Responsiveness in a District Health System: The Changing Relationship of the State with its Citizen

Gyan Prakash[1] and Avantika Singh[2]

Abstract

From the early 1990s, health reforms have been introduced in the state of Rajasthan in India, with the aim of improving the performance of the health system. The objective of this paper is to investigate whether these reforms have any consequence in terms of changing the relationship of the state with the citizen, particularly with regard to responsiveness. We present the results of an empirical study on change in responsiveness in a district health system in India over the pre-reform and post-reform periods (1991-2006). We collected data from 124 respondents through key informant survey using the snowball approach. We found that though responsiveness has improved over the period 1991-2006, the change cannot be attributed to policy interventions alone, and that exogenous variables or pull factors could have contributed to this improvement.

Keywords: Health system, responsiveness, services management.

INTRODUCTION

During the early 1990s, 'health reforms' – changes in "health policy and institutional arrangements of the health sector" (WHO SEARO, 1997) – were initiated in several states across India in order to "improve the functioning and performance of the health sector and ultimately the health status of the people" *(ibid.).* The underpinnings of these reforms emanate from the discourses on good governance and the New Public Management (NPM). This paper aims to investigate whether these reforms have any consequence in terms of changing the relationship of the state with its citizen, particularly in terms of responsiveness, which refers to the ability of the health system to fulfill the legitimate expectations of individuals regarding the health system, and has been recognized as a key indicator of health systems performance (WHO, 2000). In this paper, we present the results of an empirical study on change in responsiveness of the health system towards patients/clients in a district

---

[1] Faculty Member, School of Management Sciences, Tezpur University, Tezpur 784 028, India. Mobile: +91-9450001514. Email: gyanprakasha@yahoo.com
[2] Faculty Member, Department of Policy Studies, TERI University, New Delhi 110 003, India. Mobile: +91-9968381455. Email: avanttika@yahoo.com

health system in India over the 15-year period between 1991 and 2006. Since the year 1991 is a milestone associated with the initiation of reforms in India, it has been taken as the beginning of the reference period. In the latter part of this study, we juxtapose the results of the empirical study against various health policy initiatives over the same period, to assess to what extent has health policy has contributed to enhancing responsiveness. The central argument of this paper is that though responsiveness has improved over the period 1991-2006, the change cannot be attributed to policy interventions alone, and that exogenous variables could have contributed to this improvement. The remainder of this paper is structured as follows. The underpinnings of reforms with respect to the state-citizen relationship, the concept of responsiveness and health policy initiatives in the study district are reviewed in the next section, followed by a description of materials and methods. In subsequent sections, the data is analyzed, results discussed, and conclusions brought out.

REVIEW OF LITERATURE

Reforms and the State-Citizen Relationship

Though there could be several roots tracing the theoretical contours of reforms, in this paper, we concentrate on two of them, namely, 'good governance' and the New Public Management (NPM), and discuss them with respect to how they describe the state-citizen relationship. Good governance, referring to the prescriptive or 'how to' approach to governance, is popular among multilateral and bilateral donors and governments. This approach is largely concerned with the exercise of political and/or administrative authority, and the changing role of the state to make markets work (CIDA, 1997; DAC-OECD, 1993; World Bank, 1992). The advocates of good governance have also acknowledged the roles of non-state actors and citizens in managing the affairs of a nation (ADB, 1995; DFID, 2006; UNDP, 1997; WHO, 1998; World Bank, 2003). The significance of democratic processes in governance is implied

when UNDP (1997) underscores the role of citizens in articulating their interests or WHO (1998) suggests transparency, accountability, participatory decision-making, consensus-orientation, and client-orientation, as defining characteristics of governance.

Through the application of the principles of managerialism and marketisation (Aucoin, 1995; Boston *et al.,* 1996; Kettl, 1997; Nagel, 1997; Osborne and Gaebler, 1992; Walsh, 1995), the New Public Management seeks to replace the *Old* Public Administration (Dunleavy and Hood, 1994). Osborne and Gaebler (1992) advocate the 'reinventing' of government through change in role from 'rowing' to 'steering', and underscore the imperative for outcome-oriented, customer-centric government. The key theme that we are emphasizing here is the transformation of the citizen into a customer of public services, who pays for public services, and hence has choice and the "exit" options (Barzelay and Kaboolian, 1990; Osborne and Gaebler, 1992). With or without being attached with the NPM, the citizen versus customer debate has been a long-standing issue (Denhardt and Denhardt, 2000, 2003; Hirschman, 1970; Mintzberg, 1996; Nye *et al.,* 1997; Osborne and Gaebler, 1992). Critics argue that this approach ignores the public interest (Kettl, 1997), and is bereft of the spirit of democratic governance (Cook, 1998; Denhardt and Denhardt, 2000; Denhardt and Denhardt, 2003; Kelly, 1998; Kettl, 1997; Terry, 1998). From an economics perspective, neither do customers act as completely rational beings (Behn, 1998), nor do markets work perfectly in case of the public services (Kelly, 1998; Kettl, 1997). Politics is about shaping and fulfillment of collective purposes of citizens (Cook, 1998), and citizens are political beings, who participate in public life (Nye *et al.,* 1997) and have "voice" (Hirschman, 1970) unlike customers who just consume public services. Thus while the notion of the customer empowers the individual through greater choice and information, it limits the meaning of democratic citizenship.

Responsiveness of the Health System

WHO's concept of responsiveness deals with the non-clinical aspects of quality of care. As illustrated in figure 1, responsiveness of health systems comprises two primary dimensions, namely, respect for persons, and client orientation (WHO, 2000). Respect for persons comprises three sub-dimensions of dignity, autonomy and confidentiality. Client orientation comprises four sub-dimensions of prompt action, quality of basic amenities, choice of care provider and access to social support during care (de Silva and Valentine, 2000; Murray and Frenk, 1999). Individuals aggregate their evaluation of these dimensions to form their perceptions of responsiveness of the health system. The definitions of various dimensions of responsiveness are summarized in table 1.

For the *World Health Report 2000,* key informant surveys (KIS) to measure responsiveness were carried out in 35 countries during 1999-2000 (Darby *et al.,* 2000; de Silva and Valentine, 2000; Valentine *et al.,* 2000). The KIS questionnaire[3] contained items to measure the seven elements of responsiveness. In these surveys, key informants were people who had knowledge of the health systems in their respective countries. These included government as well as non-government employees from ministries of finance, planning and health, provincial health authorities, research organizations, universities, private and government medical practitioners, professional bodies, patient organizations, health insurance groups, and social workers. De Silva and Valentine (2000) have documented the process of the survey, discussed the results of the KIS, and established the validity of the instrument. Valentine *et*

---

[3] For each element of responsiveness, a set of items was first presented to the respondent. The responses for each item were marked against four-point scales (ranging along 'never', 'sometimes', 'usually', and 'always'; or 'less than 25 percent', '25-49 percent', '50-75 percent' and 'above 75 percent'; or 'very poor', 'poor', 'good', and 'very good'). These item ratings were used to assess the validity of the questionnaire. After rating each set of items, the respondent was required to assign an overall rating to each element of responsiveness on a Likert-type 11-point scale of 0 to 10. The respondent was further required to assign an overall rating to the responsiveness of the health system on a Likert-type 11-point scale of 0 to 10. These ratings of each element of responsiveness and overall responsiveness on the 11-point scales were used for statistical analysis.

4

al. (2000) have estimated the responsiveness levels and distribution for 191 countries, and made recommendations for improving the methodology for measuring responsiveness. Informed by the major findings of the KIS, Darby *et al.* (2000) have described WHO's strategy on measuring responsiveness.

From India, the State of Andhra Pradesh participated in the WHO study on responsiveness. The State scored low on responsiveness, particularly on elements such as quality of basic amenities and autonomy. India has low income and health expenditure levels and high proportion of population living below the poverty line. Distribution of responsiveness is unequal, with mainly the poor and certain social groups being cited as disadvantaged. In the study by Valentine *et al.* (2000) on estimating levels of responsiveness for 191 countries, India ranked 108-110, with a responsiveness index of 5.02.

Subsequently more studies have been conducted on responsiveness. WHO (2001) has made some recommendations for strengthening KIS as a research method. One more element – communication – has been added to the 'respect for persons' aspect of responsiveness (Gostin *et al.,* 2003). A study on responsiveness in eight countries of Europe has suggested patients' desire for a more autonomous role in health care decision-making (Coulter and Jenkinson, 2005). Another study has tested the relevance of the concept of responsiveness to mental health care (Bramesfeld *et al.,* 2007). A WHO-supported multi-country general population survey found prompt attention as the most important domain, followed by dignity and communication. While, access to social support networks was identified as the least important domain (Valentine *et al.,* 2008).

Rajasthan and the Study District

    <u>A Brief Profile of Rajasthan and the Study District</u>

Located in the Northwest of the country, Rajasthan is the largest state in India in terms of area. Rajasthan is one of the states in India with low performance on health and developmental indicators. The birth rate, total fertility rate (TFR), and infant mortality rate (IMR) in Rajasthan are higher than that for the entire country[4]. While the topography of Rajasthan (almost two-thirds of the State is either desert or hilly) compounds the problem of physical access to healthcare, a number of factors such as high proportion of marginalized groups, low female literacy and unfavorable sex ratio[5], add to the complexity of social access to healthcare. The district selected for our study may be referred to as a typical district in Rajasthan as most of its health and demographic indicators are comparable to the state averages[6].

    <u>Health Policy Interventions in the Study District</u>

India has a federal polity with a strong centre. In the division of powers laid down by the Constitution of India, the states are responsible for provision of health care. 85 percent of the total public health expenditure is contributed by all the state governments combined, and 15 percent by the Union government (Ministry of Health and Family Welfare, MoHFW, 2005a). It is however, paradoxical that ever since independence, the Union government has played a

---

[4] The birth rate in Rajasthan was 28.6 per 1000 as compared to 23.8 for all India during 2005 (Indiastat, 2006), TFR was 3.7 per woman in Rajasthan as compared to 2.9 for all India during 2004 (Indiastat, 2005 and 2006), and IMR was 68 infant deaths per 1000 live births in Rajasthan as compared to 58 for all India during 2005 (MoHFW, 2005b).

[5] According to the 2001 Census, Scheduled Castes and Scheduled Tribes together make up 29.8 percent of the population of the state as compared to 24.4 percent for all India, just 43.9 percent of the female population is literate in Rajasthan as compared to 53.7 percent in the whole of India, and the sex ratio is 922 females per 1000 males in Rajasthan as compared to 933 for the whole of India (Registrar General of India, RGI, 2001).

[6] In the study district, the sex ratio is 936 females per 1000 males as compared to the State average of 922, the literacy rate is 52.4 percent, with female literacy pegged at 32.3 percent, the corresponding figures for Rajasthan being 60.4 percent, and 43.9 percent, respectively. The population of Scheduled Castes is 19.2 percent and that of Scheduled Tribes is 12.04 percent in the district as compared to the State averages of 17.2 percent and 12.6 percent, respectively (RGI, 2001).

predominant role in health policy formulation, and the states have largely been responsible for policy implementation. Health policy is implemented by breaking down the policy objectives into programs, which are further broken down into implementable projects and schemes. Various health interventions implemented in the study district over the period 1991-2006 are summarized in the appendix to this paper. For the purpose of analysis, we have grouped the various health interventions into four categories, namely, those supported by the Government of India (GoI), those supported by GoI and donors, those supported by Government of Rajasthan (GoR), and those supported by GoR and donors.

Research Gap

The study of responsiveness of the health system is still in a nascent stage, and most of the literature has developed out of the researches carried out by the WHO. However, this set of research measures responsiveness at a point of time, and there are no studies on change in responsiveness over two time periods. Neither are there any published studies on responsiveness in any district health system in India. We argue that the theoretical underpinnings of health policy interventions aimed at improving the responsiveness of the health system emanate from the state-citizen relationship in the good governance and NPM discourses. However, this subject has not received the attention of researchers. Taking a cue from this gap in the literature, we conceptualize change in responsiveness over two time periods as the change in the relationship of the state with its citizens. By measuring the change in responsiveness over the pre-reform and post-reform periods in a district health system in India, we aim to find out whether and how the relationship of the state with its citizen has changed.

MATERIALS AND METHODS

Research Questions and Hypotheses

Through this research, we sought to answer whether the health reforms have been associated with change in responsiveness of the district health system to patients/ clients? Moving from this conceptual level statement to the empirical level, the following testable hypotheses were proposed:

Null hypothesis H_{01}: There is no relationship between responsiveness and its elements over the pre-reform and post-reform periods (1991 and 2006).

Alternate hypothesis H_{A1}: There is a relationship between responsiveness and its elements over the pre-reform and post-reform periods.

Null hypothesis H_{02}: There is no change in responsiveness between the pre-reform and post-reform periods (1991 and 2006).

Alternate hypothesis H_{A2}: There is a change in responsiveness between the pre-reform and post-reform periods.

Key Informant Survey

Key informant surveys have been used in various aspects of public health research, for example, as tools for planning and evaluating community health programs (Eyler *et al.,* 1999), measuring responsiveness of the health system (Darby *et al.,* 2000; de Silva and Valentine, 2000; Valentine *et al.,* 2000; WHO, 2001), developing health policy through local knowledge (Morton, 2002), and assessment of childhood disabilities (Chakraborty and Dutt, 2004). The popularity of key informant surveys lies in that they can help in reaching information-rich respondents in relatively less time at relatively less cost as compared to surveys based on probability sampling (Chakraborty and Dutt, 2004; WHO, 2001).

The WHO survey on responsiveness sought to measure responsiveness at a point in time. However, in this particular research, we brought in the temporal dimension by including a before-after (pre-reform and post-reform) comparison. We asked the respondents a set of questions on responsiveness in 1991, and repeated the same set of questions for responsiveness in 2006. The schedule consisted of two sections, namely:

   i. Key informant survey on responsiveness in 1991.

  ii. Key informant survey on responsiveness in 2006.

We collected primary data from 124 key informants using a schedule. Key informants were people who in our assessment were capable of providing information on the performance of the health system, on the basis of their background, knowledge or experience. The key informants belonged to the following groups:

    i. Government officials (health, administration, police, education, women and child development and other departments; school and college teachers; researchers).

   ii. NGO workers.

  iii. Political representatives.

  iv. Farmers[7]/community members.

To begin with, we identified senior officials in government departments at the district and sub-district levels as key informants. We identified additional respondents through our professional judgment and knowledge as well as through snowballing. The purpose of the survey was to reach a diverse set of respondents. No specific preference was accorded to selecting respondents from any particular department or sector.

---

[7] These are members of the community who are also users of health care services. However, they are grouped as 'farmers' because we have followed an occupation-based grouping for classifying our respondents.

Document Research

Document research involves post facto analysis of social data that was generated at an earlier point in time (Hakim, 1987), and is quite popular in policy analysis[8]. We obtained documents in the form of policy statements, implementation strategies, guidelines, evaluation reports, performance reports, important orders issued by the government, project proposals, project implementation plans, copies of legislation and annual reports from various officials at the state level as well as at district level.

Data Analysis

The responsiveness data was transformed into natural log to normalize it, and put through statistical analysis using Systat. Reliability was assessed through split halves method and internal consistency method (using Cronbach coefficient alpha). The types of descriptive statistics used in this research to summarize and describe data include mean, standard error, and parametric tests including correlation, t-test, analysis of variance (ANOVA), F ratio, multiple regression, and p-value. In the latter part of the research, we analyzed the policy documents to investigate the Government of Rajasthan (GoR) has undertaken which policy interventions to improve responsiveness.

---

[8] Yin (1982) stresses that not only field observation and recording verbal communication, but also reports, operational procedures and news reports are a useful source of evidence for policy analysis. Statements issued by government officials, policy documents and reports, and media reports are used in post facto policy analysis to collect evidence about the agent's behaviour and to construct a narrative such that a coherent picture of the policy process emerges (Allison and Zelikow, 1999). Evidence about the beliefs of policy elites can be obtained through content analysis of policy documents (Sabatier and Jenkins-Smith, 1993).

RESULTS AND DISCUSSION

Study on Responsiveness

Sample Characteristics

The sample consisted of 108 males (87 percent) and 16 females (13 percent). About 34 percent of the key informants were from government, nearly 31 percent were farmers/ community members, slightly over 23 percent were nongovernmental employees, and slightly over 12 percent were political representatives. The occupation-wise distribution of the sample is depicted in table 2. The difficulty of measurement through seeking users' opinions has been well-documented in the literature (Schneider and Palmer, 2002). We would like to proceed with the caveat that this sample is small and non-probabilistic and therefore, the results need to be interpreted with utmost care.

Reliability Analysis

A validated scale available from WHO (de Silva and Valentine, 2000) was used for measuring responsiveness. Internal reliability of the responsiveness scale was examined using the Cronbach alpha coefficients as depicted in table 3. The results indicate that the responsiveness scale proposed by WHO (2000) is a reliable instrument returning an overall Cronbach alpha of ~ 0.7. Hair *et al.* (2005) report that a Cronbach alpha of 0.7 and above is an indicator of reliability.

Mean Values of Responsiveness for Various Occupational Groups

We transformed the data into natural log to fulfill the assumptions of normal distribution (Hair *et al.,* 2005). The mean values (in natural log) for responsiveness during the two periods, namely 1991 and 2006, for each occupational group, are presented in table 4. In 1991, the means for overall responsiveness were highest for political representatives,

followed by government employees, nongovernmental employees and farmers/community members. These results indicate that the health system is more responsive to political representatives. In 1991, government and nongovernmental employees rated the health system higher on responsiveness in comparison to farmers/community members. This indicates that the health providers may be more responsive to more educated people.

In 2006, the means for overall responsiveness in descending order were for political representatives, nongovernmental workers, farmers/community members and government employees. While political representatives continued to rate the health system highest, the rating by government employees was lowest. This could mean that though the health system has improved in responsiveness, government employees may be 'harsher' raters or that the improvement in responsiveness of the health system is only marginal. Higher rating by farmers/community members could mean that since the health system has improved in responsiveness (even though marginally), it has been perceived as a major improvement over 1991, and therefore rated higher than that by other groups. Moreover several policy initiatives have been taken over the period, directed at improving access to health care services particularly for weaker sections[9].

The change in ratings of responsiveness by various occupational groups, (on a scale of 0 to 10), over the period 1991-2006, are illustrated in table 5. The various elements have been rated on a scale of 0 to 10. For the purpose of analysis, a score between 0 and less than 2 has been termed as 'poor', between 2 and less than 4 as 'moderate', between 4 and less than 6 as 'average', between 6 and less than 8 as 'good', and between 8 and 10 as excellent.

---

[9] These include among other interventions Janani Suraksha Yojana (JSY), Mobile Health Camps Scheme, projects for tribal development and desert region, Sanjeevani Project, Chief Minister's Jeevan Raksha Kosh (CMJRK), Chief Minister's Relief Fund (CMRF), Medicare Relief Card, Family Welfare Pension Scheme, and Compensation Scheme.

The mean values (in natural log) for various elements of responsiveness of the health system in the study district of Rajasthan for two different periods, 1991 and 2006, are depicted in table 6. Further the mean values have been retransformed by computing their antilog. The change in ratings of various elements of responsiveness and overall responsiveness, on a scale of 0 to 10, over the period 1991 to 2006, are illustrated in table 7.

Each of the five sub-elements of dignity indicated significant improvement during 2006 as compared to the year 1991. The rating of the health system in terms of treating patients with dignity improved from 3.91 to 6.27 on a scale of 0 to 10, indicating improvement from moderate to average. Each of the three sub-elements of autonomy indicated significant improvement in 2006 as compared to 1991. The rating of the health system in terms of providing autonomy to patients improved from 3.50 to 6.18 on a scale of 0 to 10, indicating improvement from moderate to average. Each of the three sub-elements of confidentiality indicated significant improvement in 2006 as compared to the year 1991. The rating of the health system in terms of maintaining confidentiality of patient information improved from 3.97 to 6.42 on a scale of 0 to 10, thereby indicating improvement from moderate to average. Each of the four sub-elements of prompt attention showed significant improvement in 2006 as compared to the year 1991. The rating of the health system in terms of giving prompt attention to patients improved from 4.108 to 6.32 on a scale of 0 to 10, thereby indicating improvement from moderate to average. Each of the three sub-elements of access to social support networks during inpatient care showed significant improvement in 2006 as compared to the year 1991. The rating of the health system in terms of patients having access to social support networks improved from 6.18 to 7.66 on a scale of 0 to 10, which indicates that access to social support networks during care is tending from average to good. Each of the

seven sub-elements of quality of basic amenities in health care units showed significant improvement in 2006 as compared to the year 1991. The rating of the health system in terms of quality of basic amenities improved from 3.91 to 5.96 on a scale of 0 to 10, which indicates improvement tending from moderate to average. Each of the three sub-elements of choice of care provider showed significant improvement in 2006, as compared to the year 1991. The rating of the health system in terms of choice of care provider improved from 4.02 to 5.73 on a scale of 0 to 10, which indicates that choice of care provider is average.

The overall responsiveness of the health system showed significant improvement in 2006 over the period 1991. The rating of the health system in terms of overall responsiveness increased from 4.49 to 6.72 on a scale of 0 to 10, thereby indicating an improvement from average to good.

Correlation Study on Responsiveness

The correlation matrices for responsiveness during the years 1991 and 2006 are depicted in tables 8 and 9, respectively. The linear correlation coefficients between all possible factors were studied and found significant at $p<0.01$ for the year 1991. As depicted in table 8, the highest amount of correlation was observed between dignity and confidentiality ($r = 0.810$), followed by correlation between autonomy and confidentiality ($r = 0.790$), and that between dignity and autonomy ($r = 0.778$). The lowest correlations were observed for access to social support networks with quality of basic amenities ($r = 0.302$), overall responsiveness of the health system ($r = 0.302$), dignity ($r = 0.356$), and autonomy ($r = 0.358$), respectively. However the relationships were significantly strong.

The linear correlation coefficients between all possible factors were studied and found significant at $p<0.01$ for the year 2006. As depicted in table 9, the highest amount of correlation was observed between dignity and overall responsiveness ($r = 0.815$), followed by correlation between quality of basic amenities and overall responsiveness ($r = 0.764$), and that between autonomy and overall responsiveness ($r = 0.752$). The lowest correlations were observed between access to social support networks and choice of care provider ($r = 0.382$), confidentiality and prompt attention ($r = 0.407$), and confidentiality and access to social support networks ($r = 0.434$). However the relationships were significantly strong.

Regression Study on Responsiveness

In order to determine the relative importance of seven sub elements contributing to overall responsiveness, they were entered into regression analysis. Regression studies revealed that in 1991, total variations present in the responsiveness of the health system explained through variables, *viz.,* dignity, autonomy, confidentiality, prompt attention, quality of basic amenities, choice of care provider and access to social support networks during care, is 75 percent. Quality of basic amenities and choice of care provider contribute significantly at $p<0.01$, and confidentiality and access to social support networks contribute significantly at $p<0.05$ level of significance. Due to multicollinearity, some variables may be explained through other variables. Variables such as dignity, autonomy and prompt attention did not contribute significantly. The results are presented in table 10. In the ANOVA table, the *F* statistic is equal to 48.319. This is greater than the critical value of 2.09, hence the results are statistically significant. The distribution is $F_{(7, 113)}$, and the probability of observing a value greater than or equal to 48.319 is less than 0.001. There is strong evidence that the regression coefficient is not equal to zero ($\beta_i \neq 0$) and there is a relationship between responsiveness (dependent variable) and predictor (independent) variables. The regression equation for

responsiveness is $Y = a + \sum_{i=1}^{7} \beta_i X_i$ where X_i's are seven sub elements of responsiveness

and β_i's are corresponding regression coefficients and a is the intercept.

Regression studies for 2006 reveal that the variables under study are able to explain 81.5 percent of the total variation in the responsiveness of the health system. Dignity and quality of basic amenities contribute significantly at $p<0.01$, and prompt attention and access to social support networks contribute significantly at $p<0.05$ level of significance. The results of regression ANOVA for responsiveness in 2006 are presented in table 11. In the ANOVA table, the F statistic is equal to 72.614. This is greater than the critical value of 2.09, hence the results are statistically significant. The distribution is F (7, 115), and the probability of observing a value greater than or equal to 72.614 is less than 0.001. There is strong evidence that the regression coefficient is not equal to zero ($\beta_i \neq 0$). There is a relationship between responsiveness (dependent variable) and predictor (independent) variables and this relationship is stronger in comparison to 1991.

Policy Analysis

Table 12 illustrates to what extent health policy interventions have addressed the elements of responsiveness of the health system. From the table it is evident that most health interventions focus on improving promptness of attention, quality of care and choice of care provider. For example, the objective of Janani Suraksha Yojana (JSY) is to provide 24x7 obstetric care; the objective of National Anti-Malaria Programme (NAMP) is early detection and prompt treatment of malaria; and the objective of health camps is to improve access and availability of health services. Interventions such as Integrated Population and Development Project (IPD Phase I and II), and Reproductive and Child Health Programme Phase-II (RCH-

II) aim to improve quality of RCH services. Interventions such as JSY, Mother NGO Scheme, Service NGO Scheme, National Blindness Control Programme (NBCP), National AIDS Control Programme (NACP), Revised National Tuberculosis Control Programme (RNTCP), Enhanced Malaria Control Programme (EMCP), RCH-II, and Compensation Scheme aim to improve choice of care providers by involving NGOs and private-for-providers in service delivery. It is quite obvious from table 12 that aspects of responsiveness such as dignity, autonomy, confidentiality and access to social support networks have largely been left unaddressed by health policy.

We suggest that there can be at least two ways of improving responsiveness of the health system, namely inside-out and outside-in. Inside-out implies implementation of health policy interventions aimed at making the health system more responsive to citizens. Outside-in, on the other hand means that citizens make demands on the health system and cause it to become more responsive. Increase in responsiveness due to push factors or inside-out and pull factors or outside-in is illustrated in figure 2. Policy interventions directed at improving responsiveness elements such as prompt attention, quality of basic amenities and choice of care provider, have been implemented in Rajasthan. However, we found that no health intervention has focused on responsiveness elements such as dignity, autonomy, confidentiality and access to social support networks. Thus, the improvement in responsiveness over the pre-reform and post-reform period cannot be attributed to health policy interventions alone or the inside-out perspective. Therefore, it is our surmise that the reported enhancement in responsiveness could be the result of exogenous variables or pull factors, and could be explained by the outside-in perspective.

CONCLUSION

The comparative statistical analysis of responsiveness over the pre-reform and post-reform periods (1991 and 2006) in a district health system of Rajasthan reveals that responsiveness has improved significantly over the two periods. However, the means for overall responsiveness varied among different occupational groups. This implies that either the perceptions of different groups about responsiveness of the health system vary, or that the health system may be more responsive to certain groups, such as the politically active or the educated. The data analysis revealed that six elements of responsiveness, namely, dignity, autonomy, confidentiality, prompt attention, quality of basic amenities and choice of care provider indicated improvement from moderate to average, while access to social support networks during care indicated improvement from average to good. Overall responsiveness changed from moderate to good. The linear correlation coefficients between all possible factors of responsiveness were found significant at $p < 0.01$ for the years 1991 and 2006. Regression ANOVA indicated a relationship between responsiveness and its elements, though the relationship in 2006 was stronger as compared to that in 1991. We established reliability of the responsiveness scale developed by WHO using the Cronbach alpha coefficients. We also used the WHO scale to measure change in responsiveness over two time periods, and found that it can be applied for analyzing changes in responsiveness for two periods.

Since overall responsiveness is a key indicator of health systems performance, this research indicates the need for designing and implementing policy interventions that enhance the overall responsiveness of the health system towards patients/ clients. We found that at present, some elements of responsiveness, namely, dignity, autonomy, confidentiality and access to social support networks, have hardly been addressed through any health policy

intervention. In this paper, we also sought to conceptualize change in responsiveness over time as the change in the relationship of the state with its citizen. Since there has been an improvement in overall responsiveness of the district health system to patients/clients, we argue that the state has become more responsive to the citizens. This is in line with the arguments which suggest that reforms of the good governance type place the citizen at the centrestage of governance, or reforms of the NPM type that transform the citizen into a customer of public services who has greater information and choice.

The study of responsiveness offers a rich agenda for future researchers. Researchers may study change in responsiveness over time, or differences in responsiveness of the health system to various occupational groups or social groups, such as the poor, the socially backward, and women. They may study differences in responsiveness of health providers in the public vis-à-vis the private sector, or different aspects of health care, such as reproductive and child health or mental health care. They may also study the relative importance of various elements of responsiveness based on users' perceptions. Researchers may also carry out extensive district-level surveys and develop rankings of district health systems on responsiveness. Such ranking could serve as a useful indicator of the performance of the health system. Researchers may also develop methodology for measuring responsiveness based on patient exit interviews. They may also explore further the conceptualization of change in responsiveness as the change in the relationship of the state with its citizen.

REFERENCES

Allison, G.T. & Zelikow, P. (1999). Essence of decision. 2nd ed. New York: Longman, New
Longman.

Asian Development Bank. (1995). Governance: Sound development management – The
elements of good governance. Manila: ADB.

Aucoin, P. (1995). The new public management: Canada in comparative perspective.
Montreal: Ashgate Publishing Company.

Barzelay, M. & Kaboolian, L. (1990). Structural metaphors and public management
education. Journal of Policy Analysis and Management. 9(4), 599-610.

Behn, R.D. (1998). What right do public managers have to lead? Public Administration
Review. 58(3), 209-224.

Boston, J., Martin, J., Pallot, J. & Walsh, P. (1996). Public management: The New Zealand
model. Oxford: Oxford University Press.

Bramesfeld, A., Klippel, U., Seidel, G., Schwartz, F.W. & Dierks, M-R. (2007). How do
patients expect the mental health service system to act? Testing the WHO responsiveness
concept for its appropriateness in mental health care. Social Science and Medicine,
doi:10.1016/j.socscimed.2007.03.056.

Canadian International Development Agency. (1997). Redefining the concept of governance.
Gatineau, Quebec: Canada.

Chakraborty, S. & Dutt, D. (2004). Rapid assessment of childhood disabilities through key
informant approach. Indian Paediatrics. 41(10), 1064-1066.

Cook, B.J. (1998). Politics, political leadership, and public management. Public
Administration Review. 58(3), 225-230.

DAC-OECD. (1993). DAC orientations on participatory development and good governance.
Paris: DAC-OECD.

Darby, C., Valentine, N., Murray, C.J.L. & de Silva, A. (2000). World Health Organization

    (WHO): Strategy on measuring responsiveness. GPE Discussion Paper Series No. 23.

    Geneva: WHO.

Denhardt, R.B. & Denhardt, J.V. (2000). The new public service: Serving rather than

    steering. Public Administration Review. 60(6), 549-559.

Denhardt, J.V. & Denhardt, R.B. (2003). The new public service: Serving, not steering.

    Armonk: M.E. Sharpe.

de Silva, A. & Valentine, N. (2000). Measuring responsiveness: Results of a key informants

    survey in 35 countries. GPE Discussion Paper Series No. 21. Geneva: WHO.

DFID. (2006). Eliminating world poverty: Making governance work for the poor. A white

    paper on international development. Available at:

    http://www.dfid.gov.uk/wp2006/default.asp Viewed May 30, 2007.

Dunleavy, P. & Hood, C. (1994). From old public administration to new public management.

    Public Money and Management. 14(3), 9-16.

Eyler, A.A., Mayer, J., Rafii, R., Housemann, R., Brownson, R.C. & King, A.C. (1999). Key

    informant surveys as a tool to implement and evaluate physical activity interventions in

    the community. Health Education Research. 14(2), 289-298.

Gostin, L., Hodge, Jr., J.G., Valentine, N.B. & Nygren-Krug, H. (2003). The domains of

    health responsiveness: A human rights analysis. EIP Discussion Paper No. 53. Geneva:

    WHO.

Hair, Jr., J.W., Anderson, R.E., Tathan, R.L. & Black, W.C. (2005). Multivariate data

    analysis. 5th ed. New Delhi: Pearson Education.

Hakim, C. (1987). Research design: Strategies and choices in the design of social research.

    New York: Routledge.

Hirschman, A.O. (1970). Exit, voice and loyalty: Responses to declines in firms,

    organizations, and states. Cambridge: Harvard University Press.

Indiastat. (2005 and 2006). Selected state-wise total fertility rate in India

    (1988 to 2004). Rajya Sabha unstarred question No. 4745, dated 06.05.2005. & Lok

    Sabha unstarred question No. 161, dated 22.11.2006. Available at:

    http://www.indiastat.com/india/ShowDataSec.asp?secid=369063&ptid=17795 Viewed

    June 15, 2007.

Indiastat. (2006). State-wise birth rates in India (2003 to 2005). Ministry of Health and

    Family Welfare, Govt. of India. & Rajya Sabha unstarred question No. 1258, dated

    04.08.2006. Available at:

http://www.indiastat.com/india/ShowDataSec.asp?secid=390929&ptid=17791 Viewed June

    15, 2007.

Kelly, R.M. (1998). An inclusive democratic policy, representative bureaucracies, and the

    new public management. Public Administration Review. 58(3), 201-208.

Kettl, D.F. (1997). The global revolution in public management: Driving themes, missing

    links. Journal of Policy Analysis and Management. 16(3), 446-462.

Mintzberg, H. (1996). Managing government, governing management. Harvard Business

    Review. May-June, 75-83.

MoHFW. (2005a). National Rural Health Mission (2005-2012) mission document. New

    Delhi: MoHFW.

MoHFW. (2005b). State-wise infant mortality rate by sex and residence in India (2005).

    Available at:

    http://www.indiastat.com/india/ShowDataSec.asp?secid=409099&ptid=17794 Viewed

    June 15, 2007.

Morton, L.W. (2002). Building local knowledge for developing health policy through key

   informant interviews. Journal of Extension. 40(1). Available at:

   http://www.joe.org/joe/2002february/a7.html Viewed May 20, 2007.

Murray, C.J.L. & Frenk, J. (1999). A WHO framework for health system performance

   assessment. GPE Discussion Paper No. 6. WHO: Geneva.

Nagel, J.H. (1997). Radically reinventing government: Editor's introduction. Journal of

   Policy Analysis and Management. 16(3), 349-356.

Nye, J.S., Zelikow, P.D. & King, D.C. (Eds.). (1997). Why people don't trust government.

   Cambridge: Harvard University Press.

Osborne, D. & Gaebler, T. (1992). Reinventing government: How the entrepreneurial spirit is

   transforming the public sector. Reading: Addison-Wesley.

RGI. (2001). Primary census abstract: Census of India 2001. Available at:

   http://www.censusindia.net/results/pca_main.html Viewed January 26, 2007.

Sabatier, P.A. & Jenkins-Smith, H.C. (1993). The advocacy coalition framework:

   Assessment, revisions and implications for scholars and practitioners. In P.A. Sabatier &

   H.C. Jenkins-Smith (Eds.). Policy change and learning: An advocacy coalition approach.

   Boulder: Westview Press.

Schneider, H. & Palmer, N. (2002). Getting to the truth? Researching user views of primary

   health care. Health Policy and Planning. 17(1), 32-41.

Terry, L.D. (1998). Administrative leadership, neo-managerialism, and the public

   management movement. Public Administration Review. 58(3), 194-200.

Valentine, N.B., de Silva, A. & Murray, C.J.L. (2000). Estimating responsiveness: Level and

   distribution for 191 countries: methods and results. GPE Discussion Paper Series No. 22.

   Geneva: WHO.

Valentine, N., Darby, C. & Bounsel, G.J. (2008). Which aspects of non-clinical quality of

    care are most important? Results from WHO's general population surveys of ''health

    systems responsiveness'' in 41 countries. Social Science and Medicine. 66, 1939-1950.

UNDP. (1997). Governance for sustainable human development: A UNDP policy document.

    Available at http://magnet.undp.org/policy/summary.htm Viewed August 28, 2003.

Walsh, K. (1995). Public services and market mechanisms: Competition, contracting and the

    new public management. London: Macmillan Press.

WHO SEARO. (1997). Public private sector partnerships for health: Role of governments.

    New Delhi: WHO SEARO.

WHO. (1998). Good governance for health. Geneva: WHO.

WHO. (2000). World health report 2000. Health systems: Improving performance. Geneva:

    WHO.

WHO. (2001). Key informant survey 2001. Summary report on KIS 2001 survey

    implementation. Available at

    www.who.int/.../summaryreports/Summary%20Report%20on%20KIS%202001%20Surv

    ey%20Implementation.pdf Viewed May 19, 2007.

WHO. (2002). World health report 2002. Reducing risks, promoting healthy life. Geneva:

    WHO.

World Bank. (1992). Governance and development. Washington, D.C. The World Bank.

World Bank. (2003). World development report 2004: Making services work for poor people.

    Washington, D.C.: The World Bank.

Yin, R.K. (1982). Studying the implementation of public programs. In W. William (Ed.).

    Studying implementation: Methodological and administrative issues. Chatham: Chatham

    House.

APPENDIX

#	Health Intervention	Policy Objective	Implementation Mechanism
A.	*Government of India-Supported Health Interventions*		
1.	Janani Suraksha Yojana (JSY)	Reduce maternal mortality	- Financial support to Below Poverty Line (BPL) women for undergoing institutional delivery - 24x basic obstetric care at Primary Health Centres (PHCs) and Community Health Centres (CHCs) - Involvement of private sector health institutions through reorganization/ accreditation.
2.	Mahila Swasthya Sangh (MSS)	Reduce maternal mortality	Organizing meetings of women in villages
3.	Partnership with Parivar Seva Sanstha (PSS), an NGO	- Population stabilization - Improvement in reproductive health of women	- Financial support to NGO (PSS) for creation of infrastructure for provision of Antenatal Care (ANC), Postnatal Care (PNC), Family Welfare (FW) services, immunization, and other Reproductive Health (RH) services
4.	National Leprosy Eradication Programme (NLEP)	Reduce incidence and impact of leprosy	- Identification and treatment of leprosy patients - Prevention of disability
5.	National Maternal Benefit Scheme	Reduce maternal mortality	Financial assistance to BPL women for maternity care
6.	Social Security Scheme	Improve availability of health services	Finance for creation of infrastructure, purchase of ambulances, generators, Operation Theatre (OT) equipment, drugs, supplies and Information, Education and Communication (IEC) activities
7.	Mobile Health Camps Scheme	Improve access to health care	NGOs involved in organizing camps
8.	Mother NGO (MNGO) Scheme	- Population stabilization - Improve Reproductive Child Health (RCH)	- Financing and networking through MNGOs - Increase availability of services among marginalized groups/ areas through Field NGOs
9.	Service NGO (SNGO) Scheme	Improve RCH services	- Increase availability of comprehensive package of RCH services - Partnership with NGOs at CHC/ Block PHC level
B.	*Government of India and Donor-Supported Health Interventions*		
10.	Multi-Drug Therapy (MDT) for Leprosy	Reduce incidence and impact of leprosy	- Identification and treatment of patients - Prevention of disability
11.	National Blindness Control Programme (NBCP)	Reduce prevalence of blindness	Cataract surgery by government, NGOs and private sector
12.	National AIDS Control Programme (NACP)	Arrest the spread of HIV/AIDS	- IEC - Promote condom use - Blood safety - Care and support to people living with HIV/AIDS - Targeted interventions for high risk groups
13.	School AIDS Education Project	Arrest the spread of HIV/AIDS	Improve awareness levels of HIV/AIDS among school-going adolescents through IEC and essay competition
14.	Revised National T.B. Control Programme (RNTCP)	TB control	- Identification and treatment of new cases - Achieve conversion of positive cases to sputum negative - Involvement of government, NGOs, private doctors and private unqualified providers in the program
15.	Enhanced Malaria Control Project	Malaria control	- Financial support - Selection of malaria link volunteers - Supply of rapid testing kits, blister packs, insecticide-treated nets
16.	Integrated Population and Development Project (IPD) Phase-I	Improve RCH	- Initiate services for prevention and treatment of Reproductive Tract Infections (RTIs) - Training of trainers - Interventions to improve quality of RCH - IEC through camps and school education programs - Improve socioeconomic status of women - Reproductive health of adolescents
17.	IPD Phase-II	Population stabilization	- Improve availability of RH services - Strengthen policy at State level

#	Health Intervention	Policy Objective	Implementation Mechanism
			- Improve quality of RH services - IEC - Advocacy and rights-based approach
18.	Reproductive and Child Health Programme Phase-I (RCH-I)	- Reduce maternal and child mortality - Population stabilization	- Strengthen infrastructure - Training - Appointment of contractual staff - 24x7 delivery services at PHCs and CHCs - Organizing camps - Outreach services - IEC
19.	RCH Phase-II (RCH-II)	Reduce infant and maternal morbidity and mortality	- Strengthen infrastructure at primary level - Develop human resources - Improve RH services in tribal and urban areas - Strengthen project management structure - Improve quality - Strengthen managerial processes - Improve coverage of ANC, institutional deliveries, emergency obstetric care (EmOC), PNC - Increase coverage of complete immunization, newborn care, protection from childhood diseases, breastfeeding. - Increase safe abortion services, reduce prevalence of RTIs/ sexually transmitted infections (STIs) - IEC for adolescents
C.	**Government of Rajasthan-Supported Health Interventions**		
20.	Sanjeevani Project	Improve geographic access in tribal and desert areas	Organizing camps providing specialist services
21.	Chief Minister's Jeevan Raksha Kosh (CMJRK)	Improve financial access	Financial support to BPL patients suffering from serious diseases for curative care.\
22.	Chief Minister's Relief Fund (CMRF)	Improve financial access	Financial support for certain medical procedures and treatments to people above the poverty line whose annual income is not more than INR[10]24,000/
23.	Medicare Relief Card	Improve financial access	- Free services and medicines to BPL patients at public hospitals
24.	Rajasthan Medicare Relief Societies (RMRS)	Improve effectiveness of curative care	- Autonomous body known as RMRS set up in each public health facility (from PHC right upto medical colleges) - Financing through user charges - Free services and medicines to Medicare Relief Card holders
25.	National Anti-Malaria Programme (NAMP)	Malaria control	- Identify and treat malaria positive cases
26.	Seasonal Diseases Programme	Control seasonal diseases	Supply potable water
27.	School Health Programme	Improve health of school-going children	- Medical examination of students and treatment of sick students in all schools run by State government - Organizing camps in CHCs - Educate students about health and hygiene
28.	IEC Programs	Improve awareness about prevention and control of diseases	Conducting street plays, organizing fairs, distributing IEC material
29.	Family Welfare Pension Scheme	Population stabilization	Social security in old age to couples who do not pay income tax, and who underwent sterilization
30.	Compensation Scheme	Population stabilization	- Improve availability of sterilization and IUD insertion services to the poor through involvement of private for-profit providers and NGOs - 20 percent cases of sterilization and IUD to be done free for BPL patients
31.	Revamping Scheme	Improve health of urban poor	- IEC - Primary health care services - Immunization - Antenatal care
32.	Static Centres	Population stabilization	- Sterilization

---

[10] 1 US$ = INR 50 (approx).

| #	Health Intervention	Policy Objective	Implementation Mechanism
			- FW services
33.	Safe Abortion Services	Improve reproductive health of women	- Medical Termination of Pregnancy (MTP) training - Recognition to hospitals providing MTP services
34.	Jan-Mangal Scheme	Population stabilization	- Identification of couples as health volunteers known as Jan Mangal Couples to improve availability of spacing methods at village level and IEC
35.	Community-based disease surveillance (CBDS)	Reduce neonatal, child and maternal mortality	- Involve Jan Mangal Couples in reporting of deaths of neonates, children and women during/ after childbirth
36.	RCH camps	Improve RCH	Organizing camps
37.	Dai training	Reduce maternal and neonatal mortality	Training to dais
38.	Encouraging Non-Scalpel Vasectomy (NSV)	Improve RCH	NSV training to doctors
39.	Insurance cover for FW services	Population stabilization	Insurance in case of death of woman due to tubectomy, failure of sterilization, compensation to clients for undergoing sterilization
40.	Cash prizes	Population stabilization	Best performing Gram Panchayat, Panchayat Samiti, district, private clinic, government hospital, high-performing employees
41.	Rajiv Gandhi Population Mission	Reduce total fertility rate, infant mortality rate, maternal mortality ration and improve couple protection rate	- Fulfill the unmet need for FW services - Improve quality through better management practices
42.	Universal Immunization Programme	Reduce infant and maternal mortality	Immunization of pregnant women and children to protect them from vaccine preventable diseases
43.	Pulse Polio Immunization	Eradicate polio	Immunization of children aged 0-5 years to protect them from polio
44.	Hepatitis B vaccination	Improve children's health	- Immunization
45.	Diarrheal Disease Control Programme	Improve children's health	- Distribute ORS packets - Treat diarrhea cases - Educate mothers about diarrhea
46.	Acute Respiratory Infection (ARI) Control	Improve children's health	- Make available cotrimoxazole tablets - Treat ARI - Educate mothers about ARI
47.	Vitamin A drops programme	Improve children's health	Provide vitamin A drops
48.	Prevention of neonatal mortality	Reduce infant mortality	- Antenatal care to pregnant women - Safe deliveries - Newborn care - Referral of newborn children with complications
D.	*Government of Rajasthan and Donor-Supported Health Interventions*		
49.	Rajasthan Health Systems Development Project	Strengthen secondary level care	- Construction and renovation of health facilities - Improve availability of drugs - Capacity building - 24x7 services at least in one hospital in each Block of the State - Effective waste disposal
50.	Mother and Child Health Day	Improve maternal and child health	- Organizing Mother & Child Health Day - Provision of RCH services
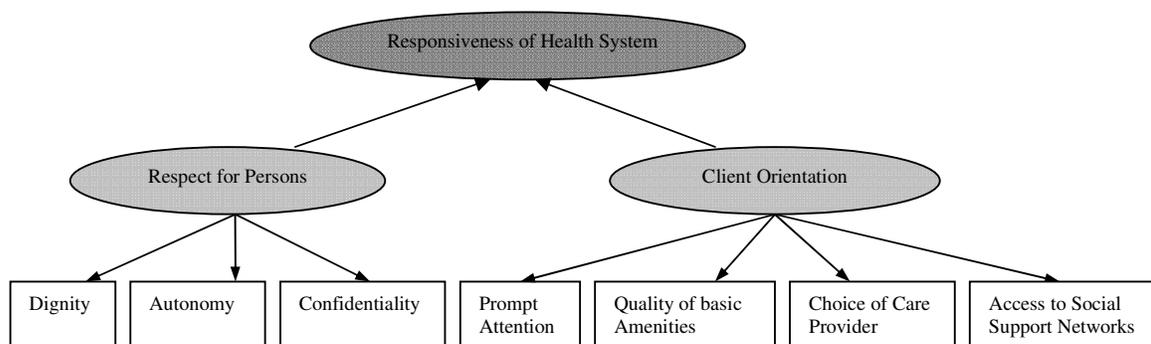
Figure 1: Conceptualization of Responsiveness of the Health System

Table 1: Elements of Responsiveness of the Health System

#	Element of Responsiveness	Description
	Respect for Persons	
1.	Dignity	The treatment of patients in a respectable manner when they come in contact with the health system, and whether the human rights of patients especially with regard to diseases such as AIDS or leprosy are safeguarded in the health system.
2.	Autonomy	The patients' right to refuse treatment, or opt for alternative treatment(s).
3.	Confidentiality	Maintaining the secrecy of the communication between the doctor and the patient, and the safeguarding of medical records.
	Client Orientation	
4.	Prompt Attention	The accessible location of health facilities and minimal waiting times.
5.	Quality of Basic Amenities	The quality of non-clinical aspects of the health system, such as cleanliness of the facility, adequate furniture and quality of meals.
6.	Choice of Care Provider	Choice of health facility, choice of provider and opportunity to seek a second opinion.
7.	Access to Social Support Networks During Care	The integration of community interactions with health care activities in an effort to improve patient well-being.

Source: de Silva and Valentine, 2000; Murray and Frenk, 1999.

Table 2: Distribution of the Sample for the Study on Responsiveness and Voice

Occupation	Number of Respondents (N=124)	Percent of Total (N=124)
Government Employees	42	33.87
Political Representatives	15	12.10
Nongovernmental Employees	29	23.39
Farmers/Community Members	38	30.64

Table 3: Results of the Test for Reliability of the Responsiveness Scale for the Years 1991 and 2006

Dimensions	Cronbach's Alpha			
	Split Half Method		Internal Consistency Method	
	1991 (Part 1, Part 2)	2006 (Part 1, Part 2)	1991	2006
Dignity (5 Items)	.861 and .779	.891 and .891	.907	.933
Autonomy (3 Items)	.881 and 1.000	.889 and 1.000	.908	.886
Confidentiality (3 Items)	.828 and 1.000	.782 and 1.000	.904	.856
Prompt Attention (4 Items)	.820 and .822	.881 and .878	.790	.894
Access to Social Support Networks (3 Items)	.786 and 1.000	.869 and 1.000	.790	.893
Quality of Basic Amenities (7 Items)	.914 and .861	.944 and .924	.946	.963
Choice of Care Provider (3 items)	.855 and 1.000	.747 and 1.000	.888	.795
Importance of Dimensions	.893 and .790	.864 and .751	.919	.897

Table 4: Distribution of the Means for Responsiveness in 1991 and 2006

Occupation	Mean of Overall Responsiveness Rate 1991	Mean of Overall Responsiveness Rate 2006
Government Employees	1.584	1.761
Political Representatives	1.707	2.119
Nongovernmental Employees	1.487	2.031
Farmers/Community Members	1.316	1.871

Table 5: Change in Rating of Responsiveness by Various Occupational Groups over the Period 1991-2006

Occupation	Rating of Health System									
	0 to 2		3 to 4		5 to 6		7 to 8		9 to 10	
	Poor		Moderate		Average		Good		Excellent	
Government Employees				▨	▮					
Political Representatives					▨		▮			
Nongovernmental Employees					▨		▮			
Farmers/Community Members				▨	▮					

Legend 1991 ▨ 2006 ▮

Table 6: Mean Values for the Elements of Responsiveness of the Health System in the Study District in 1991 and 2006

Element	Mean[1] ± SE		p-value[2]
	Year 1991 n = 111	Year 2006 n = 115	
Treat Patients with Respect	0.678 ± 0.034	1.012 ± 0.024	0.00
Safeguard Human Rights of Patients with Communicable Diseases such as AIDS or Leprosy	0.604 ± 0.038	0.960 ± 0.027	0.00
Patients Encouraged to Discuss Their Concerns Freely	0.625 ± 0.039	0.990 ± 0.029	0.00
Patients Encouraged to Ask Questions About Disease, Treatment and Care	0.589 ± 0.039	0.976 ± 0.029	0.00
Respect Shown for Patient's Desire for Privacy During Treatment and Examination	0.642 ± 0.038	1.021 ± 0.025	0.00
Dignity Rate	**1.363 ± 0.039**	**1.836 ± 0.026**	**0.00**
Patients Provided Information on Alternative Treatment Options	0.512 ± 0.041	0.924 ± 0.026	0.00
Patients Consulted About Their Preferences Over Alternative Treatment Options	0.409 ± 0.038	0.911 ± 0.029	0.00
Patient Consent Sought Before Testing or Starting Treatment	0.577 ± 0.042	0.962 ± 0.028	0.00
Autonomy Rate	**1.254 ± 0.045**	**1.822 ± 0.027**	**0.00**
Consultation Carried Out in a Manner that Protects Patient Confidentiality	0.627 ± 0.042	0.940 ± 0.024	0.00
Preserve the Confidentiality of the Information Provided by the Patients	0.627 ± 0.042	0.990 ± 0.021	0.00
Preserve the Confidentiality of Patients' Medical Records	0.603 ± 0.044	0.973 ± 0.024	0.00
Confidentiality Rate	**1.380 ± 0.050**	**1.856 ± 0.023**	**0.00**
Population Served by Geographically Accessible Health Care Facilities	0.330 ± 0.039	0.889 ± 0.032	0.00
Proportion of Population Aware of Fast Access to Emergency Care	0.311 ± 0.040	0.885 ± 0.030	0.00
Reasonability of Time Spent Waiting at Health Care Units	0.583 ± 0.038	0.956 ± 0.026	0.00
Reasonability of Time Spent on Waiting Lists for Non-Emergency Surgery	0.582 ± 0.034	0.963 ± 0.025	0.00
Prompt Attention Rate	**1.413 ± 0.036**	**1.844 ± 0.028**	**0.00**
Opportunity to Patients to have Visitors During Inpatient Care	1.026 ± 0.025	1.217 ± 0.025	0.00
Opportunity to Patients to have their Personal Needs taken Care of by Friends and Family	1.091 ± 0.019	1.251 ± 0.019	0.00
Opportunity to Patients to Involve in Religious Activities	1.041 ± 0.019	1.221 ± 0.020	0.00
Access to Social Support Networks During Care Rate	**1.822 ± 0.022**	**2.037 ± 0.020**	**0.00**
Cleanliness	0.598 ± 0.039	0.960 ± 0.029	0.00
Maintenance of Buildings	0.622 ± 0.039	0.978 ± 0.028	0.00
Adequacy of Furniture	0.632 ± 0.039	1.001 ± 0.025	0.00
Nutrition and Edibility of Food Provided to Inpatients	0.618 ± 0.039	0.992 ± 0.030	0.00
Access to Clean Water	0.636 ± 0.040	1.019 ± 0.028	0.00
Cleanliness of Toilets	0.506 ± 0.042	0.895 ± 0.043	0.00
Cleanliness of Linen	0.632 ± 0.039	0.937 ± 0.039	0.00
Quality of Basic Amenities Rate	**1.363 ± 0.038**	**1.786 ± 0.037**	**0.00**
Choice Between Health Care Providers in a Health Care Unit	0.554 ± 0.040	0.896 ± 0.030	0.00
Choice Between Health Care Units	0.597 ± 0.041	0.870 ± 0.022	0.00
Opportunity to See a Specialist	0.601 ± 0.041	0.903 ± 0.022	0.00
Choice of Care Provider Rate	**1.393 ± 0.042**	**1.747 ± 0.026**	**0.00**
Overall Responsiveness Rate	**1.504 ± 0.033**	**1.906 ± 0.025**	**0.00**

[1] Mean values in this table are given in natural log.
[2] If p-value < 0.05, then it is significant.

Table 7: Change in Rating of Various Elements of Responsiveness and Overall Responsiveness of the Health System in the Study District over the Period 1991-2006

Element	Rating of Health System				
	0 to 2 Poor	3 to 4 Moderate	5 to 6 Average	7 to 8 Good	9 to 10 Excellent
Dignity					
Autonomy					
Confidentiality					
Prompt Attention					
Access to Social Support Networks During Care					
Quality of Basic Amenities					
Choice of Care Provider					
Overall Responsiveness					
Legend 1991 ▢ 2006 ▩					

Table 8: Correlation Matrix on Various Elements of Responsiveness in 1991 (n=111)

	Dignity	Autonomy	Confidentiality	Prompt Attention	Access to Social Support Networks	Quality of Basic Amenities	Choice of Care Provider	Overall Responsiveness
Dignity	1.000							
Autonomy	0.778	1.000						
Confidentiality	0.810	0.790	1.000					
Prompt Attention	0.699	0.738	0.775	1.000				
Access to Social Support Networks	0.356	0.358	0.441	0.412	1.000			
Quality of Basic Amenities	0.472	0.516	0.477	0.570	0.302	1.000		
Choice of Care Provider	0.677	0.644	0.702	0.651	0.423	0.608	1.000	
Overall Responsiveness	0.668	0.657	0.711	0.712	0.302	0.732	0.742	1.000

$r_{(p<0.05)}$ = 0.174 at 125 df, and $r_{(p<0.05)}$ = 0.195 at 100 df.
$r_{(p<0.01)}$ = 0.228 at 125 df, and $r_{(p<0.01)}$ = 0.254 at 100 df.

Table 9: Correlation Matrix on Various Elements of Responsiveness in 2006 (n=115)

	Dignity	Autonomy	Confidentiality	Prompt Attention	Access to Social Support Networks	Quality of Basic Amenities	Choice of Care Provider	Overall Responsiveness
Dignity	1.000							
Autonomy	0.746	1.000						
Confidentiality	0.730	0.693	1.000					
Prompt Attention	0.522	0.504	0.407	1.000				
Access to Social Support Networks	0.510	0.544	0.434	0.534	1.000			
Quality of Basic Amenities	0.644	0.627	0.471	0.677	0.497	1.000		
Choice of Care Provider	0.614	0.636	0.566	0.538	0.382	0.572	1.000	
Overall Responsiveness	0.815	0.752	0.666	0.673	0.611	0.764	0.670	1.000

$r_{(p<0.05)}$ = 0.174 at 125 df, and $r_{(p<0.05)}$ = 0.195 at 100 df.
$r_{(p<0.01)}$ = 0.228 at 125 df, and $r_{(p<0.01)}$ = 0.254 at 100 df.

Table 10: Regression ANOVA for the Responsiveness of the Health System in the Study District in 1991

Dependent Variable: Overall Responsiveness Multiple R: 0.866 Adjusted squared multiple R: 0.734		N: 121 Squared multiple R: 0.750 Standard error of estimate: 0.173			
Effect		**Coefficient**	**Standard Error**	**t**	**P(2 Tail)**
Constant		0.599	0.132	4.521	0.000
Dignity		0.055	0.072	0.763	0.447
Autonomy		-0.018	0.062	-0.288	0.774
Confidentiality		0.159	0.066	2.412	0.017
Prompt Attention		0.142	0.077	1.852	0.067
Access to Social Support Networks		-0.155	0.078	-1.995	0.048
Quality of Basic Amenities		0.327	0.053	6.200	0.000
Choice of Care Provider		0.191	0.058	3.291	0.001
Analysis of Variance					
Source	**Sum-of-Squares**	**Df**	**Mean-Square**	**F-ratio**	**P**
Regression	10.169	7	1.453	48.319	0.000
Residual	3.397	113	0.030		

Table 11: Regression ANOVA for the Responsiveness of the Health System in the Study District in 2006

Dependent Variable: Overall Responsiveness Multiple R: 0.903 Adjusted squared multiple R: 0.804		N: 123 Squared multiple R: 0.815 Standard error of estimate: 0.117			
Effect		**Coefficient**	**Standard Error**	**t**	**P(2 Tail)**
Constant		*0.030*	*0.111*	*0.273*	*0.786*
Dignity		0.316	0.068	4.677	0.000
Autonomy		0.090	0.062	1.458	0.148
Confidentiality		0.073	0.065	1.127	0.262
Prompt Attention		0.122	0.053	2.278	0.025
Access to Social Support Networks		0.152	0.063	2.395	0.018
Quality of Basic Amenities		0.163	0.043	3.743	0.000
Choice of Care Provider		0.097	0.055	1.769	0.080
Analysis of Variance					
Source	**Sum-of-Squares**	**Df**	**Mean-Square**	**F-ratio**	**P**
Regression	6.919	7	0.988	72.614	0.000
Residual	1.565	115	0.014		

Table 12: Focus of Health Interventions on Improving Responsiveness

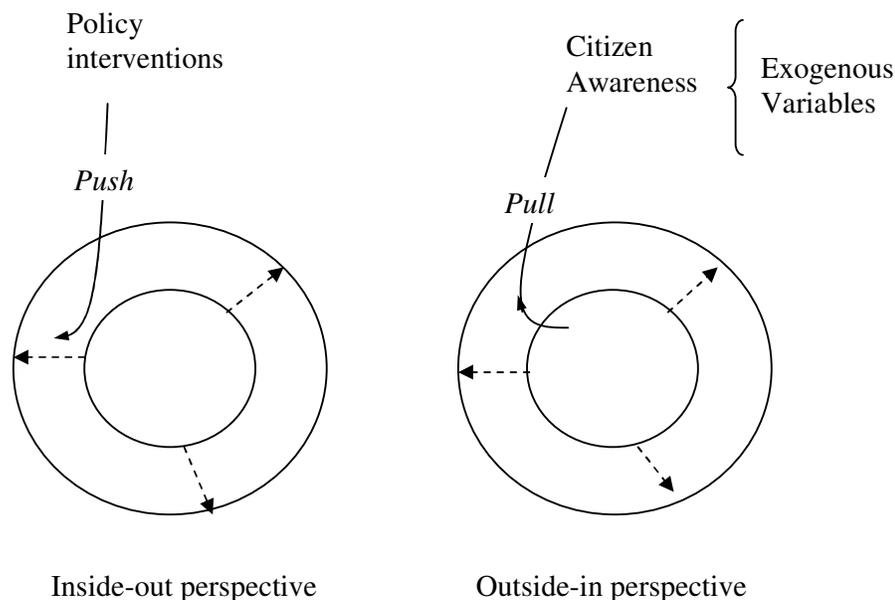| Responsiveness Elements	Health Interventions Supported by			
	GoI	**GoI + Donor**	**GoR**	**GoR + Donor**
Dignity				
Autonomy				
Confidentiality				
Prompt Attention	Janani Suraksha Yojana (JSY), Mobile Health Camps	National Blindness Control Programme (NBCP), National AIDS Control Programme (NACP), Revised National T.B. Control Programme (RNTCP), Enhanced Malaria Control Project (EMCP), Reproductive and Child Health Programme (RCH) Phase I	Sanjeevani Project, National Anti-Malaria Programme (NAMP), School Health programs, Jan-Mangal Couple Scheme (JMC)	
Quality of Basic Amenities		Integrated Population and Development Project (IPD) Phase I, IPD Phase II, RCH Phase II		
Choice of Care Provider	JSY, Partnership with Parivar Seva Sanstha (PSS), Mother NGO Scheme, Service NGO Scheme	NBCP, NACP, RNTCP, EMCP, RCH Phase II	Compensation Scheme	
Access to Social Support Networks				

Figure 2: Inside-Out and Outside-In Perspectives of Increasing Responsiveness of the Health System