'Ailing' Public Healthcare in India: Some Alternatives to Ameliorate It

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Abstract

India is a signatory to two major declarations manifesting its commitment to improving public healthcare - Health for All by 2000 AD at the Alma Ata conference organised by the World Health Organization (WHO) in 1978 and the Millennium Declaration of the United Nations in September 2000. Both these declarations exhort the signatories to make an effort in realizing the vision by identifying the gaps, allocating the resources and then effectively implementing the plans. In India, however, the lack of achievement of the vision is a wellknown and tragic truth. The same is reflected in poor public health infrastructure, widespread prevalence of fatal diseases, malnutrition, hunger and unsanitary conditions. The governments, both at the Centre and in the States, have been apathetic towards their role in health care. Last year in January 2011, the government at the Centre adopted another objective suggested by the Lancet – Universal Healthcare by 2020. It is imperative that the governments at the Central and the State levels show commitment to achieving the targets therein and the aforementioned Declarations by making suitable budgetary allocations. The present paper analyses these allocations at the Central and State Government levels before and after the Alma Ata Declaration and the amounts spent to highlight the same. Subsequently, the approach taken by the Central Government towards correcting the anomaly in the 12th Five Year Plan is discussed and some suggestions offered for the policy makers.

Introduction

The debate on healthcare systems, especially on public healthcare, is raging across the world in most countries — big and small, developed, developing/emerging and underdeveloped. The issues under consideration are central to anysuch system — access to healthcare, the cost of care provided and the quality thereof. One of the reasons for this intense focus in contemporary times is the heightened concern for achieving good health status as it is a prerequisite for economic well-being — not only of the individual but also collectively of the nation. The fact that collective good health leads to economic wealth was a major factor for setting up of the World Health Organisation (WHO) after the World War — II in 1948. Ever since then, the WHO has been focusing on community-driven care, and declared the ambitious goal of 'health for all' in 1978. This was adopted by its member countries in the International Conference on Primary Health Care held at Alma-Ata, Kazakastan(Wikipedia contributors, 2013). Since the achievement was short of target for most of the signatory countries by the target year of 2000, a more comprehensive and detailed statement of intent was adopted at the Millennium Summit in September 2000, known as the Millennium Development Goals.

The Alma-Ata Declaration of 1978

The International Conference on Primary Health Care at Alma-Ata declared that "....health, which is a state of complete physical, mental and social well-being, and not merely the absence of disease or infirmity, is a fundamental human right and that the attainment of the highest possible level of health is a most important world-wide social goal

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whose realization requires the action of many other social and economic sectors in addition to the health sector". It further emphasized that the "governments have a responsibility for the health of their people which can be fulfilled only by the provision of adequate health and social measures." The Declaration exhorted the governments to "... formulate national policies, strategies and plans of action to launch and sustain primary health care as part of a comprehensive national health system and in coordination with other sectors."The authors are of the opinion that the Declaration laid down the imperatives to achieve the goal when it identified that "...it will be necessary to exercise political will, to mobilize the country's resources and to use available external resources rationally." It can be inferred that one of the core goals of the Declaration was to facilitate creation of a health system that could protect the populations from the financial risk associated with healthcare expenditures, especially if these expenditures are out-of-pocket (Bhat & Jain, 2004).

Millennium Development Goals

The Millennium Summit of the United Nations General Assembly was organized in September 2000. It culminated in a joint declaration agreed to by all 193 member countries and came to be known as the Millennium Development Goals. These goals evolved from various conferences of the 1990s of the UN and seek to –

- i. eradicate extreme poverty and hunger,
- ii. achieve universal primary education,
- iii. promote gender equality and empowering women
- iv. reduce child mortality rates,
- v. improve maternal health,
- vi. combat HIV/AIDS, malaria, and other diseases,
- vii. ensure environmental sustainability, and
- viii. develop a global partnership for development

The goals have been further made specific in terms of 18 targets and 48 measurable indicators. Health, especially public health, is at the core of the millennium development agenda, as three goals, eight targets and eighteen indicators pertain to health. However, the achievement of health-specific goals in India is woefully short of the target. The Millennium Development Goals India Country Report 2011, released by the Central Statistical Organisation, presents the status of achievement on each of the targets by the country. It notes that the targets pertaining to infant mortality rate, malnourishment among children, maternal mortality rate, etc. shall not be achieved by 2015(Anant, 2012).

Public Healthcare Framework in India

When a sovereign nation like ours becomes signatory to such documents as the Alma-Ata Declaration and the United Nations Millennium Declaration, it has to be assumed that the commitment has been made at the highest possible level and that all efforts would be made to ensure that the commitment is achieved. Indeed, in case of India, a policy framework for health - National Health Policy - was laid down in 1983, five years after the Alma Ata Declaration. The Policy committed to providing health services to all by 2000, along the lines of the Alma Ata Declaration. However, it has been criticized for lacking specific measures to achieve broad stated goals, for failing to integrate health services with wider economic and social development, for the lack of nutritional support and sanitation and for the poor participatory involvement at the local level. Though the Policy was framed at the Central Government level, in India health is a state subject. The Indian constitution charges the states with "the raising of the level of nutrition and the standard of living of its people and the improvement of public health". The Central Government attempts to influence public health through the five-year plans, coordinated planning with the states, and through sponsoring major health programs. For most national health programmes government expenditures are jointly shared by the central and state governments. Goals and strategies are set through central-state government consultations of the Central Council of Health and Family Welfare. Central government efforts are administered by the Ministry of Health and Family Welfare, which provides both administrative and technical services and manages medical education. States provide public services and health education(Bhat & Jain, 2004).

Status of Public Healthcare in India

Public health expenditure has been grossly inadequate right from the 1940s. The government has been spending less than private expenditures on health. The Bhore Committee report presented in 1946 stated that per capita private expenditure on health was Rs. 2.50 compared to a state per capita health expenditure of just Rs. 0.36 which was 1/7th of private expenditures. In the 1950s and 1960s private health expenditure was 83 per cent and 88 per cent of total health expenditure respectively. At the time of laying down the National Health Policy in 1983, health care expenditures varied greatly among the states and union territories, from Rs. 13 per capita in Bihar to Rs. 60 percapita in Himachal Pradesh and Indian per capitaexpenditure was low when compared with other Asian countries outside of South Asia. Although government health care spending progressively grew throughout the 1980s, suchspending as a percentage of the Gross DomesticProduct (GDP) remained fairlyconstant. In the same time period, health care spending as a share of total government spendingdecreased; and private-sector spending on health care was about 1.5times as much as government spending(Duggal et al., 1995).

Further, though states account for about three quarters of all government health expenditure, the average public expenditure by the states as a ratio of GDP has remained almost constant whereas that of the Central Government increased from 0.29 per cent in 2005-06 to 0.39 per cent in 2009-10 (Table 1). It is interesting to note thatfrom 2004-05 to 2008-09, most of the 17 major states have either reduced their healthcare expenditure as a proportion to their respective Gross State Domestic Product (GSDP) or kept it constant, thereby revealing weak governmental effortat the state-level (Table 2).

The Central Government tried to reverse this trend when it launched the National Rural Health Mission (NRHM) in April 2005 for a period of seven years. One of the visions of NRHM was to increase public spending on healthcare from around 0.9 per cent in 2004-05 of India's GDP to 2 – 3 per cent. Unfortunately, this has not been achieved so far. The National Health Accounts of the health ministry shows it increased from 0.84 per cent in 2004-05 to 1.1 per cent in 2008-09, while the Mid-Term Appraisal of the Eleventh Five Year Plan (2007-12) shows an increase from 0.96 per cent in 2005-06 to 1.09 per cent in 2009-10 (Table 1).

Table 1: Public Expenditure on Health as per cent of GDP

Year	Health				
1 cai	Centre	State	Total		
2005–06	0.29	0.67	0.96		
2006–07	0.29	0.67	0.96		
2007–08	0.32	0.70	1.02		
2008–09	0.35	0.71	1.06		
2009–10*	0.39	0.70	1.09		
Note: * Provisional.					

Source: Mid-Term Appraisal, Eleventh Five Year Plan, 2007-2012. Planning Commission, Government of India

The consequences of low public expenditure on creating a healthcare system are evident in its poorperformance on the key dimensions of coverage, purchasing and delivery.

Approximately 70 per cent of the Indian patients have not seen a doctor; there are only 0.9 beds per thousand people(World Health Organisation (a), 2012) resulting in an increase in the treatment costs; large parts of rural areas, especially in Orissa, suffer from chronic hunger, widespread anemia, intrauterine malnutrition and maternal mortality, numerous infectious diseases, poor sanitation and unhygienic water supply(India Knowledge@Wharton, 2008). 43.5 per cent and 47.9per cent of all the children under 5 years of age are underweight and stunted respectively – statistics that accentuate the poor performance further point to insufficient state action(World Health Organisation (b), 2012).

Table 2: Share of State Health Spending in GSDP (%)

States	2004-05	2005-06	2006-07	2007-08	2008-09
Andhra Pradesh	0.57	0.54	0.54	0.64	0.64
Bihar	0.71	1.13	1.02	1.08	0.79
Chhattisgarh	0.65	0.59	0.55	0.51	0.58
Gujarat	0.45	0.42	0.39	0.39	NA
Haryana	0.36	0.38	0.33	0.34	0.38
Jharkhand	0.65	1.35	1.32	1.06	1.18
Karnataka	0.55	0.55	0.57	0.68	0.66
Kerala	0.74	0.71	0.70	0.69	0.73
Madhya Pradesh	0.73	0.76	0.79	0.76	NA
Maharashtra	0.48	0.47	0.40	0.42	NA
Orissa	0.75	0.50	0.54	0.53	0.61
Punjab	0.58	0.58	0.52	0.48	0.47
Rajasthan	0.79	0.81	0.75	0.72	0.85
Tamil Nadu	0.57	0.58	0.51	0.50	0.60
Uttar Pradesh	0.74	0.95	1.24	1.07	1.03
Uttarakhand	0.96	1.26	1.18	1.17	1.11
West Bengal	0.59	0.61	0.56	0.54	0.54

Source: GSDP from CSO; State Health Spends from various issues of RBI Bulletin

Another repercussion of lower share of public health care spending, that seems to have been ignored by the governments – both at the State and the Centre – is the impoverishing effect of private payments on healthcare.Based on the analysis of the data of 60th national morbidity and healthcare survey of the National Sample Survey Organization (NSSO),it has been found that additional 6.3 percent or 63.22 million individuals fell below the poverty line in 2004 due to out-of-pocket healthcare expenditure(Berman et al., 2010). The Planning Commission reported that there were 27.8 percent or 301.72 million individuals below the poverty line in 2004-05 based on Uniform Recall Period (URP) consumption(Planning Commission, 2007).

Another analysis of the NSSO data of the 61st Round of morbidity and healthcare survey presented in August 2006 by Economic Research Foundation, New Delhi, shows that health expenditure of central and state government taken together was more than 1 per cent of GDP in the mid-1980s, but now it is only around 0.9 per cent. But the significant finding is that a greater proportion of this expenditure is taken up by revenue expenditure, specifically

for the payment of salaries, as compared to the capital expenditure that is needed for creating basic physical infrastructure(Economic Research Foundation, New Delhi, 2006).

Action in the 12th Five Year Plan

The authors of this paper are of the opinion that the arguments presented thus far when looked at in the context of the Alma-Ata Declaration of 1978 point to the government – both at the State and the Centre – abdicatingits responsibility of taking care of the health of the citizens. Consequently, the objectives of not only the Alma-Ata Declaration but also of all the subsequentpolicies and programmes implemented by the government at various levels have not been achieved. Therefore it is imperative that definitive action is taken to provide access to healthcare to each and every citizen of the country and not link it with the income profile of the population. Lancet, in January 2011, presented a Vision 2020 document titled "India: Towards Universal Health Coverage" on reforming the Indian health system. It proposes creation of Integrated National Health System with three overarching goals: ensure the reach and quality of health services to all; reduce the financial burden of healthcare on individuals; and empower people to take care of their health and hold the healthcare system accountable. It further identifies that policy makers in India are now more likely to be receptive to the demand that the state should be the guarantor and regulator of universal health care, which would be in recognition of the reality that presently most health-care provision is private. Several initiatives, ranging from major national programmes to state pilot projects, show an increasing commitment towards a strengthened public health sector. In order to correct the anomaly of the past, a deadline oriented approach – quite similar to the Alma Ata Declaration - has been suggested wherein targets have been laid down on service delivery; health financing; human resources for health; health information system; drugs and technology; governance; and consensus building(Reddy et al., 2011).

The government at the Centre, through the Planning Commission, seems to have absorbed the recommendations while raising the issues in identifying the approach towards the 12th Five Year Plan that has commenced from April 2012. The thrust areas that have been identified include improving the quality of health services through NRHM; increasing the focus on preventive aspects of healthcare like drinking water, nutrition, better maternal and child services and immunization; reducing the shortage of qualified medical personnel; and using Public-Private Partnership (PPP) initiatives in the delivery of primary, secondary and tertiary healthcare thus increasing the efficiency. It is indeed heartening to note that the expenditure on health by the Center and States is sought to be increased from the 1.4 percent (1.8 percent including drinking water and sanitation) at the end of the 11th Five Year Plan to 2.5 percent of the GDP by the end of the 12th Five Year Plan(Planning Commission, 2011). Though this is inadequate, it would be advisable that the States work towards not only realizing this target but also exceeding it.

Some alternatives to ameliorate

- 1. *A segmented approach*: It is extremely important that the planners segment the needs for healthcare and ensure that the delivery of quality and affordable healthcare is matched with the needs. A framework, similar to Maslow's Need Hierarchy, has been proposed by IBM Institute of Business Values withfive levels of healthcare needs:
 - i. Environmental health needs comprising clean water, adequate food and nutrition, clean air and adequate sanitation;
 - ii. Basic healthcare needs such as immunizations and preventive screenings:
 - iii. Medically necessary needs for treating acute, episodic illness, injury and chronic disease;

- iv. Health enhancements that consist of treatments that are not strictly medically necessary but improve overall health and the quality of life like cosmetic and LASIK surgeries;
- v. Optimal health that requires a higher and more holistic understanding of health in which individuals attain optimal physical and mental health.

The framework further emphasizes that first three needs should take precedence over the subsequent two. It also proposes that the publicly funded healthcare services should be focused mainly on India's poor. The policy perspective for the upper and the burgeoning middle classes should be to lay down the regulatory structure for the private sector to provide the quality and affordable health care services (Aparajithan et al., 2008).

2. *Increase the number of doctors and paramedics*: Lack of trained medical practitioners is as an important reason for the gap in demand and supply of health care in India, especially in rural areas. Increasing the numbers of doctors and clinicians can go a long way in bridging this gap. The veracity of this argument is established by the success experienced in countries like Cuba and China.

The Cuban model of health care delivery, called as the 'family doctor programme', has been studied and cited by many researchers and international bodies like the WHO as a success story that can be emulated by the developing countries(Bulletin of the World Health Organisation, 2008)(Keim, 2010)(Huebner, 2010)(Maya, 2009). Areas of success include control of infectious diseases, reduction in infant mortality, establishment of a research and biotechnology industry, and progress in control of chronic diseases(Cooper et al., 2006).

China had similar experience in increasing the number of doctors for its population especially in rural areas. The central government in China started a scheme of 'barefoot doctor'in 1950s. The term 'barefoot doctor' became a popular usage to refer to the village doctors who were also peasants working bare feet in the paddy fields in Shanghai. The scheme, also called as the Rural Cooperative Medical System (RCMS), focused on prevention rather than treatment, using both indigenous and western medicines. They were given short term training ranging between three to twelve months on prevention, education, maternal and child health care, and collecting disease information. Since these doctors were also peasants from the same villages where they lived, they were seen as peers and trusted for their advice. The doctors were paid out of the collective welfare funds of the commune or the village. The success of this scheme in reducing the health care costs inspired the WHO to launch 'Health for All by 2000' programme(Weiyuan, 2008). Unfortunately, the scheme ended in 1981 with the abolishing of the commune system of agricultural cooperatives. This resulted in commune funding being unavailable for compensating the village doctors, thereby forcing them to charge for their services. By 1984, the coverage of RCMS dropped from 90 per cent of the rural population to 4.8 per cent; thus the health care services in rural areas diminished and many diseases, that were earlier eradicated, re-emerged. Consequently, in 1989, the Chinese government tried to restore the cooperative health care system in the rural areas that helped the coverage to increase up to 10 per cent. But with the success of the erstwhile barefoot doctor scheme eluding the new initiatives in improving the health of rural population, the government in 2003 proposed a new cooperative medical system that is operated and funded by it. It runs

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[‡] Cuba, though about one thirtieth the size of India in terms of land area (India's land area = 3287240 sq. km; Cuba's land area = 109886 sq. km.), has been able to generate health status measures that are comparable with those of industrialized countries. According to the World Health Statistics, 2012, it has 67.2 physicians per 10000 population [pp. 122], whereas, India has only 6.5 physicians per 10000 population [pp. 124].

like an insurance program on the lines of the barefoot doctor scheme(Wikipedia contributors, 2010).

There are a few important lessons to be learnt in India from the scheme discussed above. In order to increase the number of doctors and paramedics, the authors are of the opinion that the legacy of the recommendations of Sir Joseph Bhore committee[§](Gautham & Shyamaprasad, 2010) is overturned and that the Licentiate qualification be restored. Additionally, the importance of indigenous systems of Ayurvedic, Unani, Siddh and Homoeopathy medicines in improving the access to health care should be acknowledged and encouraged further.

An important step in this direction can be the proposed three year course on rural health care called as the Bachelor programme in Rural Health Care (BRHC)(Mudur, 2010). However, the structure of the course should be flexible wherein the entire duration of this proposed course is broken up in to smaller durations and commensurate certification, ranging from a licentiate to a village doctor. Those who successfully complete the entire programme be integrated into the other longer duration courses. The critics of this proposal are not able to understand the ground realities in rural areasas providing primary health care services therein may not require five-year training. It should be seen like a specialized course meeting specific requirements of a particular section of population.

- 3. **Promotion of healthy behavior by focusing on public health**: Creating awareness on healthy ways of living is essential for disease prevention. Poor public health conditions take economic tolls in various ways, including reduced attraction for investors and tourists; continued expenditures on combating diseases (which should have become history); and labor productivity foregone. The poor pay a high price in debility, reduced earning capacity, and death. Across the world public funds are used to provide public health services but in India, it is the opposite. Public funds are utilized for providing medical services resulting in the neglect of public health services(Gupta, 2005). Further, public health is not fully recognized as a branch of learning in India. Every year we produce about 500 public health professionals only which are far less as compared to the developed countries. Institutions that will impart a quality education in public health, establish accreditation standards in public-health education, and conduct policy-shaping research need to be established under public-private partnership (Gupta, 2008).
- 4. *Harnessing the technology to bridge the delivery gap*: It is imperative to promote the use of contemporary technology solutions to bridge the gap in accessibility of health care service (Knapp et al., 2010). Telemedicine, an information and communication technology based tool, has the potential to assist in electronic delivery of diagnostic and healthcare services to remote rural population even in the absence of physical infrastructure in place.

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[§]A committee, chaired by Sir Joseph Bhore in 1946, laid the foundation of India's public health care delivery system. The committee was assigned the task of studying the state of public health in the country and recommend action for the future. It argued that India at that time had meager financial and infrastructural resources at its disposal. Therefore these resources should be used to produce only one type of doctor. In order to address the shortage of doctors the committee recommended that a 'basic' doctor of modern medicine should have a 5½ years university education. The committee reckoned that this obviated the need for the shorter duration licentiate qualification and recommended abolishing it. It also recommended that 'the indigenous systems of medicine prevalent in India had no role in the health delivery system as these were considered to be static in conception and practice.'

It can help to provide healthcare services where there is none and improve the access to healthcare where there is some. However, the implementation of technology is still in its infancy. The government should make an effort to speed up the process of rolling out the telemedicine infrastructure and not let it mired in bureaucratic sloth.

The efficacy of telemedicine system requires Knowledge Management system at the back-end. The government intends to make India a knowledge-based society and economy. Medical profession too is a generator of vast amounts of knowledge but these are highly fragmented and practitioners find it hard to keep themselves updated. Therefore the medical practitioners need access to knowledge repositories that contain online journals and databases, care protocols or guidelines for particular diseases, interpretive digests prepared by physicians, formularies of approved drugs and their use, etc. This is necessary for safeguarding the interests of a patient and providing best of healthcare (Tandon et al., 2006).

The authors wish that the policy makers take note of these suggestions, as implementing them can go a long way in improving the quality of public healthcare. This would be true for systems in urban areas as well as establishing systems of public healthcare in rural areas.

References

- Anant, T.C.A., 2012. *Millennium Development Goals India Country Report 2011*. [Online] Government of India Available at: http://www.mospi.nic.in.
- Aparajithan, S. et al., 2008. *Healthcare in India: Caring for More than a Billion*. [Online] IBM Institute for Business Values, New York Available at: http://www-935.ibm.com/services/us/gbs/bus/pdf/gbe03064-usen-00 hc india sum.pdf [Accessed January 2013].
- Berman, P., Ahuja, R. & Bhandari, L., 2010. The Impoverishing Effect of Healthcare Payments in India: New Methodology and Findings. *Economic and Political Weekly*, (April 17).
- Bhat, R. & Jain, N., 2004. *Analysis of Public Expenditure on Health Using State Level Data*. [Online] Available at: http://www.iimahd.ernet.in/faculty-and-research/research-and-publication/working-papers.html&sfield=TITLE&page=28&rnp_id=wp01831.
- Bulletin of the World Health Organisation, 2008. *Cuba's Primary Healthcare Revolution: 30 Years On.* [Online] (86(5)) Available at: http://www.who.int/bulletin/volumes/86/5/08-030508/en/index.html [Accessed December 2012].
- Cooper, R.S., Kennelly, J.F. & Ordunez-Garcia, P., 2006. *Health in Cuba*. [Online] International Journal of Epidemiology (35:817-824) Available at: http://www.ije.oxford.journals.org [Accessed December 2012].
- Duggal, R., Nandraj, S. & Vadair, A., 1995. Health Expenditure Across States Part 1. *Economic and Politicial Weekly*, (April 15).
- Economic Research Foundation, New Delhi, 2006. *Government Health Expenditure in India: A Benchmark Study (undertaken for the MacArthur Foundation, India)*. [Online] Available at: http://www.macroscan.org/anl/oct06/pdf/Health_Expenditure.pdf [Accessed May 2013].
- Gautham, M. & Shyamaprasad, K.M., 2010. The 'Basic' Doctor for Rural India: A Failed Promise? *Economic & Political Weekly*, XLV(38), pp.25-29.
- Gupta, M.D., 2005. *Public Health in India: An Overview*. [Online] Development Research Group, The World Bank (World Bank Policy Research Working Paper 3787) Available at: http://www-wds.worldbank.org/servlet/WDSContentServer/WDSP/IB/2005/12/02/000016406_20051202162921/Rendered/PDF/wps3787.pdf [Accessed May 2013].
- Gupta, R., 2008. *Healthier Future for India*. [Online] The McKinsey Quarterly (January) Available at: https://www.mckinseyquarterly.com/India/A_healthier_future_for_India_2096 [Accessed December 2011].
- Huebner, A., 2010. *Cuba Provides a Model for Health Care Reform in the US*. [Online] Available at: http://www.towardfreedom.com/health/1995-cuba-provides-a-model-for-health-care-reform-in-the-us [Accessed December 2012].
- India Knowledge@Wharton, 2008. *Medical Industry Diagnosis: Triage for Health Care and New Vision for Life Sciences*. [Online] Available at: http://knowledge.wharton.upenn.edu/india/article.cfm?articleid=4277 [Accessed 22 July 2010].
- Keim, B., 2010. What Cuba can Teach Us about Health Care. [Online] (April) Available at: http://www.wired.com/wiredscience/2010/04/cuban-health-lessons/ [Accessed January 2013].
- Knapp, T., Richardson, B. & Viranna, S., 2010. Three Practical Steps to Better Health for Africans. [Online] McKinsey Quarterly (June) Available at: https://www.mckinsey quarterly.com/Three_practical_steps_to_better_health_for_Africans_2618 [Accessed December 2011].
- Maya, C., 2009. *Cuban Model Health Project*. [Online] Available at: http://www.thehindu.com/2009/01/06/stories/2009010660530300.html [Accessed December 2012].

- Mudur, G.S., 2010. *Barefoot doc[tor]s Tied to Villages*. [Online] Available at: http://www.telegraphindia.com/1100206/jsp/nation/story 12073932.jsp [Accessed November 2012].
- Planning Commission, 2007. *Poverty Estimates for 2005-05*. [Online] Available at: http://planningcommission.nic.in/news/prmar07.pdf [Accessed May 2013].
- Planning Commission, 2011. Faster, Sustainable and More Inclusive Growth: An Approach to the Twelfth Five Year Plan. [Online] Available at: http://planningcommission.gov.in/plans/planrel/12appdrft/approach 12plan.pdf [Accessed May 2013].
- Reddy, K.S. et al., 2011. *Towards Achievement of Universal Healthcare in India by 2020: A Call for Action.* [Online] Available at: http://www.thelancet.com [Accessed May 2013].
- Tandon, B.B., Angrish, A.K. & Anand, S.K., 2006. *Knowledge Management in Managed Healthcare*. [Online] Express Healthcare Management (June) Available at: http://www.expresshealthcaremgmt.com/200606/management01.shtml [Accessed December 2011].
- Weiyuan, C., 2008. *China's Village Doctors Take Great Strides*. [Online] Bulletin of the World Health Organisation (December:86 (12)) Available at: http://www.who.int/bulletin/volumes/86/12/08-021208/en/index.html [Accessed January 2011].