4. **Medical Staff- Percentage Share**

(Table 7): This graph indicates percentage share of each sub category of Medical Staff including doctors, dentists, nurses, midwives and LHV's. Share of doctors is on decreasing trend from 56.9% to 53.3% over the period under review. Similarly share percentage of midwives has decreased from 14.45 to 10.4%. However, share of nurses has increased from 22.4% to 27.4%, LHV's from 3.4% to 4.6% and dentists from 2.3% to 4.6% in the period under focus.

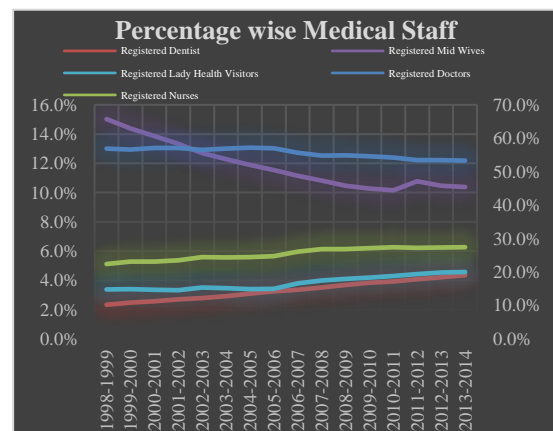


Figure 7

5.5. **Doctors Growth** (Table 8): This graph shows an increase in numbers of doctors from 83696 in 1998-99 to 167759 in 2013-14, which means an addition of 84063 in 15 years i.e., average increase of 5604 per annum or 3% in any year. However, the percentage share of doctors growth on YoY basis shows an overall

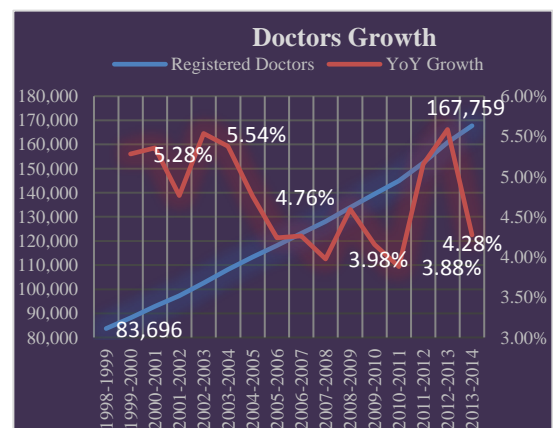


Figure 8

decrease from 5.28% to 4.28% in complete period. Highest share in any year is in 2002-3 i.e., Pervez Musharraf Regime, which is 5.58% and lowest being 3.88% in 2010-11, i.e., PPP Regime.

5.6. **Dentist Growth** (Table 9): In this graph growth of dentists have been analysed. It

shows an increase in number of dentist from 3857 in 1998-99 to 13716 in 2013-14, meaning an addition of 9859 in 15 years depicting an average increase of 657 per year or 4.7% average increase in any year. YoY basis share percentage has shown a downward trend from 12.32% in 1998 to 8.87% in 2014. Highest share in any year being 12.32

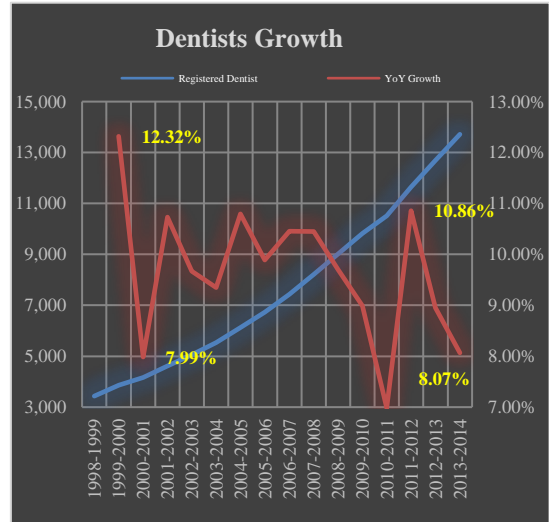


Figure 9

in 1998 to lowest in any year being 6.98% in 2010-11.

5.7. **Growth of Nurses** (Table 10): This graph analyses growth of nurses during the

period 1998-2014. It tells us that their number has increased from 35979 to 86183 showing an addition of 50204 in 15 years with average increase of 3346 per year or 3.8% increase in any year under review. YoY basis share percentage of this category of paramedics has shown a downward trend from 9.23% in 1998 to 4.95% in 2014. Highest share percentage being 12.44% in 2006-7 and lowest being 4.07% in year 2003-4.

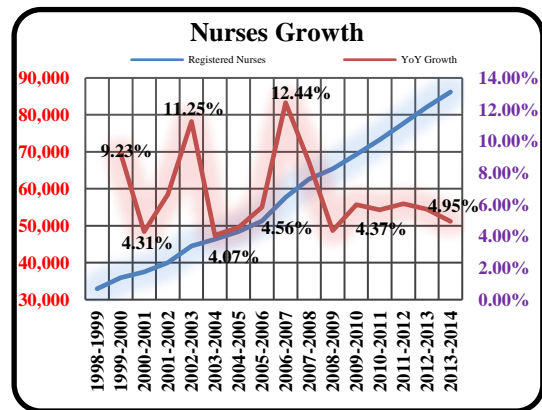


Figure 10

5.8. **Growth of Midwives** (Table

11): This graph shows an addition of 10564 during the period under review with an average increase of 784 per year or 2.2% increase in any

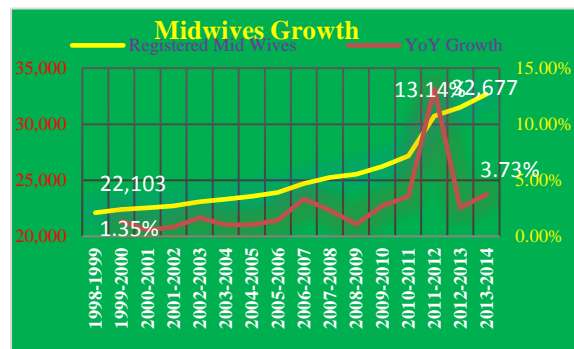


Figure 11

year of the period in focus. YoY basis share percentage indicates a highest share in 2010-11 with 13.14% and lowest in 1999-2000 being 1.35%. An overall neglected category during the focused period except in 2010-11.

5.9. **Growth of LHVs** (Table 12): In this graph we see that LHVs have grown from



Figure 12

4959 in 1998-99 to 14388 in 2013-14 with an addition of 9429 in 15 years. Average increase in number per year has been 628.6 and 4.3% in any year. In YoY basis share percentage of LHVs has been maximum upto 18.83% in 2006-7 and minimum upto 2.15% in 2004-5.

6. **Population Growth- Overview:** Population growth is an important factor for reviewing growth in any economic sector especially for analysis of social indicators growth or status in the country and to check whether any government is really doing good for the welfare of people or otherwise.

6.1. **Population Growth** (Table 13): Population growth in Pakistan is on upward trend

throughout the period under review except in 2002-3. It increased from average of 150.9 million in 2000 to 188 million in 2013-14, showing an increase of 37.1 million with an average yearly increase of 2.85 million or 1.5% per year in 13 years. Such a tremendous increase in population does not commensurate with

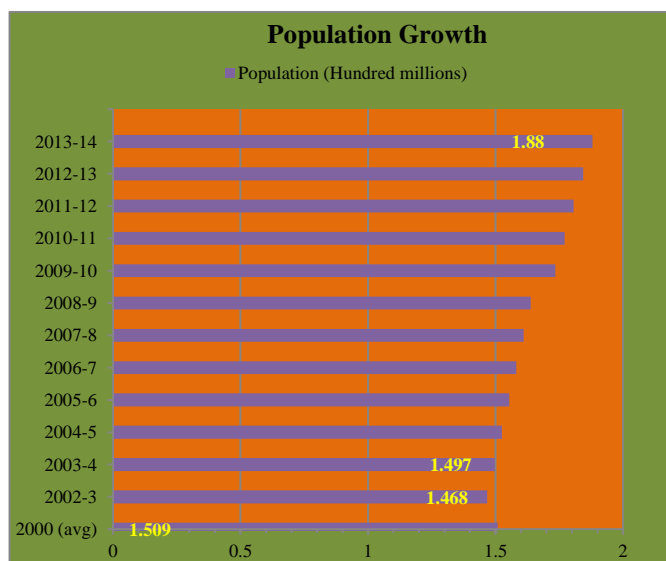


Figure 13

growth rate of expenditure, as percentage of GDP for health, meaning by poor health facilitation by successive governments for the increasing population.

6.2. **Birth/ Death Rates** (Table 14): Another measure of economic growth in terms

of ‘Health& Nutrition’ is ‘Birth/ Death’ rates in the country which elucidates life expectancy of the population and speaks of levels of health being enjoyed by them. The graph is showing a relative representation of births vs deaths in

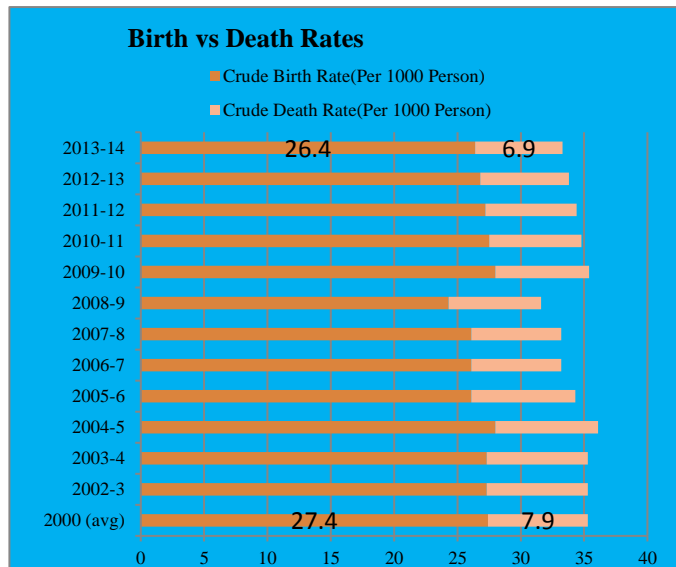


Figure 14

each year. In year 2000 the average birth/ death ratio was 27.4:7.9 and in 2013-14 it was 26.4:6.9, depicting a downward change in both births and deaths by 1/1000, which is not a positive sign for births but certainly a positive sign for deaths affecting life expectancy. In 2008-9 the birth rate per 1000 was 24.3 and death rate was 7.3 whereas in 2004-5 it was 28 and 8.1 respectively. The infant mortality rate not included here, which is compared in next paragraph with different results and readings.

6.3. **Comparison- Birth/ Death Rate of Children** (Table 15): This graph analyses

number of births (crude) with number of deaths (crude and infant) per 1000 of children each year for the period under focus. Here we see that in year 2000 the average birth rate per 1000 was 27.4 whereas the death rate was 87.5 in the

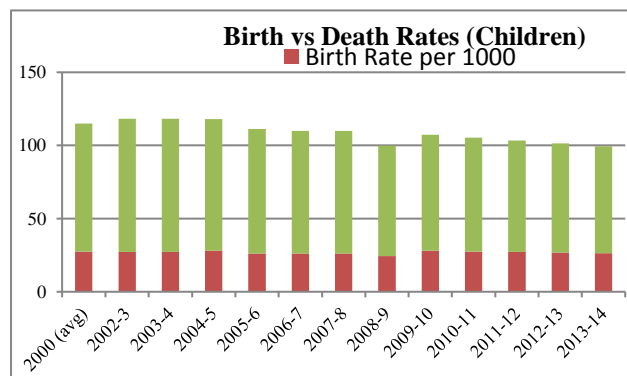


Figure 15

same year. In 2013-14 the respective rates per thousand were 26.4 and 73 for births and deaths respectively. These figures show a decreasing trend in both births and deaths, which is a positive sign.

6.4. **Population vs Doctors/Dentists** (Table 16): The population growth of Pakistan

has been much more in comparison to growth of health professionals, with the fact that already existing proportion is much lower than bare minimum required. In this graph and onward we will compare growth of various categories with growth of population. In 1992-3 there

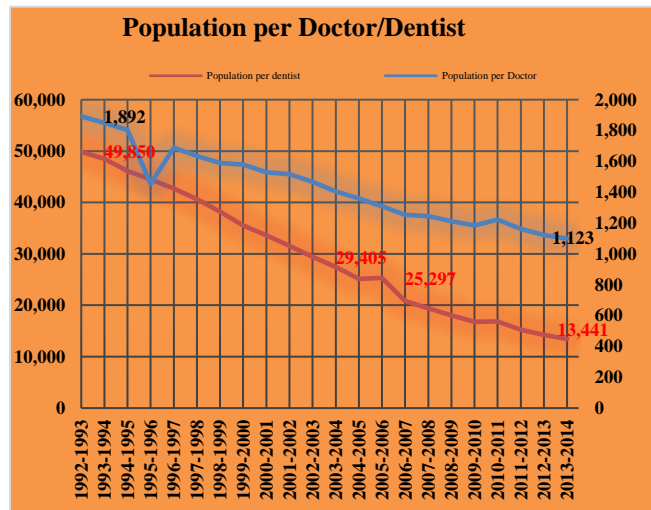


Figure 16

was one doctor for 1892 people whereas same doctor is responsible for 1123 people, indicating a positive growth of doctors and a negative growth of population per doctor which is a positive sign in health indicators of economy. Similarly, 49508 people per dentist in 1992-93 has decreased to 13441 people per dentist in 2013-14 which means better dental care comparatively.

6.5. **Population per Doctor/ Dentist- YoY Growth** (Table 17): This graph indicates

share percentage growth of doctors and dentists on an YoY basis. Except for years 1996-97 and 2010-11, the growth percentage of doctors vs population is consistently below zero level or negative throughout whereas for dentists it is through and through negative except for 2005-6 when only 0.8%

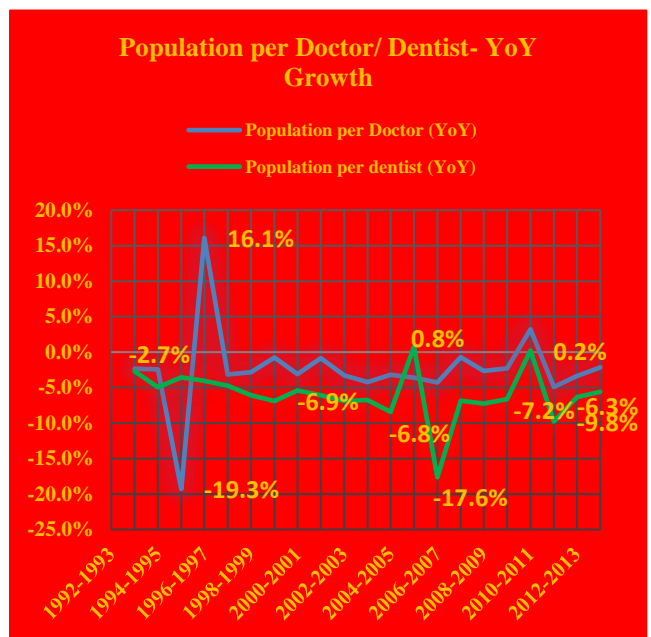


Figure 17

positive growth is visible. The lowest growth in both categories is -19.3% and -17.6% in years 1995-96 and 2006-7 respectively.

7. **Health Expenditure as % of GDP:** This aspect gives us an overview of the spending of successive governments for betterment of the health indicators. This also indicates how much importance the respective government gives to this important facet of the national development and growth of a major capital resource of their country.

7.1. **Expenditure on Health** (Table 18): This graph indicates health expenditure as percentage of GDP by successive

governments. It shows a maximum spending in year 2001-2 to a minimum in year 2010-11 at 0.23% of GDP. These figures

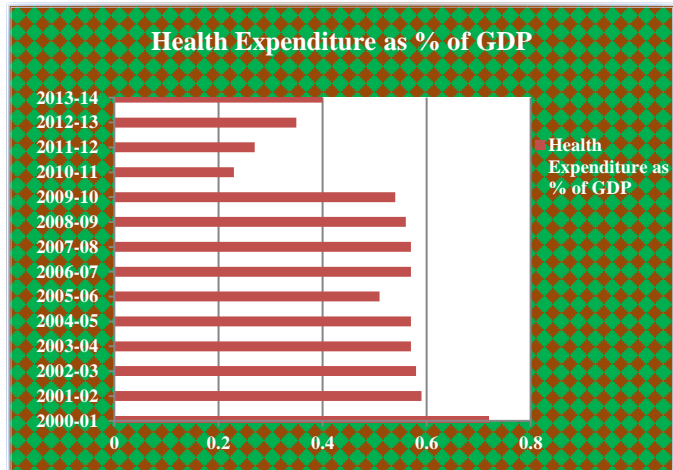


Figure 18

shows a miser spending consistently by successive regimes for this important indicator of economic development. To be more precise the spending is negligible or it can be said this is the neglected area, although being a basic human need, it should be focus of so called governments of the people, for the people and by the people.

7.2. **Expenditure for Health- Sub Categories** (Table 19): Few graphs from here

onward analysis government expenditure in regard to 'health and Nutrition' over the period under review. In this first graph two categories of expenditures i.e., developmental and non-developmental have been portrayed. It shows an upward trend for both types of expenditures, however, rate of rise for non developmental expenditures is higher than developmental expenditure especially after 2012 when it

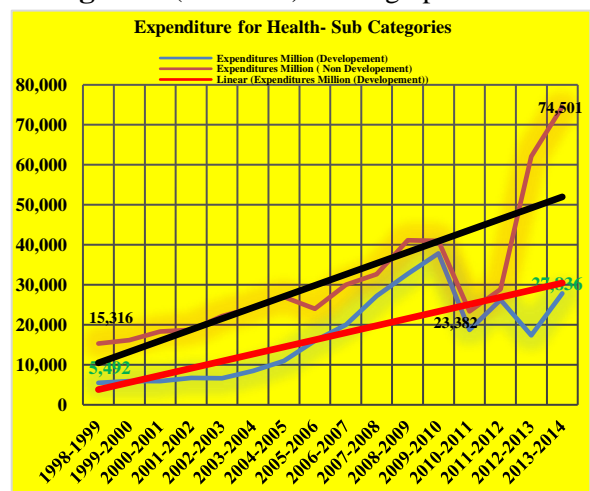


Figure 19

was 28870 and it shot upto to 74501 millions. A real development always occurs when both types of expenditure rise in harmony.

7.3. Expenditure on Health- YoY Basis (Table 20): This graph analyses both types

of expenditure in YoY basis. The lowest share in developmental expenditure is -50.59% and in non-developmental expenditure it is -42.97% whereas the highest share in developmental and non developmental expenditure is 60.56% and 115.19% respectively. Highest developmental expenditure share was in

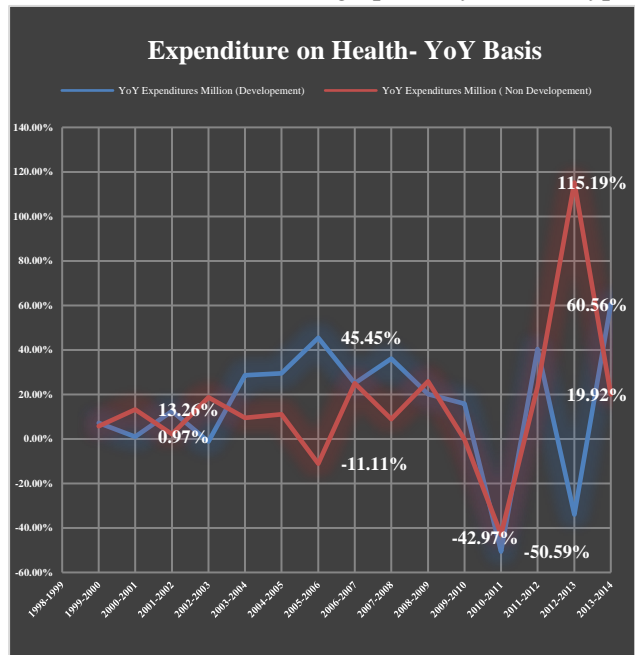


Figure 20

2005-6 and in the same year the non developmental expenditure was proportionately low to -11.11%, which speaks of good government policy and governance. In contrast the worst governance is visible in 2012-13 when non-developmental expenditure share was 115.19% and developmental expenditure share was proportionately lowest to -50.59%.

7.4. Population Growth vs Expenditure on Health as Percentage of GDP

Growth (Table 21): This graph shows us a comparative analysis of growth in expenditure on health as percentage of GDP vs growth in population during the period under review.

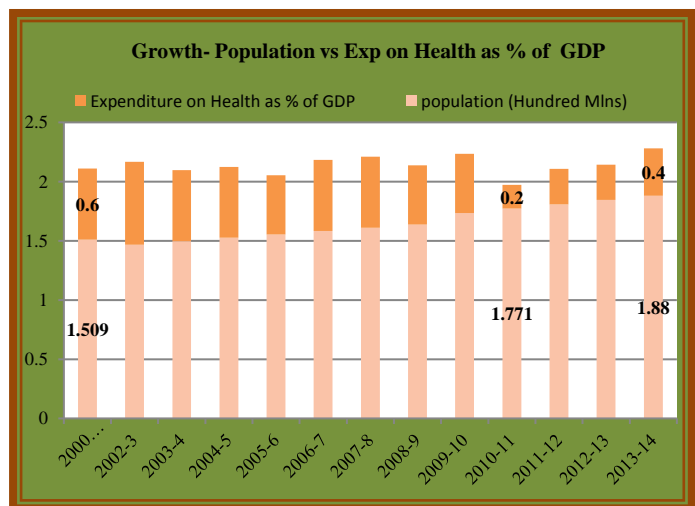


Figure 21

It helps us find out the fact that whether successive governments during the period under review has expended on health proportionate to population or not. Here we see that population has

increased by 1.52% per annum over the period under review. Similarly, we see that expenditure on health as percentage of GDP has decreased from 0.6% to 0.4% in the same period. Without going into details of change in GDP percentage, one finds that successive governments have decreased it instead of increasing the same. This depicts poor policy orientation of ruling elite toward the basic needs of ever growing population.

8. **Overall Analysis:** In above deliberate discussion and analysis, it is found that health sector is highly neglected and very negligible percentage share of GDP is being spent by successive governments for meeting this basic need of their masses. Population is growing at quiet a high rate whereas health infrastructure is not developing at commensurate rate. Rural population is majority of the country but health facilities specific to rural areas witnessed comparatively lower growth in the period under review.
9. **Recommendations:** In view of the overall analysis, it is recommended that government should allocate reasonably good percentage share of GDP for growth of health sector with especial focus on development of infrastructure along-with relevant human capital in the rural sector to facilitate majority of its population. Health infrastructure should be developed with a vision for longer perspective to convert same as a productive industry like Portugal's Dental industry. In this way the expenditures will be productive and developmental instead of becoming white elephant non developmental spending.
10. **Conclusions:** Health is an important economic growth indicator of any country which not only reflects true development of a country and its masses but also improves international status as a welfare state in the eyes of international community. In this study we have made an effort to analyse growth of medical facilities, medical and paramedical human resource, use of percentage share of GDP for health, population growth and its relevant effects on health facilities and professionals' provision.

Annexures

Table 1

Year	Total Health Units	YoY Growth
1998-1999	11,944	
1999-2000	12,032	0.74%
2000-2001	12,069	0.31%
2001-2002	12,182	0.94%
2002-2003	12,216	0.28%
2003-2004	12,209	-0.06%
2004-2005	12,257	0.39%
2005-2006	12,348	0.74%
2006-2007	12,438	0.73%
2007-2008	12,514	0.61%
2008-2009	12,521	0.06%
2009-2010	12,604	0.66%
2010-2011	12,644	0.32%
2011-2012	12,898	2.01%
2012-2013	13,014	0.90%
2013-2014	13,270	1.97%

Table 2

Year	Hospitals	Dispensaries	BHUs	Maternity and Child Health Centers	Rural Health Centers
1998-1999	872	4,551	5,155	852	514
1999-2000	879	4,583	5,185	855	530
2000-2001	876	4,635	5,171	856	531
2001-2002	907	4,625	5,230	879	541
2002-2003	906	4,590	5,308	862	550
2003-2004	906	4,554	5,290	907	552
2004-2005	916	4,582	5,301	906	552
2005-2006	919	4,632	5,334	907	556
2006-2007	924	4,712	5,336	906	560
2007-2008	945	4,755	5,349	903	562
2008-2009	948	4,794	5,310	908	561
2009-2010	968	4,813	5,345	906	572
2010-2011	972	4,842	5,344	909	577
2011-2012	980	5,039	5,449	851	579
2012-2013	1,092	5,176	5,478	628	640
2013-2014	1,096	5,310	5,527	687	650

Table 3

Year	Hospitals	Dispensaries	BHUs	Maternity and Child Health Centers	Rural Health Centers
1998-1999					
1999-2000	0.80%	0.70%	0.58%	0.35%	3.11%
2000-2001	-0.34%	1.13%	-0.27%	0.12%	0.19%
2001-2002	3.54%	-0.22%	1.14%	2.69%	1.88%
2002-2003	-0.11%	-0.76%	1.49%	-1.93%	1.66%
2003-2004	0.00%	-0.78%	-0.34%	5.22%	0.36%
2004-2005	1.10%	0.61%	0.21%	-0.11%	0.00%
2005-2006	0.33%	1.09%	0.62%	0.11%	0.72%
2006-2007	0.54%	1.73%	0.04%	-0.11%	0.72%
2007-2008	2.27%	0.91%	0.24%	-0.33%	0.36%
2008-2009	0.32%	0.82%	-0.73%	0.55%	-0.18%
2009-2010	2.11%	0.40%	0.66%	-0.22%	1.96%
2010-2011	0.41%	0.60%	-0.02%	0.33%	0.87%
2011-2012	0.82%	4.07%	1.96%	-6.38%	0.35%
2012-2013	11.43%	2.72%	0.53%	-26.20%	10.54%
2013-2014	0.37%	2.59%	0.89%	9.39%	1.56%

Table 4

Year	Total Medical Professional	YoY Growth
1998-1999	147,130	
1999-2000	155,653	5.79%
2000-2001	162,499	4.40%
2001-2002	170,271	4.78%
2002-2003	181,703	6.71%
2003-2004	189,943	4.53%
2004-2005	198,183	4.34%
2005-2006	207,087	4.49%
2006-2007	221,327	6.88%
2007-2008	233,471	5.49%
2008-2009	243,860	4.45%
2009-2010	255,579	4.81%
2010-2011	267,316	4.59%
2011-2012	285,043	6.63%
2012-2013	300,872	5.55%
2013-2014	314,723	4.60%

Table 5

Year	Total Doctors	Total Paramedics
1998-1999	87130	60000
1999-2000	91974	63679
2000-2001	97003	65496
2001-2002	101872	68399
2002-2003	107702	74001
2003-2004	113695	76248
2004-2005	119437	78746
2005-2006	124847	82240
2006-2007	130584	90743
2007-2008	136257	97214
2008-2009	142937	100923
2009-2010	149310	106269
2010-2011	155409	111907
2011-2012	164017	121026
2012-2013	173572	127300
2013-2014	181475	133248

Table 6

Year	Registered Doctors	Registered Dentist	Registered Nurses	Registered Mid Wives	Registered Lady Health Visitors	Registered Medical Staff
1998-1999	83,696	3,434	32,938	22,103	4,959	147,130
1999-2000	88,117	3,857	35,979	22,401	5,299	155,653
2000-2001	92,838	4,165	37,528	22,525	5,443	162,499
2001-2002	97,260	4,612	40,019	22,711	5,669	170,271
2002-2003	102,644	5,058	44,520	23,084	6,397	181,703
2003-2004	108,164	5,531	46,331	23,318	6,599	189,943
2004-2005	113,309	6,128	48,446	23,559	6,741	198,183
2005-2006	118,113	6,734	51,270	23,897	7,073	207,087
2006-2007	123,146	7,438	57,646	24,692	8,405	221,327
2007-2008	128,042	8,215	62,651	25,261	9,302	233,471
2008-2009	133,925	9,012	65,387	25,534	10,002	243,860
2009-2010	139,488	9,822	69,313	26,225	10,731	255,579
2010-2011	144,901	10,508	73,244	27,153	11,510	267,316
2011-2012	152,368	11,649	77,683	30,722	12,621	285,043
2012-2013	160,880	12,692	82,119	31,503	13,678	300,872
2013-2014	167,759	13,716	86,183	32,677	14,388	314,723

Table 7

Year	Registered Doctors	Registered Dentist	Registered Nurses	Registered Mid Wives	Registered Lady Health Visitors
1998-1999	56.9%	2.3%	22.4%	15.0%	3.4%
1999-2000	56.6%	2.5%	23.1%	14.4%	3.4%
2000-2001	57.1%	2.6%	23.1%	13.9%	3.3%
2001-2002	57.1%	2.7%	23.5%	13.3%	3.3%
2002-2003	56.5%	2.8%	24.5%	12.7%	3.5%
2003-2004	56.9%	2.9%	24.4%	12.3%	3.5%
2004-2005	57.2%	3.1%	24.4%	11.9%	3.4%
2005-2006	57.0%	3.3%	24.8%	11.5%	3.4%
2006-2007	55.6%	3.4%	26.0%	11.2%	3.8%
2007-2008	54.8%	3.5%	26.8%	10.8%	4.0%
2008-2009	54.9%	3.7%	26.8%	10.5%	4.1%
2009-2010	54.6%	3.8%	27.1%	10.3%	4.2%
2010-2011	54.2%	3.9%	27.4%	10.2%	4.3%
2011-2012	53.5%	4.1%	27.3%	10.8%	4.4%
2012-2013	53.5%	4.2%	27.3%	10.5%	4.5%
2013-2014	53.3%	4.4%	27.4%	10.4%	4.6%

Table 8

Year	Registered Doctors	YoY Growth
1998-1999	83,696	
1999-2000	88,117	5.28%
2000-2001	92,838	5.36%
2001-2002	97,260	4.76%
2002-2003	102,644	5.54%
2003-2004	108,164	5.38%
2004-2005	113,309	4.76%
2005-2006	118,113	4.24%
2006-2007	123,146	4.26%
2007-2008	128,042	3.98%
2008-2009	133,925	4.59%
2009-2010	139,488	4.15%
2010-2011	144,901	3.88%
2011-2012	152,368	5.15%
2012-2013	160,880	5.59%
2013-2014	167,759	4.28%

Table 9

Year	Registered Dentist	YoY Growth
1998-1999	3,434	
1999-2000	3,857	12.32%
2000-2001	4,165	7.99%
2001-2002	4,612	10.73%
2002-2003	5,058	9.67%
2003-2004	5,531	9.35%
2004-2005	6,128	10.79%
2005-2006	6,734	9.89%
2006-2007	7,438	10.45%
2007-2008	8,215	10.45%
2008-2009	9,012	9.70%
2009-2010	9,822	8.99%
2010-2011	10,508	6.98%
2011-2012	11,649	10.86%
2012-2013	12,692	8.95%
2013-2014	13,716	8.07%

Table 10

Year	Registered Nurses	YoY Growth
1998-1999	32,938	
1999-2000	35,979	9.23%
2000-2001	37,528	4.31%
2001-2002	40,019	6.64%
2002-2003	44,520	11.25%
2003-2004	46,331	4.07%
2004-2005	48,446	4.56%
2005-2006	51,270	5.83%
2006-2007	57,646	12.44%
2007-2008	62,651	8.68%
2008-2009	65,387	4.37%
2009-2010	69,313	6.00%
2010-2011	73,244	5.67%
2011-2012	77,683	6.06%
2012-2013	82,119	5.71%
2013-2014	86,183	4.95%

Table 11

Year	Registered Mid Wives	YoY Growth
1998-1999	22,103	
1999-2000	22,401	1.35%
2000-2001	22,525	0.55%
2001-2002	22,711	0.83%
2002-2003	23,084	1.64%
2003-2004	23,318	1.01%
2004-2005	23,559	1.03%
2005-2006	23,897	1.43%
2006-2007	24,692	3.33%
2007-2008	25,261	2.30%
2008-2009	25,534	1.08%
2009-2010	26,225	2.71%
2010-2011	27,153	3.54%
2011-2012	30,722	13.14%
2012-2013	31,503	2.54%
2013-2014	32,677	3.73%

Table 12

Year	Registered Lady Health Visitors	YoY Growth
1998-1999	4,959	
1999-2000	5,299	6.86%
2000-2001	5,443	2.72%
2001-2002	5,669	4.15%
2002-2003	6,397	12.84%
2003-2004	6,599	3.16%
2004-2005	6,741	2.15%
2005-2006	7,073	4.93%
2006-2007	8,405	18.83%
2007-2008	9,302	10.67%
2008-2009	10,002	7.53%
2009-2010	10,731	7.29%
2010-2011	11,510	7.26%
2011-2012	12,621	9.65%
2012-2013	13,678	8.37%
2013-2014	14,388	5.19%

Table 13

Years	Population (Hundred Millions)
2000 (average)	1.509
2002-3	1.468
2003-4	1.497
2004-5	1.525
2005-6	1.554
2006-7	1.582
2007-8	1.61
2008-9	1.638
2009-10	1.735
2010-11	1.771
2011-12	1.807
2012-13	1.844
2013-14	1.88

Table 14

Year	Crude Birth Rate (Per 1000 Person)	Crude Death Rate (Per 1000 Person)
2000 (average)	27.4	7.9
2002-3	27.3	8
2003-4	27.3	8
2004-5	28	8.1
2005-6	26.1	8.2
2006-7	26.1	7.1
2007-8	26.1	7.1
2008-9	24.3	7.3
2009-10	28	7.4
2010-11	27.5	7.3
2011-12	27.2	7.2
2012-13	26.8	7
2013-14	26.4	6.9

Table 15

Year↓	Birth Rate(Per 1000 Person)	Death Rate(Per 1000 Person)
2000 (average)	27.4	87.5
2002-3	27.3	91
2003-4	27.3	91
2004-5	28	90.1
2005-6	26.1	85.2
2006-7	26.1	83.8
2007-8	26.1	83.8
2008-9	24.3	75.5
2009-10	28	79.4
2010-11	27.5	77.8
2011-12	27.2	76.2
2012-13	26.8	74.5
2013-14	26.4	73

Table 16

Year	Population per Doctor	Population per Dentist
1992-1993	1,892	49,850
1993-1994	1,848	48,508
1994-1995	1,803	46,114
1995-1996	1,453	44,478
1996-1997	1,689	42,675
1997-1998	1,636	40,652
1998-1999	1,590	38,185
1999-2000	1,578	35,887
2000-2001	1,529	33,629
2001-2002	1,516	31,579
2002-2003	1,466	29,405
2003-2004	1,404	27,414
2004-2005	1,359	25,107
2005-2006	1,310	23,297
2006-2007	1,254	20,839
2007-2008	1,243	19,417
2008-2009	1,212	18,010
2009-2010	1,184	16,814
2010-2011	1,222	16,854
2011-2012	1,162	15,203
2012-2013	1,123	14,238
2013-2014	1,099	13,431

Table 17

Year	Population per Doctor (YoY)	Population per Dentist (YoY)
1992-1993		
1993-1994	-2.3%	-2.7%
1994-1995	-2.4%	-4.9%
1995-1996	-19.3%	-3.5%
1996-1997	16.1%	-4.1%
1997-1998	-3.1%	-4.7%
1998-1999	-2.8%	-6.1%
1999-2000	-0.8%	-6.9%
2000-2001	-3.1%	-5.4%
2001-2002	-0.9%	-6.1%
2002-2003	-3.3%	-6.9%
2003-2004	-4.2%	-6.8%
2004-2005	-3.2%	-8.4%
2005-2006	-3.6%	0.8%
2006-2007	-4.3%	-17.6%
2007-2008	-0.7%	-6.8%
2008-2009	-2.7%	-7.2%
2009-2010	-2.3%	-6.6%
2010-2011	3.2%	0.2%
2011-2012	-4.9%	-9.8%
2012-2013	-3.4%	-6.3%
2013-2014	-2.1%	-5.6%

Table 18

2000-01	0.72
2001-02	0.59
2002-03	0.58
2003-04	0.57
2004-05	0.57
2005-06	0.51
2006-07	0.57
2007-08	0.57
2008-09	0.56
2009-10	0.54
2010-11	0.23
2011-12	0.27
2012-13	0.35
2013-14	0.4

Table 19

Year	Expenditures Million (Development)	Expenditures Million (Non Development)
1998-1999	5,492	15,316
1999-2000	5,887	16,190
2000-2001	5,944	18,337
2001-2002	6,688	18,717
2002-2003	6,609	22,205
2003-2004	8,500	24,305
2004-2005	11,000	27,000
2005-2006	16,000	24,000
2006-2007	20,000	30,000
2007-2008	27,228	32,670
2008-2009	32,700	41,100
2009-2010	37,860	41,000
2010-2011	18,706	23,382
2011-2012	26,250	28,870
2012-2013	17,337	62,125
2013-2014	27,836	74,501

Table 20

Year	YoY Expenditures Million (Development)	YoY Expenditures Million (Non Development)
1998-1999		
1999-2000	7.19%	5.71%
2000-2001	0.97%	13.26%
2001-2002	12.52%	2.07%
2002-2003	-1.18%	18.64%
2003-2004	28.61%	9.46%
2004-2005	29.41%	11.09%
2005-2006	45.45%	-11.11%
2006-2007	25.00%	25.00%
2007-2008	36.14%	8.90%
2008-2009	20.10%	25.80%
2009-2010	15.78%	-0.24%
2010-2011	-50.59%	-42.97%
2011-2012	40.33%	23.47%
2012-2013	-33.95%	115.19%
2013-2014	60.56%	19.92%

Table 21

Years	Expenditure on Health (% of GDP)	Population (Hundred Millions)
2000 (average)	0.6	1.509
2002-3	0.7	1.468
2003-4	0.6	1.497
2004-5	0.6	1.525
2005-6	0.5	1.554
2006-7	0.6	1.582
2007-8	0.6	1.61
2008-9	0.5	1.638
2009-10	0.5	1.735
2010-11	0.2	1.771
2011-12	0.3	1.807
2012-13	0.3	1.844
2013-14	0.4	1.88

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