



# Financing Reproductive & Child Health Care in Rajasthan

Indian Institute for Health Management Research (IIHMR)  
The POLICY Project, The Futures Group International

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The POLICY Project

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in Rajasthan

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## Foreword

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In the past five years, India's population policy has undergone profound change. There has been a shift away from numerical, method-specific family planning targets toward a broader set of goals and measures that emphasizes a wide range of reproductive and child health (RCH) services. This shift is consistent with the international consensus reached at the 1994 International Conference on Population and Development (ICPD) in Cairo: improving reproductive health is essential to human welfare and to economic development.

The increased emphasis on the delivery of RCH services which, in addition to family planning, includes antenatal and postnatal care, childbirth assistance, child health care, and treatment of reproductive tract infections (RTIs), has presented national and state decision makers with a number of key challenges. Perhaps the most important of these challenges concerns financing.

Indian state governments have limited resources to invest in RCH services. This is particularly true of poorer states like Rajasthan, the geographical focus of this volume of papers. In 1995, the government of Rajasthan (GOR) spent Rs. 24 per capita on RCH, constituting a mere one-tenth of the spending required to provide an essential reproductive health package in low-income countries as estimated by the World Bank (The World Development Report, 1993). Private households augmented this spending considerably with per capita expenditure of Rs. 96, bringing total spending on RCH in Rajasthan to about Rs. 120, or 41 percent of the World Bank estimate. Clearly, funding for essential RCH care is insufficient. Moreover, these scarce resources are not always used in the most efficient and effective manner.

This volume presents information on the current status of RCH financing in Rajasthan. It rests on a multifaceted research endeavour that encompassed:

A comprehensive literature review of health financing studies in India;

A detailed analysis of cost recovery through Medical Relief Societies;

An analysis of public sector health expenditure based on a review of government budget and expenditure reports at both the state and district levels;

An RCH expenditure and utilization survey of 1,100 households in the district of Udaipur, Rajasthan;

An inventory of public and private sector health facilities for seven districts in Rajasthan; and provider interviews on time allocation at health facilities in Udaipur, Rajasthan.

This volume is a compilation of five papers that present the findings of this research. Each paper covers a different aspect of RCH financing in Rajasthan; an analysis of the sources and uses of funds for RCH

care; expenditures on and utilization of RCH care in households; the role of the private sector in RCH service delivery; the availability and use of inputs in public sector health facilities, as they pertain to RCH; and the potential for cost recovery in the public sector. The five papers identify and discuss key issues that government officials, community leaders, and health planners need to address as they strive to improve RCH conditions in Rajasthan.

### **Structure of the Volume**

The first paper in this volume, “Financing Reproductive and Child Health in Rajasthan: the Sources and Uses of Funds,” uses the framework of national health accounts to describe resource flow for overall health and reproductive and child health. The paper applies multiple data sources—government accounts and budgets, household and facility surveys, international comparisons, and expert opinion—to estimate the sources and uses of health and RCH funds by public and private providers, recurrent and capital expenditures, and expenditure on RCH intervention type.

Paper two, “Household Expenditures on Reproductive and Child Health Care Services in Udaipur, Rajasthan,” constructs a comprehensive picture of RCH utilization and expenditure patterns among households in the district of Udaipur. The empirical information used comes from a random survey of 1,000 households. The paper addresses several questions that policy makers need to answer in order to improve the efficiency, accessibility and sustainability of RCH services. How much are households currently spending for RCH care? What types of public and private services are being utilized? Are households making appropriate use of the referral system? How do health care utilization and expenditure patterns of poor households differ from those of better-off households? What percentage of household out-of-pocket funds is spent on both, private, traditional providers, and private, modern providers? What proportion of RCH costs are allocated to consultations, drugs, tests, and transportation?

The third paper, “The Role of the Private Sector in Reproductive and Child Health Service Delivery in Rajasthan,” examines the current organization, composition, and contribution of the private sector in RCH service delivery. The paper describes the private sector from the standpoint of both provider (supply-side) and consumer (demand-side). To describe the supply-side situation, the paper uses secondary sources, including health facility census and situation analyses. The discussion of the demand side uses results from the aforementioned household survey in Udaipur.

Paper four, “An Analysis of Inputs for RCH in Public Sector Health Facilities in Rajasthan,” presents a facility-level analysis of the inputs necessary and available for delivery of RCH services in the State of Rajasthan. It uses results from two surveys: a facility survey of seven districts in Rajasthan and a time allocation study in the district of Udaipur. The surveys provide a comprehensive picture of input availability and use of provider time in government health facilities. Available inputs, namely medical staff, drugs, supplies, and equipment, are compared to service norms and standards both to assess their adequacy for delivering RCH services and to identify gaps.

The final paper, “Health Financing: Cost Recovery Policies in Rajasthan,” reviews part and ongoing initiatives undertaken by the GOR to improve the financial sustainability of the health sector. The paper describes the evolution, operations, funding, and impact of Medicare Relief Societies in Rajasthan.

These papers were first presented in a workshop in January 2000 attended by leading health policymakers and eminent researchers from the state of Rajasthan. Current versions of the papers benefited from the comments of the workshop attendees. I hope this volume will contribute towards improving the RCH financing situation of Rajasthan.

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## Preface

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Improving reproductive and child health (RCH) services in Rajasthan is essential to the social and economic progress of the state. However, policymakers and researchers alike concur that there is a lack of fundamental information and analysis of RCH financing patterns and problems. Without such analysis, efforts to improve RCH services would be severely hampered. To remedy this gap and spur dialogue about how to improve RCH financing, officials from the Government of Rajasthan, private researchers, and representatives of USAID/India agreed that the USAID-sponsored POLICY Project and its partner organization, the Indian Institute for Health Management Research (IIHMR), should quickly conduct a series of studies starting in June 1999.

The POLICY Project encourages the use of data for policy dialogue and decision making in all aspects of reproductive health programs and, hence, happily honored the request. Policy decisions based on reliable data and analysis are more likely to respond to local realities and client needs. Further, data-based decision-making encourages broader participation and transparency in policy formulation, and results in greater political and popular support of ensuing policies.

Between June and September 1999, POLICY Project staff and IIHMR researchers carried out several research activities.

The five papers in this report contain the results and implications of this research.

In January 2000, IIHMR and the POLICY Project sponsored a two-day workshop in Jaipur, where 35 experts and policymakers discussed and debated the findings presented in these five papers. It was clear from the discussions that the papers in this volume constitute an important base of information that policy makers can use in their efforts to improve RCH services in Rajasthan. On behalf of the POLICY Project and IIHMR, we are delighted to make them available to a broader audience.

**Harry E. Cross, Ph.D**  
Director, The Policy Project  
May 2000



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## Financing Reproductive and Child Health Care in Rajasthan: The Sources and Uses of Funding

Suneeta Sharma, William McGreevey, David Hotchkiss

### 1. Health Spending: India and Rajasthan

India spends 6 percent of its GDP on health care, but private-sector health spending in India and in Rajasthan, when expressed as a share of GDP, is amongst the highest in the world. The private sector accounts for 78 percent of overall health expenditures and 4.7 percent of GDP (World Bank, 1997a). The share of the private sector is somewhat less but is still above international norms when charted against the log of per capita GDP (see Figure 1) for both India as whole and for the State of Rajasthan. This substantial dependence on the private sector for health financing is even greater for reproductive health services as the discussion below will demonstrate. This situation poses serious problems for public health managers as they confront a scarcity of financial resources and the unmet health care needs of the poor. The shortage of resources in the public sector is especially acute at the state level, as states are responsible for providing health care services with primarily their own resources.

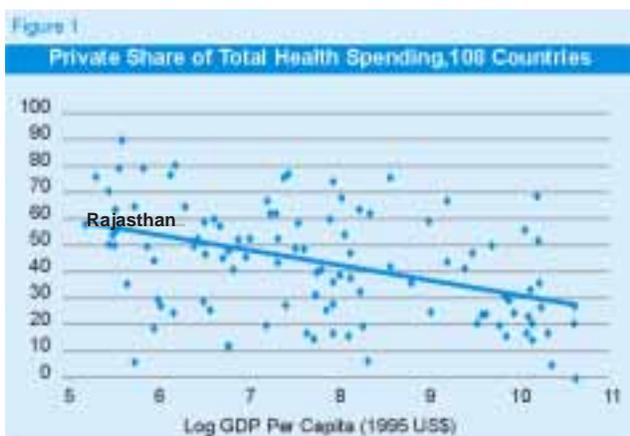
The Government of Rajasthan faces a dual challenge: increase public funding to address basic health concerns, and use currently available funds in the most effective manner. Data that illuminate the current structure of health and reproductive and child health (RCH) financing can clarify policy options. This paper describes resource flows in the health care system using the integrating framework of national health accounts, a new technique and format, to organize and compile financial data. It shows where resources come from and how they are used. Previous public expenditure studies in Rajasthan, despite their other merits, did not use the new technique. This analysis is, therefore, experimental.

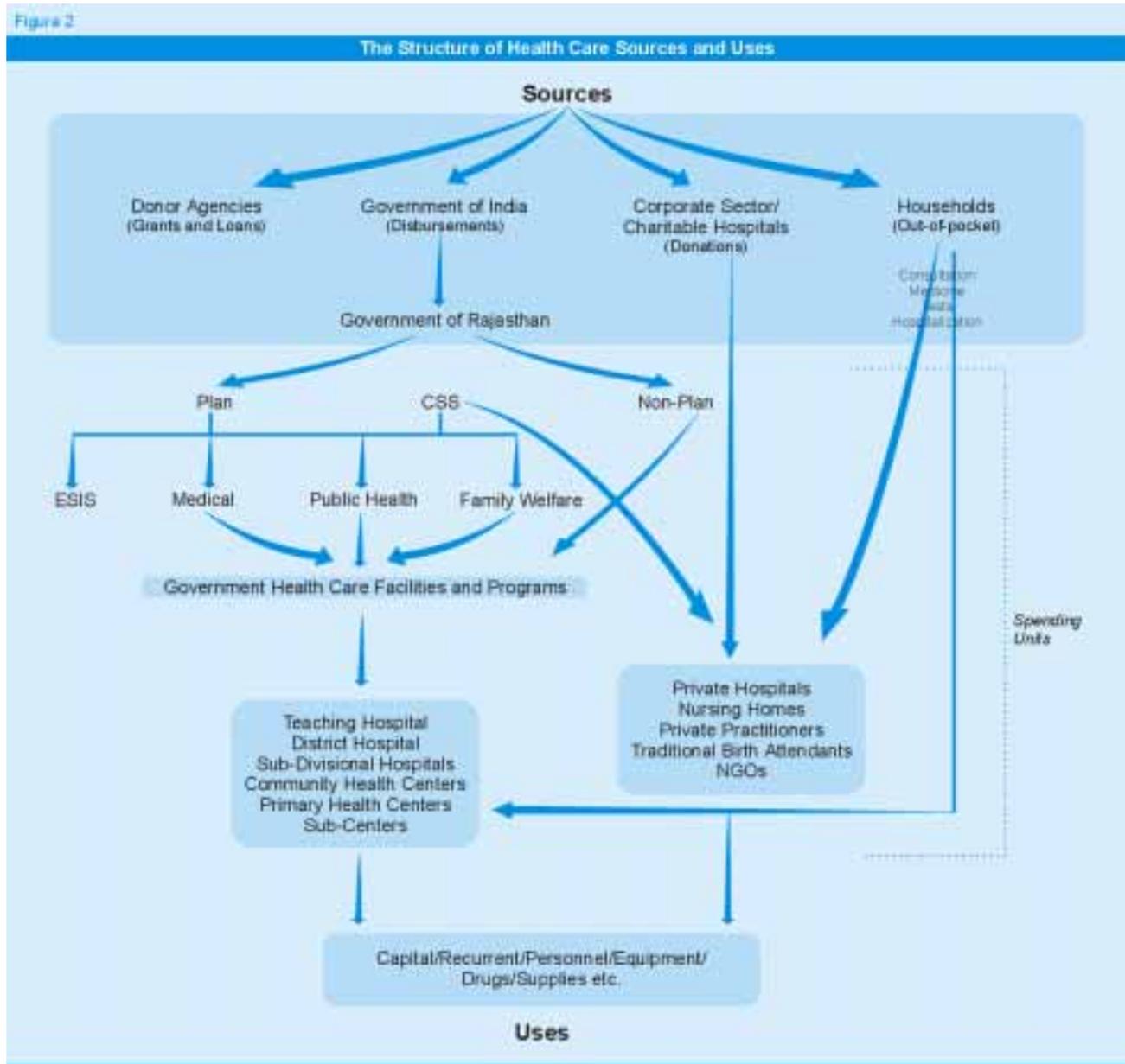
The data presented here are a syntheses of multiple sources, including government accounts, household and facility surveys, international comparisons, and expert opinions. See Appendix 1 and 2 for further explanation.

### 2. The Structure of Financial Flows in the Health Sector

The accompanying chart summarizes the flow of funds through both the public and private components of the Indian health care system (see Figure 2). It distinguishes between the source of and final use of funds. Many funds do not pass directly from the source to the actual providers of services. Instead, a significant proportion passes from one department to another before it is finally used to provide health care services.

The primary sources of funding for health and the sub-component of reproductive and child health care





include: (i) government (central and state); (ii) donor agencies; (iii) the private sector including NGOs and charitable hospitals; and (iv) households or beneficiaries. Through analysis of source and use, one can link these two sides (demand and supply) of the health care market and observe what health goods and services NGOs, households, governments, and commercial entities purchase. The pattern, composition, and rigidity of health funding and expenditures emerge from the analysis to suggest potentially fruitful policy initiatives that could reshape

cash flows to the advantage of the people of Rajasthan.

### 3. Health Accounts for Rajasthan

The State of Rajasthan spends 6 percent of its gross domestic product (GDP) on health care. The private sector in health accounts for 71 percent of overall health expenditures and 4.23 percent of state GDP. Of total state health care expenditures, 21.4 percent are for RCH care which is equivalent to 1.27 percent of state GDP (Table 1).

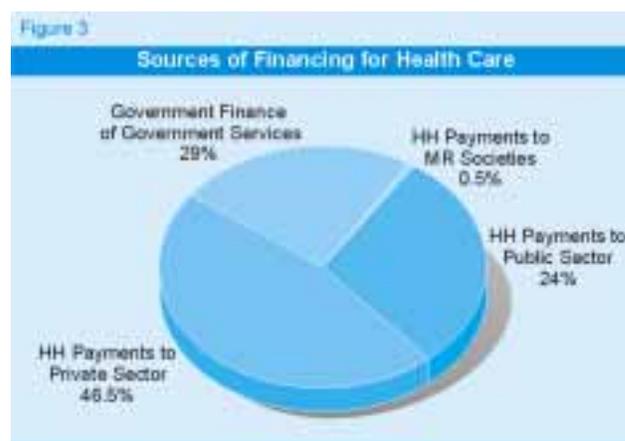
**Table 1: Total Health and RCH Expenditures and Share to GDP, 1998-99**

Sources of Funding	
State Domestic Product (SDP)	504,520 million
Total health care expenditure (public plus private)	30,033.22 million
1. Public Expenditure	8672.8
2. Household Expenditure (out-of-pocket <sup>1</sup> )	21,361.02
Total RCH expenditure (public plus private)	6426.5 million
Health as a percentage of GDP	5.95%
1. Public	1.72%
2. Household (out-of-pocket)	4.23%
RCH as a percentage of GDP	1.27%
RCH as a percentage of health expenditure	21.39%

Source: Hotchkiss, et.al. 2000 and IIMMR, 1999 a and b.

### 3.1 Sources and Uses for Health Care by Public and Private Providers

Household expenditures comprise the largest source of financing in Rajasthan's health care system (see Table 2 and Figure 3). The Government of India (GOI) and the Government of Rajasthan (GOR) with donor assistance financed about 29 percent of health care services while household spending constituted 71 percent of the total. Of the 71 percent, households allocated 65.8 percent to direct payments to private providers and 33.6 percent to payments for services initiated in the public sector. Less than 1 percent of household spending went to pay official user charges in public facilities via Medicare Relief Societies<sup>2</sup>.

**Table 2: Rajasthan Health Spending: Public and Private Providers**

Sources of Funding	% Share
Government finance of government services	28.88
Household finance of service by type	
Medicare relief society	0.41
Other government-provided services	23.89
Privately provided services	46.82
<b>TOTAL</b>	<b>100</b>

Source: See Annex tables A1 and A2

<sup>1</sup> Out-of-pocket spending purchases health services from private providers (i.e. clinics, diagnostic centers and pharmacies), items unavailable at public facilities, and transportation to reach a health facility.

<sup>2</sup> Medicare relief societies are autonomous bodies created in each tertiary and secondary level hospital, to complement and supplement the existing health care facilities.

### 3.2 Sources and Uses for Health Care by Salaries and Capital Spending

Previous tables and figures have shown crude aggregates of sources. Table 3, on the other hand, shows a matrix of cash flow from four sources to four uses. It clearly demonstrates the variety of ways funding agencies deploy their resources to buy different packages of goods and services. All data components shown here are represented as a percentage of the total value of health goods and services purchased and provided. It is an algebraic property of such a matrix that the sums of rows must equal the sums of columns. This feature can help strengthen data estimation whenever there is knowledge about some cells but not others. In such cases, the analyst can deduce or estimate the value of unknown data. This feature is especially important as a means to match household survey data with data derived separately from government budget and expenditure reports. Tables in the annex offer details in terms of rupees. The text of the annex also explains how the data in each cell was derived for source data.

To explain the matrix, consider the upper left-hand numerical cell. It presents resources the Government of India allocated to pay staff salaries. Thus, 3.5 percent of all health spending in Rajasthan was money from the Indian government to pay salaries of health workers in public facilities in Rajasthan. The next three rows

summarize expenses other than salaries. The largest amount in these 12 interior cells is the household purchase of medicines which was 36.8 percent of all health goods and services purchased and provided in Rajasthan in the year under study.

The exterior cells show row and column sums. The upper right-hand cell, for example, shows the percentage spent on salaries regardless of source of funding. At 48 percent, wages and salaries constitutes about half the cost of health care in the state. Similarly, the lower left-half cell indicates that the Government of India funded a total of 3.95% of the state's health care budget across the four categories.

Some additional features of the data in Table 3 are worth noting. Donors contributed just under 4 percent of total sector resources<sup>3</sup>. (This percentage appears in the bottom row of the matrix as the sum of spending on salaries, medicines, other recurrent costs, and capital expenditures.) The small donor contribution paid mostly for buildings and equipment and for selected pharmaceuticals and contraceptives. Medicines purchased by all sources constituted just over a third (38.04%) of all health care spending in the state. As mentioned before, about 71 percent of all spending for health care services came from households. The Government of Rajasthan accounted for 21.5 percent

**Table 3: Sources and Uses of Funds for Health Care in Rajasthan, 1998/99  
(as a percentage of total health care spending)**

Uses	Sources				
	GOI	GOR	Donors	Household	Total
Salaries	3.46	19.31	0.35	24.89	48.02
Medicines	0.11	0.64	0.45	36.84	38.04
Other recurrent	0.10	0.86	0.59	3.56	5.11
Capital expenditures	0.28	0.64	2.08	5.83	8.83
<b>Total</b>	<b>3.95</b>	<b>21.46</b>	<b>3.47</b>	<b>71.12</b>	<b>100.00</b>

Source: See Annex tables B1 to B4

<sup>3</sup> Donor support was assumed to be 12% of the total public expenditure and came from both the state plan and centrally sponsored schemes (CSS) heads (NIDI, 1999).

and the Government of India for less than 5 percent of total health care spending. State funds were largely used to meet salary and other recurrent expenditures. In the government sector, the state provided about three-fourths of public health spending while the central government, which includes external grants and loans, provided the remaining one-fourth. Donor assistance accounted for an eighth of overall public spending on health goods and services.

#### 4. RCH Accounts for Rajasthan

The preceding section reviewed the flow of funds that support all health care in Rajasthan. About one-fifth of the total (21.4 percent as shown in Table 1) supported the critically important RCH services. These services are a significant part of primary health care. They attend the immediate, basic needs of women of fertile age and of young children and infants by providing services like family planning, delivery assistance, immunizations, abortion, treatment of reproductive tract infections and others. They also support public health measures that aim to halt the spread of sexually transmitted infections including HIV/AIDS. Given the unacceptably high levels of maternal, infant, and child mortality in Rajasthan, it is important to look in detail at spending in this area to see if greater efficiency can be achieved and if perhaps more resources can be applied to achieve better results.

##### 4.1 Sources and Uses by Public and Private Providers

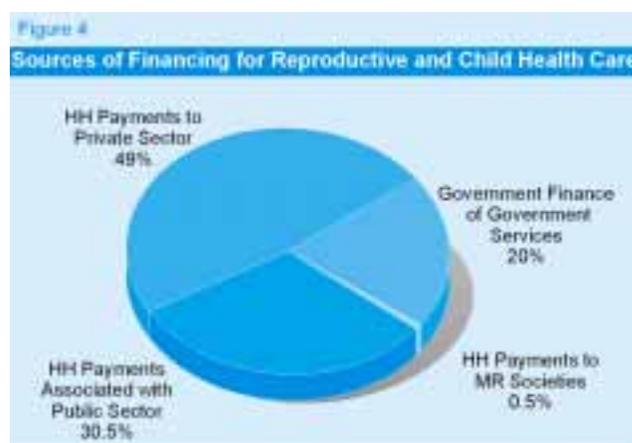
Table 4 presents spending estimates for fiscal year 1998/99 for reproductive and child health by source of funding. The data separate government and household contributions. The GOI and GOR financed only one-fifth of RCH services in the state. Note, however, that in Table 3 above, governments and donors, taken together, financed a third of all health services, a considerably larger share. This difference may be one indicator that governments are, in comparative terms at least, under-financing critically important RCH services.

**Table 4: Percentage Distribution of Government and Household Sources of Funding for Reproductive and Child Health in Rajasthan, 1998/99**

Sources of Funding	Percent
Government finance of government services	20.21
Household finance of service, by type	
Medicare Relief Society	0.45
Other government-provided services	30.59
Privately provided services	48.75
<b>TOTAL</b>	<b>100.0</b>

Source: See Annex tables C1 and C2

On an out-of-pocket basis, households financed four-fifths of RCH services. Their direct payments to private providers constituted nearly half the services financed (48.75 percent). They also made payments to public providers (30.59 percent of total RCH spending). Revenues collected as user fees through Medicare Relief Societies constituted less than 1 percent of the total. The accompanying pie chart shows the relative size of these flows (see Figure 4).



##### 4.2 Sources and Uses by Salaries and Capital Spending

For purposes of comparability with Table 3, Table 5 examines in matrix format the sources<sup>4,5</sup> and uses of funds for RCH services in the state. Detailed data that express these components in rupees and as percentage

<sup>4</sup> The total expenditure was divided under GOR, GOI and donor support on the basis of a detailed analysis of 1999 family welfare and RCH program expense budget. The donor support worked out to be 30 percent, which is consistent with the proportion of donor contribution (i.e. 25 percent) at the national level (NIDI, 1999).

<sup>5</sup> The analysis doesn't take into account in-kind allocations by the central government. In-kind contributions go directly from the GOI to districts (e.g., delivery kits delivered in-kind without financial accounting) and, as such, are not reflected in the health and family welfare expense budgets used for this analysis.

**Table 5: Sources and Uses of Funds for Reproductive and Child Health in Rajasthan  
(As % of total RCH funds)**

Uses	Sources				
	GOI	GOR	Donors	Household	Total
Salaries	8.36	2.68	1.14	31.92	44.09
Drugs and contraceptives	2.00	0.06	0.82	41.49	44.37
Other recurrent	0.45	0.15	0.95	4.79	6.34
Capital Expenditure	0.43	0.09	3.08	1.60	5.20
<b>Total</b>	<b>11.24</b>	<b>2.97</b>	<b>6.00</b>	<b>79.79</b>	<b>100.00</b>

Source: See Annex tables D1 to D4

of the state's GDP appear in the annex where their derivation is explained in detail.

These data permit the analyst to address several key questions:

- How does the level of spending for reproductive and child health in Rajasthan compare to international norms?
- What is the distribution by source of spending? Is that distribution sufficient to achieve good outcomes for reproductive and child health?
- Do the governments of India and Rajasthan provide enough public financing for reproductive and child health?

Funding must necessarily be influenced by availability of financial resources, as in those from taxes or from donor support. The data can nonetheless help clarify the options that government officials may wish to consider as they allocate scarce public resources to RCH services.

1. Rajasthan spends 1.27 percent of its GDP on RCH. This is well below the requirement for low-income countries of 1.9 percent of GDP estimated by the World Bank in its report *Investing in Health* (WDR 1993, page 117, Table 5.3). A higher level of spending would, according to this comparison, be essential to achieve better health indicators.

2. Four-fifths of spending on RCH in Rajasthan comes directly from the pockets of the beneficiaries, 11 percent is GOI money for salaries, and 6 percent comes from donors. The smallest contributor is the Government of Rajasthan which accounts for just 3 percent of all RCH spending in the state though it finances 24 percent of overall health care.
3. The very substantial dependence on direct household financing for RCH services combined with the apparent under-financing of the sector as a whole (implied in 1. above) suggest that government funding of this important area could usefully be increased.

If the Government of Rajasthan agreed to fund RCH care as it funds health spending as whole, it would add about 15 percent to the state's health budget and about 1 percent to its total budget. This small increment might be a worthy starting point to consider for increased funding for RCH.

### 4.3 Sources and Uses by Program Components

Table 6 presents the distribution of the sources and uses of RCH funds in a somewhat different way. Government and donor sources are here consolidated into a single column labeled "government." This column total is apportioned among seven program service areas. Household spending appears in Table 6 in two columns. The first of these shows household payments for services initiated in the public sector<sup>6</sup> while the second shows household payments to private institutions or individuals.

<sup>6</sup> This includes payments by public sector clients for drugs purchased from private pharmacies and informal payments to public sector providers.

**Table 6: Sources and Uses of Funds for Reproductive and Child Health in Rajasthan by Program Components (as a percentage of total RCH funds)**

Uses	Sources			
	Government	Household		Total
		Public	Private	
Antenatal care	2.71	3.89	2.37	8.97
Childbirth	4.87	4.90	5.68	15.45
Postnatal care	0.27	1.29	0.22	1.78
Family planning	3.19	0.75	2.58	6.52
Child health care	5.19	8.67	10.09	23.95
Abortion services	0.43	0.98	1.08	2.49
RTI services	3.55	10.56	26.73	40.84
<b>Total</b>	20.21	31.04	48.75	100.00

Source: See Annex tables E1 and E2

This distinction is important. It shows that public institutions receive far more of their financing from households than from governments and donors (31.04/20.21= 1.535).

The interplay between government and household spending presents both challenges and opportunities to public managers. Whenever government uses its scarce resources to purchase goods and services that private households would willingly buy, those funds are lost to alternative uses. The paragraphs below illustrate this general point.

#### **Public Spending on Child Health Care**

The government spends more than one-fourth of all its resources on child health care services. In addition, child health care ranks second with respect to total RCH spending. However, it should also be pointed out that households account for 78 percent of all such expenditures. These services consist of both preventive measures such as immunizations, nutritional monitoring, and general check-ups, and of curative services, such as the treatment of diarrhoea and other problems. Given that the provision of these services is likely to prevent more serious health problems, child health care is probably a wise investment of scarce government resources.

#### **Public Spending on Childbirth**

Although households spend a great deal on deliveries, the service ranks as the second leading use of public RCH expenditures. Government and households finance about 31 and 69 percent of expenditures respectively. Households make payments to both public (4.9 percent) and private (5.7 percent) providers. Together these payments constitute about 10 percent of all RCH spending in Rajasthan.

Over half of all rural births in Rajasthan occur at home; one may imagine that poorer households try to keep costs down by avoiding hospital charges. In many cases, home delivery proceeds without incident. However, home delivery without a skilled attendant is strongly correlated with high maternal mortality. Thus the poor may save money, but they do so at high personal risk. The GOR may wish to consider cost-effective strategies to reduce the risk of infant and maternal death associated with avoidance of delivery costs.

The frequent practice among young mothers of returning to their own families for first births is probably beneficial. Public health promotion might consider advising mothers to do so if further analysis shows that to be useful. The costs are small and the benefits may be substantial. In

contrast, training traditional birth attendants does not seem to yield many benefits (Dayaratna, et.al. 2000).

### **Public Spending on Reproductive Tract Infections**

A key finding of the analysis concerns the importance of RTI treatment in RCH financing. RTI services rank as the third leading use of public RCH funds and as the top use of funds among households. Of the total spending on RCH, RTI accounts for 41 percent of which 9 percent is spent by the government and 91 percent is spent by households. The high out-of-pocket spending on reproductive tract infection services may signal under-investment in government financed information campaigns to alert people to risks in this area.

### **Public Spending on Family Planning**

The government also spends a considerable amount on family planning services. It funds about 50 percent ( $3.19/6.52=0.49$ ) of all family planning spending, both public and private, and uses 16 percent of its available resources ( $3.19/20.21=0.16$ ) to finance family planning services. Governments and donors have a long and continuing commitment to help families achieve their fertility objectives. However, current practice may “crowd out” private spending. Crowding out means that free or nearly free public services may eventually make private services unavailable due to low demand, despite the fact that there are families willing to pay. In substituting public for private, there is no net gain in fertility reduction, but there is a real loss of public funds that could have been allocated to other high-priority programs.

### **Spending by Program Component**

Consider the final column of Table 6. It shows the distribution of both private and public spending for the seven RCH services. They are, in order of amounts spent, (1) treatment of reproductive tract infections, (2) child health care, (3) childbirth assistance, (4) antenatal care, (5) family planning, (6) abortion services, and (7) postnatal care. It is of course impossible to know what interventions will work best and which are most needed merely from looking at statistics on spending. These data may, however, help public managers to focus their attention on some key issues. Broadly the questions are the following: (1) Can public resources be better spent on prevention or on cure?

(2) Could more public money for preventive information and communication campaigns save a significant amount of the money currently spent on them in the private sector? Answering such questions requires analysis of the costs and benefits of information campaigns in the state. This area is one in which analysis before information dissemination could pay off for the state as a whole. Beneficial spending, as with that for micronutrient supplementation where needed, could improve child health later. Donor funds could be used to make a cost-effective analysis of what works best in other settings, and the findings could then be applied in Rajasthan.

### **Public-Private Interactions**

There is a common thread in several issues identified. Government resources can complement, supplement, or compete with private resources. If a government offers free services that households would otherwise buy, the funds are lost to other possible uses. If a government could spend wisely, as on information campaigns to reduce the need for private spending on abortion and RTI services, it might reduce the need for household spending and save money all round. Generally, the government should encourage efficient, private spending on reproductive health and should not try to compete. The government should not crowd out private spending but should rather complement it and make it as efficient as possible.

## **4.4 Gaps in the Analysis**

The present study is only a first step towards constructing and using a health accounts framework to analyze resource flows for RCH in Rajasthan. Future research efforts may wish to build on and expand the present analysis by doing the following:

- Accounting for philanthropic and in-kind contributions of the government, donors and NGOs, as well as for resources that are jointly allocated across several program areas;
- Describing the resources needed to achieve RCH goals relative to current flows;
- Tracking obligations and actual disbursements;
- Assessing the degree to which monies are spent as intended;

- Assessing whether expenditures have an impact on intended beneficiaries;
- Analyzing more carefully the donor component of RCH funding;
- Analyzing in greater detail the expenditure patterns of the private sector.

## 5. Implications of the Analysis

There is a growing need for public managers to analyze their own spending and how it affects private and household financial decisions. The sources and uses of funds, which are necessarily subject to continuing change over time, can be tools to analyze and clarify policy options in this key area of social services.

Comparisons of the share of government in state GDP (31 percent), of state spending as a share of total health

spending (25 percent), and of state spending as a share of reproductive and child health spending (3 percent) suggest that there are imbalances to correct. Even a very large increase in RCH spending by the Government of Rajasthan, an increase bringing its share of RCH total spending up to the level of its share in health spending, would add only one percentage point to the state budget.

Some reallocations of state spending are worth considering. More support for information and education to bring about wiser spending by households may be beneficial. Reductions in spending that 'crowds out' private spending are potentially useful. A better focus on the needs of the poor, especially those in rural areas who are far from points of service, merits review. All told, better use of even the limited resources available could contribute to greatly improved outcomes on the key indicators of maternal, infant, and child mortality.

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## Annex 1

## Estimation of 1999 Rajasthan Health Accounts

*Technical notes*

This section describes the steps undertaken to estimate the final Rajasthan health accounts for FY99. The accounts are estimated from a mix of data sources including household surveys and financial records of the Rajasthan Directorate of Health and Family Welfare. The following section deals with the technical notes on the derivation of Tables A1 through B4.

**Sources and Uses by Public and Private Providers**

The source of information on revenue generated through the 69 Medicare Relief Societies was an extensive facility survey conducted in Rajasthan. (IIHMR, 1999b).

**Table A1: Sources and Uses of Funds for Health Care in Rajasthan in millions of Rs.**

Sources of Funding	Amount
Government finance of government services	8672.2
Household finance of service by type	
Medicare relief society	123.43
Other government provided services	7176.57
Privately provided services	14061.02
<b>TOTAL</b>	<b>30,033.22</b>

**Table A2: Rajasthan Health Spending: Public and Private Providers  
(As % of total health care spending)**

Sources of Funding	Amount
Government finance of government services	28.88
Household finance of service by type	
Medicare relief society	0.41
Other government provided services	23.89
Privately provided services	46.82
<b>TOTAL</b>	<b>100</b>

Sources and Uses by Recurrent and Capital Spending

The data on government expenditure on health and family welfare in Rajasthan came from the accounts section of directorate of medical and health (IIHMR, 1999a and b). However, while it was possible to determine total expenditures by plan<sup>7</sup>, non-plan<sup>8</sup> and CSS<sup>9</sup> heads, it was not possible to determine what proportion of these were accounted for by direct or indirect support by international donors as these are not separately reported. We assumed that donor support was 12% of the total public expenditure and derived both from the state plan and CSS heads. (NIDI, 1999).

<sup>7</sup> A part of state budget that covers all expenditures, both capital and recurrent, incurred on programs and schemes that have initiated by the state during the current five-year plan.

<sup>8</sup> A part of state budget that is spent for continuation of the programs, which were initiated in the previous plan and considered as, committed liabilities of the state.

<sup>9</sup> The central plan grants that directly finance some selected programs, such as Family Welfare program.

**Table B1: Sources and Uses of Funds for Health Care in Rajasthan  
in millions of Rs**

Sources					
Uses	GOI	GOR	Donors	Household	Total
Salaries	1040.44	5800.65	104.07	7476.36	14421.51
Medicines	32.03	193.36	135.29	11065.01	11425.68
Other recurrent	30.85	257.81	176.91	1068.05	1533.62
Capital Expenditure	83.05	193.35	624.40	1751.60	2652.39
<b>Total</b>	<b>1186.36</b>	<b>6445.17</b>	<b>1040.66</b>	<b>21361.02</b>	<b>30033.21</b>

The expenditure and allocation patterns under different programs like health and family welfare suggest that GOR funds are mainly used for meeting salary (more than 90%) and operations and maintenance expenses, whereas donors give money for buildings and equipment (capital expenditure), and drugs and supplies. The donor funds are allocated under capital and recurrent accounts on the basis of the World Bank sponsored Rajasthan state health systems project. The composition of public expenditure shows that the salaries consume a major portion, i.e. about 80%, followed by the capital expenditure (10%), medicines (4%) and other recurrent expenditures (5%). The estimated composition of the expenditure is consistent with the composition of the 1999 health care budget.

**Table B2: Sources and Uses of Funds for Health Care in Rajasthan  
(in percentages)**

Sources					
Uses	GOI	GOR	Donors	Household	Total
Salaries	87.70	90.00	10.00	35.00	48.02
Medicines	2.70	3.00	13.00	51.80	38.04
Other recurrent	2.60	4.00	17.00	5.00	5.11
Capital expenditure	7.00	3.00	60.00	8.20	8.83
<b>Total</b>	<b>100.00</b>	<b>100.00</b>	<b>100.00</b>	<b>100.00</b>	<b>100.00</b>

To calculate the total household health care expenditures, we multiplied per capita health expenditures of Rs. 340.1 obtained from a recent household survey by the total 1999 population (Hotchkiss, et.al. 2000). Rajasthan spends about Rs. 26875.36 million which includes both public (Rs. 8672.2 million) and private expenditures (Rs. 18203.17 million) on RCH.

Estimates of out-of-pocket expenditures on medicines came from the household survey. The survey results reveal that medicines account for the major portion, i.e., 52% of total household spending. The remaining household expenditure is divided mainly into salary (40%) and other recurrent expenditures (6%).

We also attempted to calculate the source-and-use categories as a percentage of the total spending for health care in the State of Rajasthan (Table B3).

**Table B3: Sources and Uses of Health Care Funds in Rajasthan  
as a Percentage of Total Health Care Spending**

Uses	Sources				
	GOI	GOR	Donors	Household	Total
Salaries	3.46	19.31	0.35	24.89	48.02
Medicines	0.11	0.64	0.45	36.84	38.04
Other recurrent	0.10	0.86	0.59	3.56	5.11
Capital expenditure	0.28	0.64	2.08	5.83	8.83
<b>Total</b>	<b>3.95</b>	<b>21.46</b>	<b>3.47</b>	<b>71.12</b>	<b>100.00</b>

Table B4 also, reports the same underlying data as a percentage of the gross domestic product (GDP) of the State of Rajasthan. We used the State Domestic Product of 1999 for this purpose.

**Table B4: Sources and Uses of Funds Health Care in Rajasthan  
as a Percentage of State GDP**

Uses	Sources				
	GOI	GOR	Donors	Household	Total
Salaries	0.21	1.15	0.02	1.48	2.86
Medicines	0.01	0.04	0.03	2.19	2.26
Other recurrent	0.01	0.05	0.04	0.21	0.30
Capital expenditure	0.02	0.04	0.12	0.35	0.53
<b>Total</b>	<b>0.24</b>	<b>1.28</b>	<b>0.21</b>	<b>4.23</b>	<b>5.95</b>

## Annex 2

## Estimation of 1999 Rajasthan RCH Accounts

*Technical notes*

This section describes the steps undertaken to estimate the final Rajasthan RCH accounts for FY99. The accounts reflect a mix of data sources including household surveys and financial records of the state's directorate of health and family welfare. The following section deals with the technical notes on the derivation of Tables C1 through E2.

**Sources and Uses by Public and Private Providers**

The information source for revenue generated through the 69 Medicare Relief Societies was an extensive facility survey conducted in Rajasthan (IIHMR, 1999b). A recent household survey shows that RCH expenditures account for 23.46% of the total household expenditures (Hotchkiss, et.al. 2000). Thus 23.46% of the total revenue generated through Medicare Relief Societies was used in the table.

**Table C1: Percentage Distribution of Government and Household Sources of Funding for Reproductive and Child Health in Rajasthan, 1998/99 in millions of Rs.**

Sources of Funding	Amount
Government finance of government services	1299
Household finance of service by type	
Medicare Relief Society	28.96
Other government provided services	1965.64
Privately provided services	3132.91
<b>TOTAL</b>	<b>6426.5</b>

**Table C2: Percentage Distribution of Government and Household Sources of Funding for Reproductive and Child Health in Rajasthan, 1998/99**

Sources of Funding	Percent
Government finance of government services	20.21
Household finance of service by type	
Medicare Relief Societies	0.45
Other government provided services	30.59
Privately provided services	48.75
<b>TOTAL</b>	<b>100.0</b>

**Sources and Uses by Recurrent and Capital Spending**

The data on government expenditures on RCH in Rajasthan came from the accounts section of directorate of health and family welfare (IIHMR, 1999a and b). Detailed and disaggregated expenditure accounts for RCH services were not readily available. In order to determine the actual expenditures, it was necessary to manually review the paper records kept for each health and family welfare department, separately identifying and collating those expenditures that were related to RCH. We used an average of the last five years' (1995-99) public expenditure on RCH for calculating the plan, non-plan and CSS expenditures. The division of total expenditure under GOR, GOI and donor support on is based on a detailed analysis of 1999 family welfare and RCH program expenditure budget. The donor support worked out to be 30 percent, which is consistent with the proportion of donor contribution (i.e. 25 percent) at the national level (NIDI, 1999).

**Table D1: Sources and Uses of Funds for Reproductive and Child Health in Rajasthan in Millions of Rs**

Sources					
Uses	GOI	GOR	Donors	Household	Total
Salaries	537.45	171.92	73.27	2051.00	2833.63
Drugs and contraceptives	128.58	3.81	52.83	2666.30	2851.52
Other recurrent	28.89	9.54	61.31	307.65	407.40
Capital expenditure	27.46	5.73	198.20	102.55	333.94
<b>Total</b>	<b>722.37</b>	<b>190.88</b>	<b>385.61</b>	<b>5127.50</b>	<b>6426.36</b>

The expenditure and allocation patterns under different programs like health and family welfare suggest that GOR funds are mainly used for meeting salary (more than 90%) and operations and maintenance expenses, whereas donors give money for buildings and equipment (capital expenditure), and drugs and supplies. The donor funds are allocated under capital expenditure (51.4%), drugs and contraceptives (13.7%), salaries (19%) and other recurrent expenditures (16%) based on the expenditure compositions of the World Bank's RCH program (World Bank, 1997b). State expenditures are divided into salary (90%), capital expenditure (3%), drugs and contraceptives (2%) and other recurrent expenditures (5%). Similarly, the GOI's expenditure is also divided into salaries (74.4%), drugs and contraceptives (17.8%), capital expenditure (3.8%) and other recurrent expenditures (4%). The composition of public expenditure shows that the salaries consume a major portion, i.e. about (60%), followed by the capital expenditures (17.8%), drugs and contraceptives (14%) and other recurrent expenditures (7.7%). The composition of expenditures comes from the national family welfare and RCH programs (World Bank, 1997b). The estimated composition of the expenditure is consistent with the composition under different state programs.

**Table D2: Sources and Uses of Funds for Reproductive and Child Health in Rajasthan**

Sources					
Uses	GOI	GOR	Donors	Household	Total
Salaries	74.40	90.07	19.00	40.00	44.09
Drugs and contraceptives	17.80	2.00	13.70	52.00	44.37
Other recurrent	4.00	5.00	15.90	6.00	6.34
Capital expenditure	3.80	3.00	51.40	2.00	5.20
<b>Total</b>	<b>100.00</b>	<b>100.00</b>	<b>100.00</b>	<b>100.00</b>	<b>100.00</b>

To calculate the total household RCH expenditure, we multiplied per capita RCH expenditure of Rs. 95.8 obtained from a recent household survey by the total 1999 population (IIHMR, 1999a). Rajasthan spends about Rs. 6426.36 million which includes both public (Rs. 1299 million) and private expenditures (Rs. 5127.50 million) on RCH. The share of private contributions is 80% and that of government contributions is 20%. An analysis of national health spending also shows a similar ratio of public-private contributions (World Bank, 1997a).

Estimates of out-of-pocket expenditures on medicines came from the household survey. The survey results reveal that medicines account for the major portion, i.e., 52% of total household spending. Various studies suggest that the contributions made by the households at public and private sector hospitals in the form of user fees are used to meet salary and other recurrent expenditures. Thus, the remaining household expenditure is divided mainly into salary (40%) and other recurrent expenditures (6%).

The composition of the total RCH spending (both public and private) indicates that the salaries and drugs consume a major portion i.e. 44%, followed by, other recurrent (6%) and capital expenditure (5%).

**Table D3: Sources and Uses of Funds for Reproductive and Child Health in Rajasthan as a Percentage of total RCH funds**

Sources					
Uses	GOI	GOR	Donors	Household	Total
Salaries	8.36	2.68	1.14	31.92	44.09
Drugs and contraceptives	2.00	0.06	0.82	41.49	44.37
Other recurrent	0.45	0.15	0.95	4.79	6.34
Capital Expenditure	0.43	0.09	3.08	1.60	5.20
<b>Total</b>	<b>11.24</b>	<b>2.97</b>	<b>6.00</b>	<b>79.79</b>	<b>100.00</b>

We also made an attempt to calculate the source-and-use categories as a percentage of total spending for reproductive and child health in the state (Table D3).

**Table D4: Sources and Uses of Funds for Reproductive and Child Health in Rajasthan as a Percentage of State Gross Domestic Product**

Sources					
Uses	GOI	GOR	Donors	Household	Total
Salaries	0.1065	0.0341	0.0145	0.4065	0.5616
Drugs and contraceptives	0.0255	0.0008	0.0105	0.5285	0.5652
Other recurrent	0.0057	0.0019	0.0122	0.0610	0.0807
Capital Expenditure	0.0054	0.0011	0.0393	0.0203	0.0662
<b>Total</b>	<b>0.14</b>	<b>0.04</b>	<b>0.08</b>	<b>1.02</b>	<b>1.27</b>

Table D4 also presents the same underlying data as a percentage of the gross domestic product (GDP) of the State of Rajasthan (Table D4). The State Domestic Product of 1999 was used for this purpose.

### Sources and Uses by Program Components

Government and household funds are used to provide different RCH services, namely antenatal care, childbirth, postnatal care, family planning, child health care, abortion services and treatment of reproductive track infections. Our analysis attempted to distribute this household spending between public and private providers. The following section deals with the technical notes on the derivation of Tables E1 and E2.

**Table E1: Sources and Uses of Funds for Reproductive and Child Health in Rajasthan by Program Components in millions of Rs.**

Sources				
Uses	Government	Household		Total
		Public	Private	
Antenatal care	174	249.95	152.54	576.49
Birth delivery	312.9	314.72	365.03	992.65
Post-natal care	17.2	82.96	13.96	114.12
Family planning	205.2	48.17	165.92	419.29
Child Health Care	333.8	557.17	648.16	1539.13
Abortion services	27.5	63.16	69.58	160.24
RTI services	228.4	678.67	1717.55	2624.62
<b>Total</b>	<b>1299</b>	<b>1994.8</b>	<b>3132.74</b>	<b>6426.54</b>

A recent household survey was the source of information on per capita expenditure by service type and provider type (IIHMR, 1999a). We allocated government expenditure to different program components using the following procedure. First, we calculated an estimate of the annual number of public visits for each RCH service using household survey information. Second, because the unit costs vary considerably across services, we weighted the utilization information with service-specific estimates of the relative unit costs. Actual unit cost information was not available, so weights were based on expert opinions of the time required to provide each of the RCH services.

Sources				
Uses	Government (a)	Households Public (b)	Total Private (c)	a+b+c
Antenatal care	(Cost weight*% public sector users)* total government expenditure on RCH (13%*1299)	Per capita household expenditure on ANC in public sector* 1999 population of Rajasthan (Rs. 4.67*53523000)	Per capita household expenditure on ANC in private sector* 1999 population of Rajasthan (Rs. 2.85* 53523000)	Sum of columns
Childbirth	(24%*1299)	(Rs. 5.88* 53523000)	(Rs. 6.82*53523000)	Sum of columns
Postnatal care	(1%*1299)	(Rs. 1.55* 53523000)	(Rs. 0.26* 53523000)	Sum of columns
Family planning	(16%*1299)	(Rs. 0.9* 53523000)	(Rs. 3.1* 53523000)	Sum of columns
Child health care	(26%*1299)	(Rs. 10.41* 53523000)	(Rs. 12.1* 53523000)	Sum of columns
Abortion services	(2%*1299)	(Rs. 1.18* 53523000)	(Rs. 1.3* 53523000)	Sum of columns
RTI services	(18%*1299)	(Rs. 12.68* 53523000)	(Rs. 32.1* 53523000)	Sum of columns
<b>Total</b>	<b>1299</b>	<b>1994.8</b>	<b>3132.74</b>	<b>Total</b>

We also attempted to calculate the program by component, source and use categories as a percentage of the total spending for reproductive and child health in the Rajasthan (Table E2).

**Table E2: Sources and Uses of Funds for Reproductive and Child Health in Rajasthan by Program Components (as a Percentage of Total RCH funds)**

Uses	Sources			
	Government	Household		Total
		Public	Private	
Antenatal care	2.71	3.89	2.37	8.97
Birth delivery	4.87	4.90	5.68	15.45
Post-natal care	0.27	1.29	0.22	1.78
Family planning	3.19	0.75	2.58	6.52
Child Health Care	5.19	8.67	10.09	23.95
Abortion services	0.43	0.98	1.08	2.49
RTI services	3.55	10.56	26.73	40.84
<b>Total</b>	<b>20.21</b>	<b>31.04</b>	<b>48.75</b>	<b>100.00</b>

## Annex 3

## World Bank Tables on National Health Accounts for India

**Table F1: National Health Accounting: An Estimated “Source and Uses” Matrix  
(as a percent of total expenditures)**

Uses	Sources				
	Central Government	State and Local Government	Corporate/ 3 <sup>rd</sup> Party	Households	Total
Primary Care	4.3	5.6	0.8	48.0	58.7
Curative	0.4	3.0	0.8	45.6	49.7
Preventive and Promotive Health	4.0	2.7		2.4	9.0
Secondary/Tertiary Inpatient Care	0.9	8.4	2.5	27.0	38.8
Non-service Provision	0.9	1.6	N/A	N/A	2.5
<b>TOTAL</b>	<b>6.1</b>	<b>15.6</b>	<b>3.3</b>	<b>75</b>	<b>100</b>

Source: India: Policy and Finance Strategies for Strengthening Primary Health Care Services. World Bank Report No.13402-IN; May 1995.

**Table F2: Center and State Shares in Different Components of the Government Health Budget (1991-92)**

Component	Center's Share %	States' Share %
Hospitals	3.1	96.9
Public Health	0.0	100.0
Primary Care (Disease Control)	99.7	0.3
Family Welfare	22.6	77.4
Insurance (CGHS, ESIS)	18.2	81.8
Medical Education & Other	41.7	58.3
Administration & Other	11.0	89.0
Capital Investment	49.7	50.3

Source: India: Policy and Finance Strategies for Strengthening Primary Health Care Services. World Bank Report No.13402-IN; May 1995.

**Table F3: Share of Private Sector in Total Health Expenditures  
in Selected Countries**

Countries	Private Expenditures > 70% of total
Cambodia	90.28% (1994)
Bermuda	85.71% (1994)
Azerbaijan	81.33% (1995)
Mauritania	78.84% (1991)
Vietnam	78.84% (1993)
India	78.57% (1992)
Pakistan	77.14% (1991)
Paraguay	76.74% (1994)
Uruguay	76.47% (1994)
El Salvador	76% (1994)
Nepal	76% (1995)
Nigeria	78.57% (1994)
Thailand	73.58% (1992)

Source: Sector strategy: Health, nutrition and population. 1997. The Human Development Network. Washington: The World Bank Group.

## Household Expenditures on Reproductive and Child Health Care Services in Udaipur, Rajasthan

David R. Hotchkiss, Barun Kanjilal, Suneeta Sharma, P.R. Sodani, Gautam Chakraborty,

### 1. Introduction

An important objective of state health care systems in India is to improve health outcomes among women and children, particularly in light of renewed commitments to reproductive and child health (RCH) service delivery made at the International Conference of Population and Development in Cairo in 1994. Unfortunately, Indian state governments have very limited resources to invest in RCH services, and very little empirical information is available on the demand for them in. The budgetary constraints are more severe in economically disadvantaged states like Rajasthan where a large percentage of the population lives in poverty. Given the limited availability of health care resources, the state government of Rajasthan has expressed an interest in improving the efficiency and financial viability of RCH service delivery systems. New approaches include the decentralization of decision-making within the public health care system, the implementation of user fees in secondary and tertiary facilities, incentives for private companies to provide health insurance, and incentives for private practitioners to take on additional responsibilities in the provision of RCH services.

In discussing the benefits and pitfalls of health care proposals that could potentially have a large impact on RCH service delivery, decision-makers should have access to information about the role of households in the RCH sub-sector. Among the important, policy-relevant questions are the following:

- Are households making appropriate use of the referral system?
- How much are households currently spending for reproductive and child health care?
- How do the health care utilization and expenditure patterns of poor households differ from those of better-off households?
- What percentage of household out-of-pocket funds is spent on both private, traditional providers and private, modern providers?
- What proportion of RCH costs are allocated to consultations, drugs, tests, and transportation?

Clearly, answers to these questions are needed in order to improve the efficiency, accessibility, and financial viability of RCH service delivery.

The purpose of this study was to carry out a comprehensive investigation of RCH service utilization and expenditure patterns among households in the district of Udaipur in Rajasthan, India. The empirical information used in the analysis came from a random survey of 1,100 households administered by the Indian Institute for Health Management Research (IIHMR) in conjunction with The POLICY Project. The survey collected information on household use of RCH services and on expenses incurred as a result of use. The services analyzed were antenatal care (ANC), birth delivery assistance, postnatal care (PNC), child health care, family planning services, abortion, and treatment of reproductive tract infections (RTIs). In addition, information was collected on non-RCH illnesses and injuries in order to facilitate comparisons between the two types of services. Study findings

- What types of public and private services are being utilized?

are presented both by urban/rural and socio-economic status.

## 2. Previous Literature on Household Expenditures in India

Most prior studies that investigated health care utilization and expenditure patterns among households in India focused generally on curative care and not specifically on RCH care. Table A1 in the appendix presents a summary of the key findings of these studies with respect to the following: a) choice of health care practitioner; b) percentage of individuals who paid something for care; c) monetary cost of services per episode of illness; and d) annual expenditure per capita by households on health care services. The findings of previous household studies are discussed in this section. Three of the studies reviewed used nationally representative sample data, while the rest were based on household information.

### 2.1 Source of Treatment

Previous studies found that the private sector is an

important source of care in both urban and rural areas. Results from the 1986/87 National Sample Survey (NSS) indicate that over 76 and 81 percent of outpatients used private health care providers in urban and rural areas respectively (NSSO 1992). Private-sector utilization among inpatients was around 37 percent. Most regional-level studies showed that the share of patients using the private sector was over 70 percent with better-off socio-economic groups the more likely users (Duggal and Amin 1989; George 1997; Yusedian 1990; Sujata Rao 1997; Sodani 1997).

While none of the studies reviewed used multivariate statistical techniques to assess the determinants of private-sector utilization, it is likely that the high use of private providers was partially a response to the perception of inefficiency and poor service quality in the public sector. In economically disadvantaged states where the proportion of inpatients treated by the private sector is much lower, the high reliance on the public sector is, to some extent, attributable to the unavailability of private-sector alternatives. There are a number of reasons for seeking treatment from private health care

**Table 1: Sources of Health Care-Private versus Public**

Study	Scope of study	% Private		Note
		Urban	Rural	
NSS 42nd Round 1992	National	37	38	Inpatient
		76	81	Outpatient
Sundar 1992	National	60	48	
Sundar 1994	National			
Sodani 1997	Udaipur	52	72	
		Total		
Duggal and Amin 1989	Jalgoan	75		
George (ed.) 1997	Madhya Pradesh	72		
Yesudian 1990	Bombay	73		Short-term illness
		59		Chronic illness
		51		Catastrophic
Sujata Rao et. al. 1997	Hyderabad	75		
Kulkarni & Chitanand 1994	Maharashtra	53-63		

facilities, including good behavior of doctors, proximity to residence, hours of service, quality of services and flexible payment systems. In cases of serious illnesses, however, people prefer to avail themselves of the public sector, especially when hospitalization is required. The reasons for such a preference are the perception of public sector services as "free," the availability of high-tech medical equipment and diversified services in public facilities, and the general tendency of private providers not to deal with seriously ill patients or to refer them to public hospitals.

## 2.2 Cost of Treatment

Studies carried out at both the national and regional levels have indicated that the proportion of patients that pays for services can be quite high, ranging from 64 to 90 percent (Sundar 1992; Duggal and Amin 1989; George 1997), and that it is about the same in both rural and urban areas. All the studies reviewed except NSSO 1992 estimated both indirect costs (transport, food, rituals, gifts, and tips) as well as direct costs (consultation, hospitalization, medicines, and tests) to patients. Direct costs accounted for 69-93 percent of total costs (Duggal and Amin 1989; Sundar 1992 and 1994; George 1997; Yusedian 1990; Sujata Rao 1997; Sodani 1997), and of that, medicine and consultation fees constituted the major share. (See Table 1 in the Appendix for details.)

The studies reviewed estimated treatment costs separately by public/private sectors, urban/rural areas, inpatient/outpatient care, and severity of the illness. The results do not show consistent trends in treatment costs by source of care (public/private) or place of residence (rural/urban). In some studies, the cost of treatment in the private sector vastly exceeded the cost in the public sector (Sundar 1992, Duggal and Amin 1989, Sodani 1997). However, others reported a slightly higher cost in the public sector (NSS 1992 and George 1997). With the exception of the NSSO 1992, the literature reviewed tends to show that cost of treatment was higher in rural than in urban areas (Duggal and Amin 1989; Sundar 1992 and 1994; George 1997; Sodani 1997). (See Table 2 ; for more details see Table A1 in the Appendix.)

With respect to the severity and duration of illness, results show that treatment costs increased with severity. Yesudian (1992) reported that in Bombay, treating a catastrophic illness was 17 times more costly than treating a short-term illness and twice as costly as treating a chronic illness. Similarly, Kulkarni and Chitanand (1994) found that in Maharashtra, the treatment cost for a major illness was 12-15 times greater than the cost for a minor illness. (See Table A1 in the Appendix.)

**Table 2: Cost of Treatment**

Study	Scope of study	Cost of treatment per illness episode (Rs.)			
		Rural	Urban	Public	Private
NSS 42nd Round 1992	National	640 (a)	1053 (a)	115 (c)	85 (c)
		71 (b)	90 (b)	103 (d)	91 (d)
Sundar 1992	National	152	143	558 (e)	1876 (e)
				75 (f)	318 (f)
Sodani 1997	Udaipur	932	611	621 (c)	2051 (c)
				304 (d)	1384 (d)
Duggal and Amin 1989	Jalgoan	103	100	76	116
George (ed.) 1997	Madhya Pradesh	138	129	173	145

Notes: (a) inpatients; (b) outpatients; (c) rural; (d) urban; (e) hospitalized, rural; (f) non-hospitalized, rural.

Other research has presented interesting findings about the cost of treatment. Studies by Krishnan (1994) yielded these results.

- The cost of treatment was higher in states where public health infrastructure was least developed.
- Poor patients paid more for health care and bore the higher burden of treatment<sup>1</sup>.
- Hospitalization increased the intensity of poverty for poor families.
- Treatment in private hospitals, either as an inpatient or an outpatient, was expensive and out of reach of the poor.
- The burden of treatment was the highest for women due to the inaccessibility of affordable services.

Further analysis conducted by Gumber and Berman (1997) suggested that socio-economic status, the demographic characteristics of the individual, the type of disease, the duration of treatment, and the type of service mix used were some of the important determinants of variation in treatment cost. Another study by Gumber (1997) offered this information.

- Inpatient treatment tends to be quite expensive and burdensome.
- In both inpatient and outpatient care, the burden tends to be higher in rural areas as most rural patients have to travel to health care facilities located in urban areas.
- The financial burden of treatment on households was much higher if the patient had no insurance coverage and had a lengthy stay in a public-sector institution.
- Interstate differentials in the burden of treatment were more pronounced for inpatient treatment.
- The burden of treatment is inversely proportional to monthly per capita expenditure.

### 2.3 Per Capita Annual Expenditure

Four studies reported information on annual health care expenditure: the 1986/87 National Sample Survey (NSSO 1992), Duggal and Amin (Jalgaon, 1989), George (Madhya Pradesh, 1997), and Kulkarni and Chitanand

**Table 3: Annual Health Expenditure per Capita**

Study	Scope of study	Annual per capita health expenditure (Rs.)
NSS 42nd Round 1992	National	248
Duggal and Amin 1989	Jalgaon	182
George (ed.) 1997	Madhya Pradesh	299
Kulkarni & Chitanand 1994	Maharashtra	253, 415

(Maharashtra, 1994). Estimates ranged from Rs. 182 to Rs. 415 per capita.

Only the Madhya Pradesh and Jalgaon studies directly estimated the share of household health expenditures in total income/ expenditure. Other studies calculated this share indirectly. The proportion ranged between 5 and 15 percent in the Bombay (Yesudian 1990) and NCAER (Sundar 1992) surveys respectively. The NSS 1992 reported that health expenditures were 5.7 percent of total income. None of these studies, however, provided estimates of the total amount spent on RCH services annually.

### 2.4 Sources of Funds Used by Households for Out-of-pocket Payments

Only two studies (Sujata Rao et al. 1997 and Duggal and Amin 1989) collected information regarding the source of money that was used by households to pay out-of-pocket costs. The study by Sujata Rao et al. (1997) in Hyderabad reported that about 50 percent of the families that had at least one member with a health problem financed their health care payments with loans or by a "distress sale" of their assets. The median loan was Rs. 4000-5000 with monthly interest payments of between 3 and 5 percent. According to Duggal and Amin, 1.3 percent of all episodes of illness were partially financed with loans. During the reference period, for every Rs. 1000 of health expenditure in the sample, Rs. 156 was taken on loan to meet expenses.

<sup>1</sup> The relative burden of treatment was estimated as a ratio of treatment cost to the per capita state domestic income.

### 3. Method

#### 3.1 Survey Methodology

As previously mentioned, the analysis presented in this paper is based on a random sample of 1,100 households (6,869 individuals) in Udaipur, Rajasthan. A two-stage sampling methodology was used to select households for inclusion in the study. Using population estimates from the 1991 census, fifty primary sampling units (PSUs: Village/Wards) were selected adopting probability proportion to size (PPS) sampling. Within each PSU, 22 households were randomly selected by two methods. For villages with more than 300 households (1,500 population), the PSU was divided into two or more segments of equal size depending on the total number of households, and one segment was selected at random for the survey. Households were then randomly selected from within this segment. For villages with fewer than 22 households, all households were targeted for the survey, and the remaining households were selected from the nearest village.

Two instruments were used in the study: a household questionnaire and a women's questionnaire. Both were pre-coded with fixed-response categories and were written in English and Hindi. The household instrument contained questions on demographic characteristics including age, sex, educational attainment, marital status, occupation of each member of the household, income received from a number of alternative sources, and household assets. With respect to health status and health care utilization, information was collected on whether each member of the household had experienced any health problems within the three months prior to the survey. For those reporting health problems, information was collected on whether treatment was sought, on the choice of health care practitioner, on expenses incurred for treatment, and on the number of activity days that were lost due to illness.

The women's questionnaire was used to gather data from currently married women aged 15-49 years who were usual residents of the household. Information was collected on the number of prior births and on the number of surviving children. For those women who reported having a living child younger than two years of

age, information was collected on the utilization of antenatal care, childbirth assistance, postnatal care, and child health care services. If a woman reported utilizing health services, questions were also asked on whether care was received in the home or at a health care facility, on the type of practitioner used, and on expenditures incurred for consultations, medicine, tests, travel, and lodging. For all women 15 to 49 years of age, information was also collected on the use of family planning services, abortion services, and services used to treat reproductive tract infections. Again, information was collected on the type of care used and on expenditures incurred for consultations, family planning supplies, medicines, and tests.

The choice of Udaipur as the district of analysis was made arbitrarily by the Indian Institute for Health Management Research in consultation with the Health Secretary of Rajasthan. While there are many similarities between the health care environment in Udaipur and in Rajasthan as a whole, there is one noteworthy difference. The district has a teaching hospital that has a reputation for delivering high quality services. The presence of this hospital may have influenced utilization patterns and is one reason why the results of this study may not necessarily be true for the entire state of Rajasthan.

#### 3.2 Recruitment and Training of Enumerators

A local recruiting agency assisted with the recruitment of field staff (supervisors, editors and investigators). Preference was given to graduates who could interact with respondents in their local languages and who had field experience with health and development projects. The supervisors were selected on the basis of their skills and prior experience in conducting and supervising health surveys. An intensive training program for the interviewers and supervisors was conducted in Udaipur. The training course, conducted from June 28 through July 2, 1999, consisted of instruction on interviewing techniques and field procedures. The interviewers and supervisors were also given a brief overview of reproductive health care, the purpose of the survey, and the organizational structure of the public health care delivery system. Each item in both of the questionnaires was thoroughly discussed. Hindi versions of the survey manuals were provided to

the interviewers and supervisors for reference. Special attention was paid to the issue of non-response, to the skip patterns used in the instruments, to filter questions, to health expenditure information, to household income, and to the reproductive history of the eligible women. Mock interviews were carried out in the classroom, and the questionnaires were pre-tested in the rural and urban areas nearest to the town of Udaipur. Appropriate changes were made based on the results of the pre-tests.

### 3.3 Description of the Sample

The response rates for both the household and the women's questionnaires were high. Among households, the response rate was 100 percent in both urban and rural areas. Among eligible women in the households, the response rate was 80 percent in urban areas and 77 percent in rural areas. (See Table A2 in the Appendix.)

Almost 8 percent of household heads were members of scheduled castes, and 28 percent were members of scheduled tribes which affirms the tribal base of the district. The proportion of households from scheduled tribes was much higher in rural areas (40.6 percent) than in urban areas (2.1 percent). The educational attainment of sample individuals appeared to be better than the state average. While the urban and rural illiteracy rates in Rajasthan were estimated to be 32 and 62 percent respectively (NFHS, Rajasthan: 1992-93), the corresponding estimates in the present sample were 12 and 47 percent respectively. The strong agrarian base of the district was evident. About 84 percent of rural households reported having some agricultural land although more than 90 percent of them held less than 10 bigha only (1 bigha is equivalent to 0.33 acres). (See Table A3 in the Appendix.)

Only a limited number of income questions was asked, and respondents might have been hesitant to answer those questions truthfully, so it is likely that annual household income is underestimated in this study. Questions related to sources of income and to the relative socio-economic status of households are, therefore, more likely to provide a better indication. A high proportion of the sample reported a dependence on non-

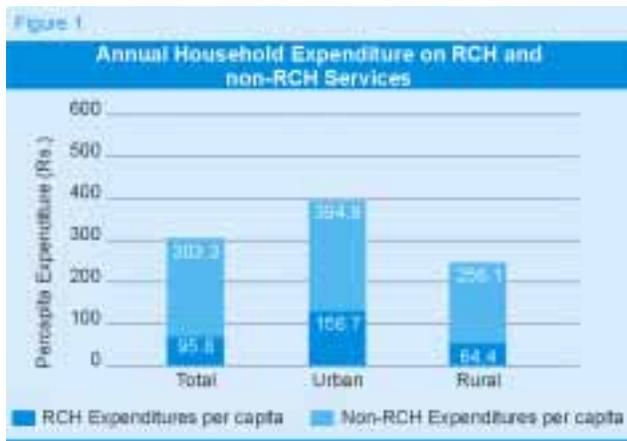
agricultural income sources (Table A3 in the Appendix). About 51 percent of all households were found to have at least one member earning wages or salaries (either on a part-time or a full-time basis), and 41 percent were engaged in business or were self-employed. The data revealed large urban-rural differences in average household income (Rs. 74,253 vs. Rs. 23,527). About 64 percent of households reported earning less than Rs. 36,000 (\$840) per year.

An important objective of the study was to investigate how health care utilization and expenditures varied by socio-economic status. To facilitate this investigation, households were ranked in ascending order of reported annual per capita income. This ranking was used to assign each household to one of three income groups. Households in the lowest two income quartiles made up the first (low) group, households in the third quartile made up the second (middle) group, and households in the highest quartile made up the third (high) group. Table A4 in the Appendix presents the percentage distribution of sample households by income group and urban/rural status. As expected, rural households were considerably more likely to be in the poorest income group than were urban households (69 percent vs. 14 percent). Similarly, scheduled tribe households were more likely to be in the low-income group than scheduled caste households or households that fell into neither category (86 percent, 47 percent, and 36 percent, respectively).

## 4. Results on Overall Health Care Expenditures

Respondents reported their expenditures on both RCH and non-RCH services based on the following recall periods: three months for non-RCH illnesses and injuries; two years for birth-related services, abortion services, sterilization services, and IUD services; three months for child health care services and the treatment of reproductive tract infections (RTIs); and one month for pill and condom purchases. Total health care expenditures were estimated by calculating annual service-specific expenditures within the various recall periods and then summing them up<sup>2</sup>.

<sup>2</sup> Because the methodology used to generate the estimates in Table A6 in the Appendix is crude, the results should be interpreted cautiously.

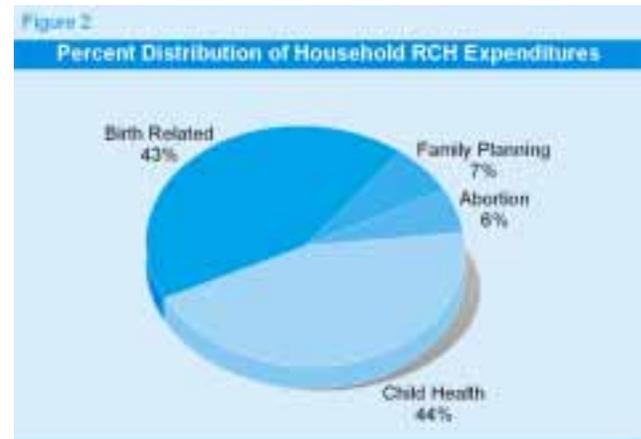


Estimated per capita household expenditure on health care was Rs. 399.1 per year. As expected, urban households spent more on health care than their rural counterparts did (Rs. 551.7 vs. Rs. 320.5). Similarly, households in higher income groups spent more than those in lower income groups (Rs. 595.6 in high-income group compared to Rs. 418.0 and Rs. 291.3 in middle and low-income groups respectively). (See Table A5 in the Appendix.)

Figure 1 shows that households spent an average of Rs. 95.8 per capita or 28 percent of total household health expenditures for RCH services. This included out-of-pocket expenditures on maternal services such as antenatal care, childbirth, and postnatal care; child health services; family planning services; RTI treatment; and abortions. In Rajasthan, out-of-pocket expenditures constituted over 80 percent of total RCH expenditures (excluding public expenditures on hospitals). Urban households spent two-and-a-half times more per capita on RCH services than did rural households, while high-income households spent more than their middle and low-income counterparts.

Figure 2 shows a percentage distribution of household expenditures by type of RCH service. The results indicate that child health care and birth-related services (which include antenatal care, delivery assistance, and postnatal care) each accounted for about a quarter of household use of RCH services. A surprising result of this study was that the treatment of RTIs accounted for almost half of all RCH expenditures. The important issue of why households spent so substantially on RTIs will

be addressed later in this paper. RCH expenditure per married woman of reproductive age (MWRA) is approximately four times higher than per capita spending on RCH. On average, a currently married woman 15 to 49 years of age reported spending Rs. 487.0 for RCH services, with urban women spending more than twice as much as their rural counterparts (Rs. 754.0 and 356.9, respectively).



#### 4.1 Non-RCH Health Care Utilization and Expenditure

Household respondents were asked about non-RCH health care services that were utilized by household members in the three months prior to the survey. This section reports results on the source of care and the level and pattern of the health care expenditures.

Sources of care are classified into three groups:

- (1) Government-includes government sub-centers (SCs), primary health centers (PHCs), community health centers (CHCs), and hospitals, as well as home visits by government medical/paramedical staff;
- (2) Private-includes care delivered in private clinics and hospitals and by trained providers in the home of the client; and
- (3) Other/traditional-includes practitioners of indigenous medicines and traditional healers.

Sources of care: Table A6 shows the percent of individuals with a health problem who used government, private, and traditional health care providers. (It should

be noted that many individuals reported using more than one type of provider.) The results indicate government and private sources were almost equally utilized; however, a slight bias in favor of public care was found among individuals in urban areas and in the two highest income groups. It is also interesting to note that a sizable portion of the population (11 percent) reported using the services of traditional providers. The higher utilization of government facilities in urban areas may partly be attributed to the presence of the aforementioned tertiary hospital in Udaipur that is easily accessible to most urban middle-income families.

*Expenditures:* Among the 761 persons who sought treatment for non-RCH illnesses, about 94 percent incurred out-of-pocket expenses either on consultation, on medicine, on diagnostic tests, on travel, or on board and lodging (Table A7 in the Appendix). On average, those who paid for services spent Rs. 705 ((\$16) per quarter. [fig1] Several interesting points emerge from the analysis.

- Irrespective of their place of residence (rural/urban), most individuals (about 94 percent) incurred some cost for treatment.
- There were substantial differences between rural and urban residents in the average expenditure: a rural patient on average paid Rs. 571 (\$13) which was more than double what the average urban resident paid (Rs. 269, or \$6). This discrepancy may largely be explained by limited market accessibility in rural areas which resulted in high travel and associated costs.
- The scenario reverses when the denominator is the total number of users instead of the total number of paying patients. Urban users then, on average, paid as much as 170 percent of what rural users paid.
- Private sources were at least 231 percent more expensive than government sources in urban areas and at least 35 percent more expensive in rural areas. It is interesting to note that in spite of higher costs, private providers in urban areas still attracted 44 percent of those who reported treating a health problem in past quarter.

*Composition of expenditure:* The composition of expenses incurred by an average paying patient is presented in Table A8. It is quite evident that the cost of medicines was the major share (61 percent) followed by consultation (23.5 percent), travel (9 percent), diagnostic tests (4 percent), and board and lodging (1.6 percent). The share of medicine was much higher for government services (76 percent) in comparison with the same for private (52 percent) and others (56 percent) indicating non-availability of drugs at government facilities.

## 5. RCH Health Care Utilization and Expenditure

The dominant role of households in the financing of RCH services underscores the importance of understanding the factors that influence out-of-pocket household expenditure. This section presents results on the extent to which women in Udaipur used RCH services, on the sources of care used, and on the expenditures they incurred.

A total of 1,159 currently married women 15 to 49 years of age were interviewed. About 58.5 percent reported that they were illiterate, with the illiteracy rate much higher in rural areas (78.5 percent) than in urban areas (19.4 percent). Only 11.6 percent had received an education above the secondary level. Most of them were housewives (55 percent), and only 10 women (0.9 percent) were engaged in industrial or white-collar jobs.

### 5.1 Maternity Health Care Services

Of the 1,159 women interviewed, 28 percent reported having at least one living child less than two years of age. Table A9 in the Appendix shows the percentage of women with a young, living child by urban/rural status and by age group. As expected, women 20 to 29 years of age were more likely to have a toddler than other women, and rural women in every age category were more likely to have a young child than their urban counterparts. Around 89 percent of respondents reported that they had previously given birth.

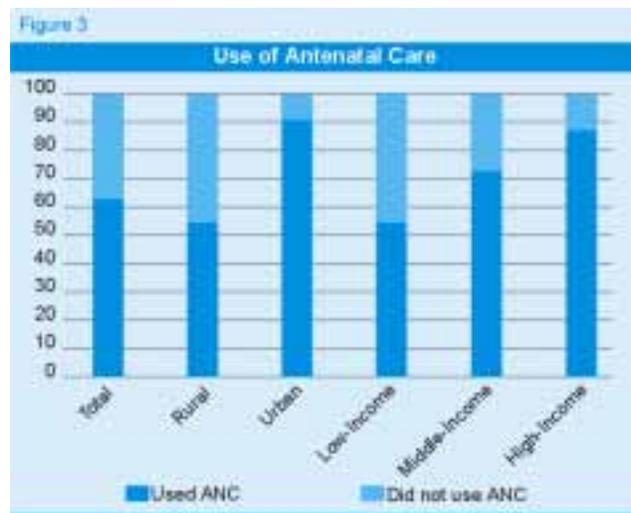
Table A10 provides a percentage distribution of women with a living child younger than two years of age by the age of the child. About half the respondents reported that their child was younger than one year, and 37 percent

reported that their child was between 12 and 18 months of age.

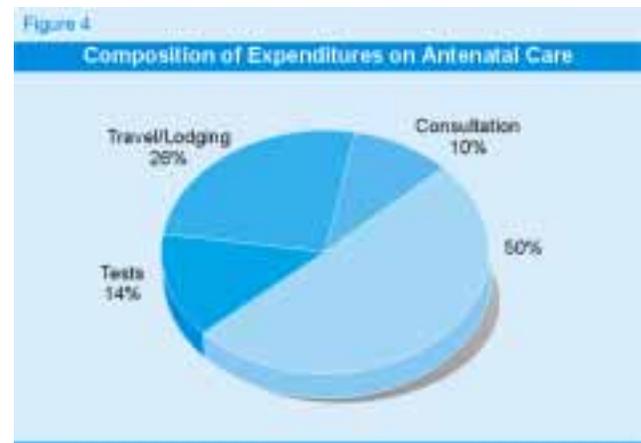
### Antenatal care

**Utilization:** Figure 3 reveals that among the 327 women who reported having a young child, only 63 percent had utilized antenatal care services from any source. Around 45 percent of rural women compared to 9 percent of urban women had not received any ANC. In addition, poorer women were considerably less likely to use ANC services than better-off women. Forty-five percent of women in the bottom two income quartiles did not use ANC services, compared with 12 percent of women in the top income group. (See Table A11 for more details.)

**Sources of care:** Among those who received ANC, 80 percent did so from government facilities or at home from government staff. (See Table A11.) This reconfirms the important role of the public sector in the provision of ANC. The dependence on government services is relatively higher in rural areas (83 percent) and among women in the low- and middle-income groups. Also, low-income and rural women were far more likely to use home-based government services than their high-income and urban counterparts. Note that some women reported using more than one type of ANC provider; in fact, 5.3 percent of women used both public and private ANC providers. Only 3.4 percent of women reported using "other" types of practitioners, which largely consisted of dais (traditional birth attendants).



**Out-of-pocket expenditures:** Table A12 summarizes mean out-of-pocket expenditures on ANC and PNC [fig2] services. Over 63 percent of women who used ANC services reported paying either for consultations, drugs, tests, or, in the case of women who utilized care in fixed facilities, transportation. It is somewhat surprising that well over half the women who used government services (56.8 percent) incurred some out-of-pocket costs. On average, women who reported using only government services (and not private services) spent an average of Rs. 397 while the corresponding figure for women who only used private services was Rs. 957. Unfortunately, the instrument did not include a question on the number of ANC consultations that were made. As such, these estimates should be interpreted as total out-of-pocket expenditures for ANC services and not the amount that was spent per visit.



**Composition of expenditures:** Figure 4 presents the composition of out-of-expenditures for ANC. The composition is based on data for women who reported paying something for ANC services. For these women, the average expenditure was Rs. 750. Of this amount, medicine accounted for at least 50 percent of total followed by travel/lodging, tests, and consultations. Table A13 presents data for government and private sector users. It is important to note that one-third of all ANC expenses incurred by an average public patient went to meet travel and lodging costs. This highlights the inadequate quality of outreach services.

Among women who reported using only the public sector for ANC, the average payment for medicine (Rs. 375)

was almost 86 percent of the average payment by women who reported using only the private sector (Rs. 432). By contrast, the average consultation fee among women using only the public sector (Rs. 23) constituted just 10 percent of that of women who used only the private sector (Rs. 219). The high public/private ratio for out-of-pocket expenditures on medicine is strong evidence that the government system is to a large extent supporting, de facto, private sources for pharmaceuticals. Due to a shortage of essential drugs at public facilities, consumers are compelled to purchase medicine from private pharmacies.

**Table 4: Comparison of Public versus Private Expenditures on Medicine and Consultations for Antenatal Care**

	Expenditure (Rs.)		
	Public	Private	Ratio
Consultation	23	219	0.10
Medicine	364	432	0.86

**Childbirth Assistance**

*Source of assistance:* Among the 327 women who had given birth in the past two years and who had at least one living child of less than two years of age, about two-thirds (220 women) had delivered at their own homes or at their parents' home (Table A14). As Figure 5a shows, almost 80 percent of rural women most recently delivered at home. The equivalent for urban areas was 27 percent (Figure 5b). Furthermore, either traditional birth attendants (TBAs) or relatives assisted 80 percent of all rural home deliveries. Given the fact that only a

small percentage of TBAs is properly trained to carry out safe delivery practices, women who were assisted by TBAs were at substantial risk.

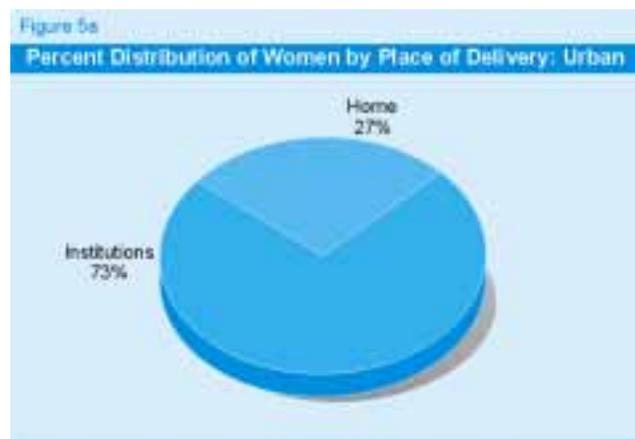
The public sector is a particularly important source of care among women who delivered in health care facilities. Overall, almost three-fourths of institutional deliveries took place in public clinics or hospitals. Among urban women who delivered away from home, 80 percent chose public facilities despite the fact that there are many private options in urban areas.

*Out-of-pocket expenditure for delivery services:* Table A15 summarizes average out-of-pocket expenditures for delivery services. A very high percentage of women (83 percent) reported that they incurred some costs for childbirth. Among those women who were assisted by a trained practitioner, almost all paid regardless of whether the assistant was public or private or whether the delivery took place in the home or in a health care facility.

**Table 5: Mean payments for Childbirth Services (Rs.)**

<b>Home delivery</b>	
Government	334
Private	869
Other	90
<b>Institutions</b>	
Government	836
Private	1934

It is not surprising that a home delivery assisted by a TBA was found to be the cheapest delivery alternative



(Rs. 90). Table 5 shows that women who were assisted by public and private midwives at home spent more than three and eight times as much as women who were assisted by TBAs spent.<sup>3</sup> For institutional deliveries, the average cost of utilizing government services was Rs. 836, less than half the average cost of using a private institution (Rs. 1934).

**Composition of expenditure:** Table A16 presents the composition of out-of-pocket expenditures for deliveries, both with and without complications. Among the women who did not experience complications, the average cost of a birth among those who paid for services was Rs. 512. The most expensive delivery options were private deliveries, either away-from-home or at home (Rs. 1851 and Rs. 943, respectively). On average, women choosing to deliver at a public facility paid Rs. 729, about 40 percent of the average paid by women who chose to deliver at a private facility.

Overall, consultations constituted the largest share (37.0 percent) of delivery expenditures followed by drugs (31.5), hospitalization (15.6 percent), and transportation (Rs. 9.8 percent). However, among women who used government facilities, over 50 percent of expenditures went for drugs, 18 percent for consultations and 15 percent for transportation. Average expenditures on drugs in public facilities (Rs. 370) were substantial; they amounted to 70 percent of the average payment for drugs in private facilities. The equivalent proportion for consultations was 35 percent. Once again, as in the case of ANC, this indicates that government clients are purchasing pharmaceuticals from the private sector.

Costs were generally higher if women experienced birth complications (cesarean sections, for example). The average was Rs. 1307 in public facilities and Rs. 2165 in private facilities. Among women who used public facilities, medicines and hospital services together accounted for 70 percent of delivery costs, compared to 76 percent of delivery costs among women who used private hospitals (results not reported).

### **Postnatal care**

**Utilization:** Postnatal care services refer to care received within six weeks of childbirth. Only 35 percent of women

reported that they received PNC from any type of provider (Table A11). This is substantially lower than the 63 percent of women who received ANC. Less than half the women in both urban and rural areas and in the low- and middle-income groups got PNC. The low utilization may be attributed to very low awareness among health workers as well as the beneficiaries about the importance of after-delivery care.

**Source of care:** As with ANC, government providers appeared to be the most important source of PNC services. Table A11 indicates that about 80 percent of women received PNC in either government facilities or from a public practitioner in the woman's home. The proportion of services provided by the government was uniformly high across place of residence and across income groups. Almost two-thirds of women in the top income quartile used government-provided care (79.2 percent).

**Out-of-pocket expenditures:** Almost 47 percent of PNC recipients incurred some costs for these services (Table A12). Among those women who got PNC at fixed facilities, a higher percent of government clients than private clients reported paying for services or transportation (64 vs. 85 percent). The average cost of PNC services was found to be substantially lower than that of ANC (Rs. 180 vs. Rs. 472). However, as with ANC, a question on the number of visits made by women was not included in the questionnaire.

**Composition of expenditures:** For women who reported paying for either services or transportation, drugs accounted for 58 percent and tests accounted for 11 percent of PNC expenditures. Surprisingly, the cost of drugs and tests was found to be higher among women using government facilities than among women using private ones (Table A13). The explanation for this finding is not clear.

## **5.2 Child Health Services**

**Utilization:** Women who currently had a child two years of age or younger were also asked a series of questions about the use of child health care services for nutritional monitoring, for immunizations, for check-ups, and for treatment of diarrhea and other illnesses. Among the

327 eligible women, 62 percent reported using some child health care services, either preventive or curative, in the three months prior to the survey (Table A17). The utilization rate was higher among women in urban areas and in the high-income group than among those in rural areas and those in the middle- and low-income groups.

*Source of Care:* Almost two-thirds of women who used child health services reported that they had received care from government providers. Rural women were more likely to receive government services at home and less likely to use facility-based government services than their urban counterparts. In addition, only rural, low-income women used "other" providers, which largely consisted of traditional health care practitioners.

*Out-of-pocket expenditures:* Table A18 reveals that about 76 percent of women who reported using child health care services reported paying out-of-pocket. As expected, women who consulted only government providers away from home were less likely to pay anything out of pocket than women who used only providers in private facilities (82 percent vs. 98 percent). On average, a user was likely to spend Rs. 160 when care was received from practitioners in government facilities only compared with Rs. 383 when care was received from a private facility only. Among the 44 women who received government care at home, however, only 5 percent reported paying for services. It should be noted that, like ANC and PNC services, women were not asked the number of times that child health services were utilized. As a result, the estimates reported above should not be interpreted as costs per visit.

*Composition of expenditures:* Table A19 presents the composition of expenditures for women who reported paying out of pocket for child health care services. Once again, medicine comprised the lion's share of expenses (63 percent), followed by consultation (21 percent) and transport (14 percent). As expected, women who used only private care spent substantially more on drugs than women who used only public care (Rs. 267.7 vs. Rs. 111.3) spent.

### 5.3 Family Planning

*Utilization of family planning methods:* Table A20 presents the results on the use of family planning services among the 1159 currently married women of reproductive age who were interviewed. Over 41 percent of all MWRA reported that they were currently using a modern or traditional method. Contraceptive use among urban women was almost double that of rural women (32.6 percent vs. 60.1 percent). Variation of contraceptive use across income groups was also noteworthy: 33 percent of women in the lowest income group reported using a contraceptive method in comparison with 54 percent of women in the highest income group.

*Method mix:* Table A20 indicates that the majority of current contraceptive users reported either that they had been sterilized (65.5 percent) or that their husbands had been (3.7 percent). The high reliance on permanent methods was reported in both urban and rural areas and among women in each of the three income groups. With respect to other family planning methods, 3.9 percent of women reported using IUDs, 9.2 percent reported using pills, and 10.8 percent reported using condoms. It is interesting to note that rural women were twice as likely to rely on pills as urban women were which is probably due to the fact that rural women are targeted by the family welfare program for this particular method. Traditional methods appeared to be used by only a small proportion of respondents (6.8 percent) which is still higher than the state average reported in the National Family Health Survey of 1992-93 (1.8 percent). One possible reason for the higher rate of traditional method use among the sample population is that Udaipur has a higher percentage of scheduled tribes, a group that has traditionally avoided modern methods. In fact, 16.5 percent of women in scheduled tribes reported using traditional methods compared with 5.6 percent of women in scheduled castes and 4.9 percent of other women.

*Source of services:* Table A21 presents results on the source of family planning supplies and services for women who reported acceptance of sterilization and IUDs in the two years prior to the survey and for women who were currently using pills and condoms. Among women who had been sterilized or who had had IUDs

inserted in the past two years, more than three-fourths had received services from the government sector. There were large differences by area of residence on the source of supplies of pills and condoms. In urban areas, 71 percent of pill users and 95 percent of condom users purchased supplies from the private sector; however, in rural areas, 80 percent of pill users and 64 percent of condom users reported purchasing their supplies from the public sector.

*Out-of-pocket expenditures:* The average out-of-pocket expenditure for sterilization worked out to Rs. 771, 15 percent of which was travel-related. (See Table A22.) Women who used private services paid more both for the procedure and for travel/ accommodation costs than women using public services, but private providers outnumbered public providers by approximately six to one.

As expected, women who received family planning supplies from government providers reported that they did not pay. Looking at the cost of privately procured condoms (Rs. 19 per month), it appears that people using private sources depended mainly on commercial marketers. Private users of pills and condoms reported spending an average of Rs. 12 and Rs. 19 respectively for a one-month supply; however, it should be noted that these estimates are based on a small number of women.

## 5.4 Abortion

*Use of abortion services:* All married women of reproductive age, except those who had been sterilized more than two years prior to the survey, were asked whether they had used any abortion services in the past two years. The data presented in Table A23 reveal that out of 864 women, only 4.6 percent (40 women) reported that they had had an abortion. Since abortion is a sensitive issue, especially in rural areas, the results presented here are possibly an underestimation of the actual number of cases.

*Source of care:* Overall, 50 percent chose government providers and 50 percent chose private providers (Table A23). It is commonly known that if available and affordable, women prefer to use private sources for the

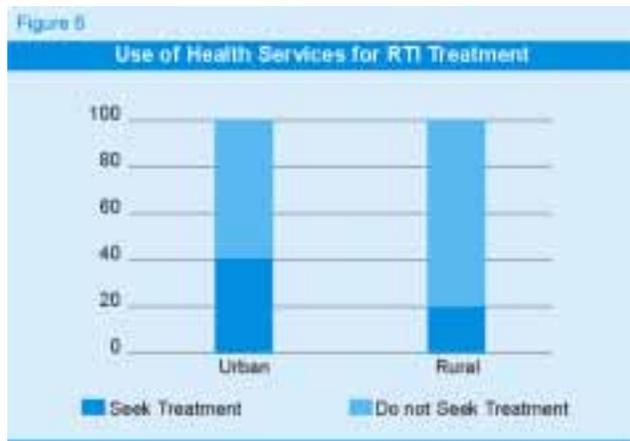
sake of confidentiality. The data presented in Table A23 support this hypothesis. A higher reliance on private sources was found in urban areas due to availability of services. The high preference for private services could also be an indication of the inadequacy of government facilities.

*Out-of-pocket expenditures:* Table A24 shows that 90 percent of all women who had an abortion incurred out-of-pocket costs; the average was Rs. 925. The differential between public and private sources was 43 percent, which is not as high as for other RCH services. In other words, government abortion services are not as cheap relative to private services as they are for services such as childbirth.

*Composition of expenditures:* Among those women who incurred out-of-pocket costs, the average expenditure was estimated to be Rs. 1028 (Table A25). Medicine absorbed the major proportion of expenditures (51 percent), especially among women using government services (68.5 percent). In fact, average payments for medicines in the public sector were higher than in the private sector (Rs. 618 versus Rs. 550) - once again, evidence of the purchase of medicine outside the public sector. Users of private services reported paying more for travel and lodging.

## 5.5 Reproductive Tract Infections

*Prevalence of reproductive tract infections:* As discussed earlier, almost half of all household expenditures on RCH services were for the treatment of RTIs. One explanation for this finding concerns the prevalence of RTIs. A very high percentage of women (37.5 percent) reported an RTI-related symptom in the past three months (Table A26). Which women were classified as having an RTI? A woman was classified as having a problem if she reported vaginal discharge that was not menstruation, pain or burning while urinating, pain in the abdomen during intercourse, or blood after sex when not menstruating. Considering the high likelihood that women do not easily divulge information on RTIs, the estimated proportion may be biased downwards. The prevalence of RTIs is clearly higher among women in rural areas than in urban areas (44.7 percent vs. 23.7 percent).



*Utilization of RTI treatment:* Only 19.7 percent of those who reported an RTI-related symptom reported seeking medical help. This clearly highlights the low priority given to such problems by the women themselves and by other members of the household who participate in health care decision-making. Figure 6 shows that the probability of seeking treatment is lower among women in rural areas than among women in urban areas (15.7 percent vs. 33.3 percent).

*Source of services:* The data highlight the relevance and importance of private providers in offering RTI services especially in rural areas. Around 46 percent of rural users reported visits to private facilities in order to treat their problems as compared with 33 percent in urban areas. Given the fact that government facilities often fail to provide confidentiality and attention with dignity to the users of such services, the strong presence of private providers seems reasonable.

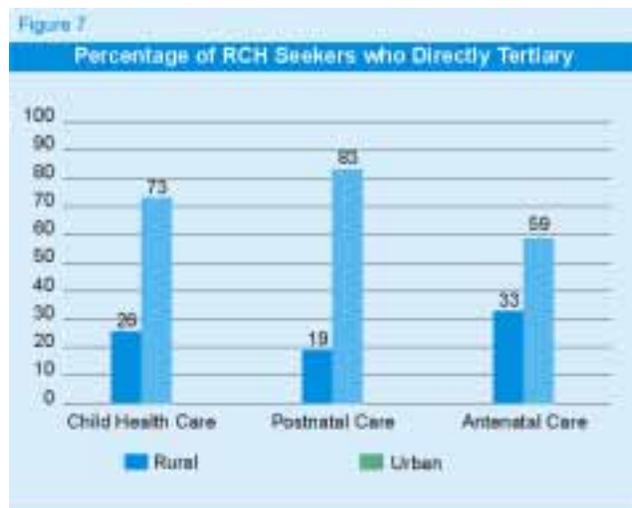
*Out-of-pocket expenditures:* Around 87 percent of users incurred a cost for RTI treatment; in fact, an average user expected to spend Rs. 626 (Table A27). On average, the cost of treatment from private providers was Rs. 1,002, which is almost three times the cost of treatment from government providers (Rs. 374). High demand for private sector services in spite of higher costs may appear puzzling; however, in a dynamic setting this is justified when one looks at confidentiality issues and user perception regarding availability of minimum quality of care. In addition to price, quality often plays a major role in determining the type of RCH provider chosen.

*Composition of expenditures:* The composition shown in Table A28 reveals that, like most other RCH services, drug costs accounted for more than 50 percent of total expenditures. When comparing government clients with private clients, the results indicate that government clients spent 12 percent more on medicines than private clients (Rs. 618 vs. Rs. 550) did. However, private clients spent more than government clients on the other items (consultations, and transportation, food and lodging).

## 6. Source of Care Among Women Using Government Services

An important criterion for evaluating public health care systems is whether services are provided and used efficiently. One important aspect of efficiency concerns the referral system. A number of studies carried out both in India and other developing countries suggests that basic RCH health care services, such as antenatal care, well-baby care, immunizations, and treatment of simple curative problems, are most cost-effectively delivered through clinics and health centers rather than through hospitals (World Bank, 1997). This is largely due to the fact that health care providers tend to be more specialized in hospital settings, and as a result, more costly.

Table A29 shows the distribution of women who utilized the public sector for three basic RCH services by whether the facility first utilized was a clinic or a hospital. The three health services considered were antenatal care, postnatal care, and child health care. Figure 7 shows that hospitals served as first points of contact for a



substantial percentage of women who used the three services. The pattern is particularly evident in urban areas with 59 percent of antenatal care clients, 83 percent of postnatal care clients, and 73 percent of child health care clients going directly to hospitals for services. One explanation for the pattern is that public clinics and health centers are largely not available in urban areas, but in rural areas too, overuse of hospitals was found. For example, one-third of the rural women who sought antenatal care in public facilities went directly to hospitals.

The proportion of public clients in both urban and rural areas who went directly to tertiary facilities for care is symptomatic of a weak referral system. Encouraging women to use lower-level facilities for basic services such as ANC, PNC, and child health care could lead to significant cost savings, savings that could then be used both to improve access to and quality of services. Not only would this improve health care utilization rates, it would also result in more effective health care delivery.

## 7. Key Issues

The following themes emerged from the preceding analysis:

*Utilization rates for many important RCH services were particularly low in rural areas.* Despite the government's efforts to improve service provision, utilization rates for most of the RCH services analyzed in this study were found to be very low among rural women. Only 55 percent of women utilized ANC services during their most recent pregnancies, only 37 percent were assisted during their most recent deliveries by a trained practitioner such as a midwife, nurse or doctor, and only 33 percent used PNC services. Moreover, the use of other types of RCH services was also found to be low. Only 33 percent of women reported currently using any contraceptive method, and only 20 percent of women with a reproductive tract infection reported that they had sought treatment. It is important to note that the study did not investigate barriers to utilizing services. Possible explanations include cultural factors, a lack of awareness among women of the benefits of modern health care services, the ineffectiveness of current outreach programs, poor accessibility to facility-based services,

the out-of-pocket costs associated with using public services, and poor service quality.

*Women from 'non-poor' households, as well as women from 'poor' households, relied heavily on government RCH services.* In order to investigate whether the utilization of RCH services differed by socio-economic status, households were ranked according to reported per capita income and were assigned to one of three groups. The first group consisted of households in the lowest 50 percent, the second group was households in the third quartile, and the third group consisted of households in the top income quartile.

As expected, the overwhelming majority of women from the low-income group received their care from government providers; however, an unexpected finding was the extent to which women from the highest income quartile used the public sector. Sixty-five percent of ANC clients, 79 percent of PNC clients, and 72 percent of child health care clients in the top income group received care in public facilities. This raises the question of whether government services are properly targeted to those women who are most in need of them. Previous studies suggest that the government is not spending enough money on RCH service delivery to provide services to all women in India. If this is the case, the results presented above suggest that the government should consider ways to target services to those who need them most.

*The public referral system was weak in both urban and rural areas.* Health systems operate most efficiently when patients obtain care at the lowest level health facility that can adequately address their needs. Providing preventive and basic curative services at tertiary facilities is costly due to the higher costs of specialized practitioners in hospitals. Such services can be provided at a much lower cost at lower-level health centres. In Udaipur, however, many women who use public health facilities for basic RCH services bypass public clinics and go directly to hospitals. Among urban women who used the public sector, 59 percent of ANC clients, 83 percent of PNC clients, and 73 percent of child health care clients went directly to hospitals for services. One explanation for this pattern is that clinics and health centers are largely unavailable in urban areas, and, as

a result, women seeking government care are compelled to seek it at hospitals. This pattern is less pronounced in rural areas, but the proportion of women who go directly to hospitals for basic RCH services is nevertheless substantial: 33 percent of ANC clients, 19 percent of PNC clients, and 26 percent of child health care clients.

The referral pattern in both urban and rural areas suggests that substantial cost savings could be attained through policies designed to direct RCH users to the most appropriate link in the referral chain. For example, properly designed user fees could serve as a disincentive to use higher-cost hospital services and as an incentive to use lower-cost clinic services. However, the extent to which women have physical access to hospitals and clinics as well as the quality of services should be carefully considered in the design of financing policies.

*Households were the largest source of funds for the RCH sub-sector.* Despite large investments by both the state and national state governments in the family welfare program, households accounted for about three-fourths of all funds spent on RCH services in Udaipur. This finding should be interpreted cautiously because the methodology used to calculate annual out-of-pocket expenditures was crude. Nevertheless, the finding is consistent with the estimates of previous studies that investigated the role of households in overall health care financing in India. The relatively large size of household out-of-pocket expenditures has a number of important implications on policy formulation. First, households may be an important source of funds that can be used to further improve the availability and quality of public RCH services. Second, the fact that many households are willing to pay for RCH services is a necessary, but not a sufficient, condition for increased development of the private sector in this area.

*RTI treatment accounted for almost half of household RCH expenditures.* The finding that RTI treatment accounted for a high percentage of household expenditures may at first be surprising, but there are a number of reasons why this makes sense. First, the prevalence of symptoms related to RTIs and to urinary problems was found to be very high among the women included in the sample. Second, women rely more on

private practitioners for the treatment of RTIs than for other RCH services. This is important because private treatment of RTIs was found to be very expensive. Third, RTI treatment is clearly a curative service, while many of the other RCH services analyzed are preventive. This is relevant because willingness to pay is usually greater for curative care than for preventive care.

*Women who used government RCH services incurred large out-of-pocket costs.* A commonly-held perception among many government health officials is that the public system provides individuals with access to free health care services; however, the results of this analysis do not support this perception as most women who used public facilities reported spending something to receive services. Among women who received services at public facilities, 74 percent of ANC clients, 100 percent of childbirth clients, 66 percent of PNC clients, and 81 percent of child health clients reported that they had paid either for consultations, medicines, tests, transportation, or lodging. Moreover, the fees that women reported were often substantial. On average, the cost in public facilities was Rs.519 for antenatal services (56 percent of private costs), Rs. 835 for delivery assistance (43 percent of private costs), Rs. 303 for postnatal services (242 percent of private costs), and Rs. 160 for child health services (42 percent of private costs).

*The pharmaceutical costs of public clients were comparable to those of private clients.* For each of the RCH services analyzed in this report, more than half of the expenditures incurred by public RCH clients was for pharmaceuticals. They accounted for 61 percent of expenditures for public child health services and for 50 percent of expenditures for childbirth assistance in public facilities. Moreover, the amount spent on medicine by public clients was often quite similar to the amount spent by private clients. One possible explanation for these findings is that drugs are often not available at government facilities, so public clients must rely on the private sector to fill prescriptions. The findings also suggest that government officials need to consider the role of pharmaceuticals in RCH policy design. Important issues that merit attention are drug pricing within public facilities and the coordination of the roles of the public and private sectors in the provision of pharmaceuticals.

***Directions for Future Research***

There are a number of ways that future household research can be informative to officials responsible for strengthening RCH policy. First, given that health policy makers in Rajasthan are currently considering the implementation of user fees in secondary and tertiary facilities, a study that assesses the role of user fees and service quality on the utilization of RCH services would be particularly timely. Such a study could be used to predict the extent to which fees would affect utilization patterns among women from poor and non-poor households and whether improvements in service quality would compensate for any negative price effects. Secondly, studies on the willingness of households to pay for health insurance are also needed. Given that households who enrol in health insurance plans pay premiums during a time of the year when they are most

able to pay, insurance schemes may have greater potential to mobilize private resources than user fee schemes. Third, studies that investigate the impact of alternative targeting strategies are needed. There are a number of reasons why the issue of targeting is important to future attempts to strengthen RCH service delivery. If cost recovery strategies do not incorporate targeting mechanisms, then financing reform may result in reduced access to health care and as a result, deteriorating health outcomes among women and children. Targeting is also one of the few instruments available to government policy makers that can be used to increase the role of the private sector in RCH service delivery. Research in this area should focus on the costs and benefits of alternative targeting mechanisms such as means testing, targeting on the basis of geographic residence, and self-targeting.

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## Appendix Tables

Appendix Table A1: Summary of Results from Household Health Expenditure Studies

Study	Share of Public/Private Providers in Treatment	Percent paying	Cost of Treatment per illness episode			Annual health expend per capita
			Rural/Urban	Priv/ Pub	Direct/ Indirect	
NSS 42nd Round 1992 (National)	Inpatients 62% Pub. (R) 63% Pub. (U) Outpatients 19% Pub. (R) 24% Pub. (U)		Inpatients Rs. 640 (R) Rs. 1053 (U) Outpatients Rs. 71 (R) Rs. 90 (U)	Rural Rs. 84.9 (Pvt.) Rs. 114.8 (Pub) Urban Rs. 91.3 (Pvt.) Rs. 103.4 (Pub)	100% (Direct)	Rs. 248
Sundar 1992 (National)	52% Pub. (R) 40% Pub. (U)	Inpatient 65.3% (R) 64.1% (U) Outpatient 75.6% (R) 73.2% (U)	Rs. 152 (R) Rs. 143 (U)	Hospitalized Rs. 1876 (Pvt) R Rs. 558 (Pub) R Rs. 2334 (Pvt) U Rs. 445 (Pub) U Non-hospitalized Rs. 318 (Pvt) R Rs. 75 (Pub) R Rs. 253 (Pvt) U Rs. 62 (Pub) U	Rural 77% (Direct) Urban 78% (Direct)	
Sundar 1994 (National)	MP (Rural) 14%, 12% UP (Rural) 13%, 13% RJ (Rural) 51%, 86%		MP (Rural) Rs. 147, 129 UP (Rural) Rs. 128, 97 RJ (Rural) Rs. 186, 152		Direct Cost MP 75%, 81% UP 76%, 67% RJ 69%, 71%	
Duggal and Amin 1989 (Jalgaon)	75% Pvt. 13% Pub.	Paying patients accounted for 79.8% of the total episodes	Rs. 103.56 (R) Rs. 100.44 (U)	Rs. 116.31 (Pvt.) Rs. 76.84 (Pub.)	84.6% (Direct) 15.4% (Indirect)	Rs. 182.49
George (ed.) 1997 (Madhya Pradesh)	71.69% Pvt. 15.53% Pub.	90%	Rs. 137.67 (R) Rs. 128.86 (U)	Rs. 145.62 (Pvt.) Rs. 173.14 (Pub)	81% (Direct) 19% (Indirect)	Rs. 299.16
Yesudian 1990 (Bombay)	Short-term illness 73.3% Pvt. 15.7% Pub Chronic 59.2% Pvt. 32% Public Catastrophic 50.5% Pvt. 47% Public		Short-time illness Chronic illness Catastrophic illness	Rs. 92 Rs. 596 Rs. 1644	Short-term illness 22% Indirect Chronic 10% Indirect Catastrophic 7% Indirect	
Sujata Rao et al. 1997 (Hyderabad) Chronic ailment	75% Private 33% Public		Tuberculosis Rs. 8000 (Hospitalized) Rs. 5000 (non-hospitalized) Rs. 1700 (Hospitalized) Rs. 2500 (non-hospitalized)		75% direct 25% indirect	

Study	Share of Public/Private Providers in Treatment	Percent paying	Cost of Treatment per illness episode			Annual health expend per capita
			Rural /Urban	Priv/ Pub	Direct/ Indirect	
Sodani 1997 (Udaipur)	Rural 71.7% Pvt. 27.3% Public Urban 51.7% Pvt. 45.1% Public		Rs. 931.7 (R) Rs. 610.8 (U)	Rural Rs. 621.1 (Pub) Rs. 2051 (Pvt.) Urban Rs. 304.4 (Pub) Rs. 1384.4 (Pvt)	63.3% Direct 36.7% Indirect	
Kulkarni and Chitanand 1994 (Maharashtra)	53-63% Pvt. 20% Public		Minor illness Major illness Chronic illness	Rs. 107.7-128.9 Rs. 1311.1-1971.1 Rs. 282.5-588.7		Rs. 253 Rs. 415

**Table A2: Sample Results for Households and Eligible Women**

Results	Total	Rural	Urban
Household Selected	1100	726	374
Household Completed	1100	726	374
HH Response Rate*	100.0	100.0	100.0
Total Eligible Women	1419	944	475
Eligible Women Completed	1166	769	397
EW Absent	253	175	78
EW Response Rate**	0.78	0.77	0.80

\* percent of eligible households who were interviewed

\*\*percent of eligible women who were interviewed

**Table A3: Sources of Household Income by Urban/Rural Status**

Source of Income	Total		Urban		Rural	
	% Reporting Income	Mean	% Reporting Income	Mean	% Reporting Income	Mean
Farm production	58.9	1789	10.7	3486	83.7	1677
Share-cropping	4.9	2911	2.9	10182	5.9	1051
Rent of equipments	0.9	25550	0.0	0	1.9	25550
Rent of house	2.9	10078	7.2	11678	0.9	1440
Bank interest	2.1	4558	2.4	7077	1.9	2939
Wages or salaries: male	51.1	39525	49.7	70066	52.3	24897
Wages or salaries: female	7.7	19280	7.8	41547	7.7	8335
Remittances	3.0	32618	2.1	29250	3.4	33696
Other sources	41.2	37473	63.4	52530	29.8	20863
Any of the above sources	100.0	40774	100.0	74253	100.0	23527
N	1100	1100	374	374	726	726

**Table A4: Percent Distribution of Households by Income Group and by Urban/Rural Status and by Caste/Tribe Status**

Income Group	Urban/Rural			Caste/Tribe		
	Total	Urban	Rural	Sched. Caste	Sched. Tribe	Others
Total	100.0	100.0	100.0	100.0	100.0	100.0
First two quartiles	50.0	14.2	69.0	47.1	85.5	35.8
Third quartile	25.0	32.9	20.0	27.6	12.2	29.2
Fourth quartile	25.0	52.9	11.0	25.3	2.3	35.1
N	1100	374	726	87	303	710

**Table A5: Estimate of Annual Household Expenditures on RCH and Non-RCH Services**

Type of health costs	Urban/Rural			Income Group		
	Total	Urban	Rural	First	Second	Third
Total health expenditures per capita	399.1	551.7	320.5	291.3	418.0	595.6
Non-RCH expenditures per capita	303.3	394.9	256.1	225.9	313.3	447.9
RCH expenditures per capita	95.8	156.7	64.4	65.4	104.7	147.7
RCH expenditures per women 15-49	487.0	754.0	356.4	356.0	557.9	690.3
Percent of total household health expenditures spent on RCH services	24.00	28.40	20.09	22.45	25.05	24.80

**Table A6: Percent of ill Persons who Report Using Health Care, by Type of Provider, and by Urban/Rural Status, by Income Group, or by Sex**

Type of Care	Urban/Rural			Income Group			Sex	
	Total	Urban	Rural	First	Second	Third	Male	Female
N	759	251	508	384	193	182	384	375
Any Government	49.0	55.4	45.9	45.6	53.9	51.1	49.0	49.1
Any Private	50.1	44.6	52.8	53.4	43.0	50.6	49.5	50.1
Any Other/Traditional	11.3	7.6	13.2	12.5	11.9	12.5	11.4	11.2
Both government and private	6.7	6.0	7.1	7.3	5.2	7.1	6.5	6.9

**Table A7: Percent of Individuals who Paid for Non-RCH Services, and Mean Expenditures, by Type of Provider and by Urban/Rural Status**

Type of Care	N	Percent who paid something*	Total Users		Total Payers	
			Mean Total Costs	S.D.	Mean Total Costs	S.D.
Total	759	93.8	661.4	1970	705.1	2026
Government Only	307	91.9	451.6	1023	491.7	1057
Private Only	319	98.1	885.0	2723	902.0	2746
Other Only	58	75.9	169.4	361	223.3	401
Government and Private	47	100.0	1143.8	1914	1143.8	1915
Urban	251	94.0	917.5	2815	975.8	2893
Government Only	121	92.6	487.9	1009	527.1	1040
Private Only	96	96.9	1598.3	4324	1649.8	4385
Other Only	15	86.7	224.1	300	258.6	309
Government and Private	15	100.0	780.6	624	780.6	624
Rural	508	93.7	534.9	1358	570.9	1396
Government Only	186	91.4	428.0	1033	468.3	1072
Private Only	223	98.7	578.0	1518	585.8	1527
Other Only	43	72.1	150.3	381	208.5	437
Government and Private	9	100.0	1314.1	2274	1314.1	2274

\* Includes persons who paid at least Rs. 1 for consultations, drugs, tests, transport, or lodging.

**Table A8: Mean Expenditures on Non-RCH Services and Percent Distribution of Expenditures by Type of Expenditure and by Place of Consultation**

Type of Costs	Total		Government Only		Private Only		Other Only	
	Mean	Percent	Mean	Percent	Mean	Percent	Mean	Percent
Total	705.1	100.0	491.7	100.0	902.0	100.0	223.3	100.0
Consultation	177.7	25.2	45.6	9.3	306.0	33.9	50.7	22.7
Medicine	365.0	51.8	341.2	69.4	385.1	42.7	131.8	59.0
Diagnostic	63.9	9.1	45.9	9.3	87.2	9.7	2.5	1.1
Travel	62.4	8.8	40.8	8.3	75.2	8.3	34.5	15.4
Board and Lodging	36.1	5.1	18.2	3.7	48.5	5.4	3.8	1.7
N	712		282		313		44	

**Table A9: Percent of Women who Report a Living Child less than Two Years of Age, by Current Age and by Urban/Rural Status**

Current Age	Urban/Rural Status		
	Total	Urban	Rural
Total	28.2	20.1	32.4
15-19 years	29.1	36.4	28.0
20-24 years	49.4	43.0	52.9
25-29 years	38.7	30.7	42.4
30-34 years	25.1	15.2	30.6
35-39 years	12.9	2.0	17.7
40-44 years	6.1	0.0	11.2
45-49 years	0.0	0.0	0.0
N	1,159	393	766

**Table A10: Percent Distribution of Women with a Living Child less than Two Years of Age, by Age of the Child**

Age of Child	Urban/Rural Status		
	Total	Urban	Rural
Total	100.0	100.0	100.0
Less than 6 months	28.7	21.5	31.0
6 - 11 months	22.5	34.2	18.8
12 - 17 months	37.4	24.1	41.6
18 - 23 months	11.4	20.3	8.6
N	324	79	245

**Table A11: Percent of Women who used Government, Private, and other Providers for Antenatal Care and Postnatal Care**

Type of Care	Urban/Rural			Income Group		
	Total	Urban	Rural	First	Second	Third
<b>Total sample</b>						
Used antenatal care	63.6	91.1	54.8	55.3	72.7	88.1
Used postnatal care	35.5	44.3	32.6	32.2	32.5	57.1
N	327	79	248	208	77	42
<b>Total antenatal care users</b>						
Government	80.3	75.0	83.1	82.6	85.7	64.9
Home	28.4	2.3	41.9	40.0	19.6	5.4
Facility	60.6	75.0	52.9	53.0	76.8	59.5
Private	21.6	29.2	17.6	13.9	26.8	37.8
Home	1.0	1.4	0.7	0.9	0.0	2.7
Facility	21.2	29.2	16.9	13.0	26.8	37.8
Other	3.4	1.4	4.4	5.2	0.0	2.7
Used both government and private	5.3	8.4	3.7	0.9	14.3	5.4
N	208	72	136	115	56	37
<b>Total postnatal care users</b>						
Government	81.0	80.0	81.5	80.6	84.0	79.2
Home	45.7	14.3	59.3	58.2	36.0	20.8
Facility	42.2	65.7	32.1	28.3	56.0	66.7
Private	13.8	20.0	11.1	13.4	8.0	20.8
Home	0.9	0.0	1.2	1.5	0.0	0.0
Facility	12.9	20.0	9.9	11.9	8.0	20.8
Other	16.4	5.7	21.0	19.4	24.0	0.0
Used both government and private	4.3	0.0	6.2	7.5	0.0	0.0
N	116	81	35	67	25	24

**Table A12: Percent of Women who Paid for Antenatal and Postnatal Services, and Mean Expenditures, by Type of Provider and by Urban/Rural Status**

Type of Provider**	N	Percent who paid something*	Total Users		Total Payers	
			Mean	S.D.	Mean	S.D.
<b>Antenatal Care</b>						
Total	208	62.9	472.6	1240.7	750.4	1496.9
Government only	153	56.8	397.2	1248.7	698.6	1594.7
Home	56	7.1	4.8	18.6	67.5	27.5
Facility	117	74.4	519.0	1406.9	698.0	1594.8
Private only	34	94.1	956.8	1447.6	1016.6	1472.4
Home	2	50.0	250.0	353.6	100.0	500.0
Facility	35	97.1	932.5	1428.7	959.9	1440.8
Other only	4	25.0	1.8	3.5	7.0	NA
Used both government and private	11	100.0	442.5	385.3	442.5	385.3
<b>Postnatal Care</b>						
Total	116	46.6	180.0	832.3	386.6	1192.3
Government only	81	37.0	200.1	991.8	540.4	1588.6
Home	45	6.7	8.9	37.4	133.3	76.4
Facility	47	63.8	344.9	1287.8	540.4	1587.8
Private only	11	90.9	154.1	129.8	169.5	125.8
Home	1	100.0	260.0	NA	260.0	NA
Facility	13	84.6	165.8	153.9	195.9	148
Other only	11	27.3	18.2	44.8	66.7	72.2
Used both government and private	5	80.0	272.6	192.8	340.8	136.4

\* Includes persons who paid at least Re. 1 for consultations, drugs, tests, transport, or lodging.

\*\* Provider-specific means are based on the responses of women who used only the type of care listed.

**Table A13: Mean Expenditures on Antenatal and Postnatal Care and Percent Distribution of Expenditures by Type of Service and by Place of Consultation**

Type of Costs	Total		Government Only		Private Only	
	Mean	Percent	Mean	Percent	Mean	Percent
<b>Antenatal Care</b>						
Total	750.4	100.0	698.6	100.0	1016.6	100.0
Consultation	75.0	10.0	23.4	3.3	218.9	21.5
Medicine	377.5	50.3	374.9	53.7	432.4	42.5
Tests	103.5	13.8	71.9	10.3	212.4	20.9
Travel/Lodging	194.5	25.9	228.4	32.7	152.8	15.0
N	131		89		32	
<b>Postnatal Care</b>						
Total	386.6	100.0	540.4	100.0	169.5	100.0
Consultation	86.0	22.2	79.0	14.6	43.0	25.4
Medicine	223.5	57.8	335.7	62.1	103.0	60.8
Tests	41.0	10.6	73.3	13.6	1.5	0.9
Travel/Lodging	36.1	9.3	52.4	9.7	22.0	13.0
N	54		30		10	

**Table A14: Percent Distribution of Women by Place of Delivery and by Urban/Rural Status**

Place of Delivery	Total		Urban/Rural Status			
	N	Percent	N	Percent	N	Percent
<b>Total</b>	327	100.0	79	100.0	248	100.0
<b>Home Delivery</b>						
Government	40	12.2	6	7.6	34	13.7
Private	8	2.5	1	1.3	7	2.8
Other	171	52.3	14	17.7	157	63.3
<b>Institutional Delivery</b>						
Government	74	22.6	46	58.2	28	11.3
Private	34	10.4	12	15.2	22	8.9

**Table A15: Percent of Women who Paid for Birth Delivery Services, and Mean Expenditures, by Type of Provider and by Urban/Rural Status**

Place of Delivery	N	Percent who paid something*	Total Users		Total Payers	
			Mean	S.D.	Mean	S.D.
Total	327	82.9	499.1	847.1	602.2	896.2
<b>Home Delivery</b>						
Home Government	40	100.0	333.6	199.9	333.6	199.9
Private	8	100.0	868.9	1335.4	868.9	1335.4
Other	171	67.8	89.5	145.8	131.9	160.6
<b>Institutional Delivery</b>						
Government	74	98.6	835.9	757.3	847.3	756.1
Private	34	100.0	1934.0	1404.5	1934.0	1404.5

\* Includes persons who paid at least Rs. 1 for consultations, drugs, tests, transport, or lodging.

**Table A16: Mean Expenditures on Birth Delivery Assistance and Percent Distribution of Expenditures, by Type by Type of Service, by Type of Assistance, and by Whether the Woman Reported Delivery Complications**

	Total		Institutional				Home				Dai	
	Mean	Percent	Government		Private		Government		Private		Mean	Percent
			Mean	Percent	Mean	Percent	Mean	Percent	Mean	Percent		
<b>No Complications</b>												
Total	511.6	100.0	728.5	100.0	1850.9	100.0	309.8	100.00	942.9	100.00	127.9	100.0
Consultation	188.5	36.8	132.7	18.2	399.3	21.6	253.4	81.8	574.3	60.9	123.6	96.7
Hospitalization	80.1	15.7	53.8	7.4	540.0	29.2	16.7	5.38	214.3	22.73	0.9	0.7
Medicines	161.6	31.6	369.7	50.7	546.6	29.5	39.7	12.82	154.3	16.36	3.3	2.6
Tests	9.4	1.8	17.2	2.4	48.6	2.6	NA	NA	NA	NA	NA	NA
Transport	50.1	9.8	114.6	15.7	205.2	11.1	NA	NA	NA	NA	NA	NA
Food/Lodging	21.8	4.3	40.5	5.6	111.2	6.0	NA	NA	NA	NA	NA	NA
N	235		58		25		36		7		109	
<b>Complications</b>												
Total	1194.1	100.0	1306.7	100.00	2165.0	100.00						
Consultation	372.6	31.2	210.7	16.1	777.8	35.9						
Hospitalization	123.6	10.4	96.7	7.40	333.3	15.40						
Medicines	461.1	38.6	711.3	54.44	586.7	27.10						
Tests	19.7	1.7	4.7	0.36	71.1	3.28						
Transport	159.3	13.3	204.7	15.66	296.1	13.68						
Food/Lodging	57.8	4.8	78.7	6.02	100.0	4.62						
N	36		15		9							

**Table A17: Percent of Women who used Government, Private, and other Providers for Child Health Care**

Type of Care	Total	Urban/Rural		Income Group		
		Urban	Rural	First	Second	Third
<b>Total Sample</b>						
Used child health care N	62.1 327	69.6 79	59.7 248	59.6 208	61.0 77	76.2 42
Total Child Health Care Users						
Government	74.9	74.5	75.0	73.4	80.9	71.9
Home	22.2	3.6	29.1	29.0	14.9	6.3
Facility	59.1	72.7	54.1	50.0	76.6	68.8
Private	29.6	32.7	28.4	30.6	23.4	34.4
Home	3.0	1.8	3.4	3.2	4.3	0.0
Facility	27.1	30.9	25.7	27.4	21.3	34.4
Other	4.4	0.0	6.1	7.3	0.0	0.0
Used both government	6.9	7.3	6.8	8.1	4.2	6.3

**Table A18: Percent of Women who Paid for Child Health Care Services, and Mean Expenditures, by Type of Provider and by Urban/Rural Status**

Type of Provider**	N	Percent who paid something*	Total Users		Total Payers	
			Mean	S.D.	Mean	S.D.
<b>Child Health Care for Children Younger than Two Years</b>						
Total	203	75.9	198.2	657.9	261.3	744.8
Government only	134	66.4	122.9	244.1	185.1	280.0
Home	44	4.5	2.0	2.1	45.0	49.5
Facility	114	81.6	160.2	265.5	196.4	281.8
Private only	46	97.8	404.0	1286.1	412.9	1299.1
Home	5	100.0	156.0	198.3	156.0	198.3
Facility	49	98.0	383.0	1247.7	391	1259.7
Other	9	44.4	27.2	42.8	61.3	45.9
Used both government and private	14	100.0	307.9	387.8	307.9	387.8

\* Includes persons who paid at least Rs. 1 for consultations, drugs, tests, transport, or lodging.

\*\* Provider-specific means are based on the responses of women who used only the type of care listed.

**Table A19: Mean Expenditures on Child Health Care Services and Percent Distribution of Expenditures by Type of Service and by Place of Consultation**

Type of Costs	Total		Government Only		Private Only	
	Mean	Percent	Mean	Percent	Mean	Percent
Child Health Care Total	261.3	100.0	185.1	100.0	412.9	100.0
Consultation	55.1	21.1	28.3	15.3	101.2	24.5
Medicine	164.2	62.8	112.3	60.7	266.7	64.6
Tests	2.5	1.0	1.6	0.9	4.4	1.1
Transport	36.0	13.8	37.2	20.1	40.6	9.8
Food and Lodging	3.4	1.3	5.7	3.1	0.0	0.0
N	154		89		45	

**Table A20: Percent of Women Currently using Family Planning, and Percent Distribution of Women Currently using Family Planning, by Type of Method**

Use of family planning	Urban/Rural			Income Group		
	Total	Urban	Rural	Low	Middle	High
Percentage currently using family planning	41.9	60.1	32.6	33.4	47.2	53.6
Total	100.0	100.0	100.0	100.0	100.0	100.0
Female sterilization	65.4	61.9	68.9	68.9	71.1	56.3
Male sterilization	3.7	5.9	1.6	0.5	3.0	8.2
IUCD	3.9	4.7	3.2	1.6	4.4	6.3
Oral pills	9.3	5.9	12.4	13.5	5.2	7.6
Condoms	10.9	16.1	6.0	7.3	8.9	17.1
Traditional	6.8	5.5	8.0	8.3	7.4	4.4
Total Sample Number	1159	393	766	578	286	295

**Table A21: Source of Family Planning Services and Supplies**

Type of Source	Type of Method			
	Sterilization	IUCD	Oral Pills	Condoms
<b>Total Sample</b>				
Total	100.0	100.0	100.0	100.0
Public	78.1	77.8	53.3	26.4
Private	22.0	22.2	46.7	73.6
N	41	9	45	53
<b>Urban</b>				
Total	100.0	100.0	100.0	100.0
Public	76.5	80.0	28.6	5.3
Private	23.5	20.0	71.4	94.7
N	17	5	14	38
<b>Rural</b>				
Total	100.0	100.0	100.0	100.0
Public	79.2	75.0	64.5	80.0
Private	20.8	25.0	35.5	20.0
N	24	4	31	15

Note: For sterilization and IUCD, source information was only asked if services were received in the past two years.

**Table A22: Mean Expenditures on Family Planning Services, by type of Method, by Type of Expenditure, and by Source of Supplies and Services**

Type of method and Type of cost	Total		Government		Private	
	Mean	Percent	Mean	Percent	Mean	Percent
<b>Sterilization</b>						
Total	771.0	100.0	354.4	100.0	2251.9	100.0
Services	652.4	84.6	291.2	82.2	1936.9	86.0
Transport/Food/Lodging	118.5	15.4	63.3	17.9	315.0	14.0
N	41		32		9	
<b>IUCD</b>						
Total	111.8	100.0	3.7	100.0	490.0	100.0
Services	88.9	79.5	0.0	0.0	400.0	81.6
Transport/Food/Lodging	22.9	20.5	3.7	100.0	90.0	18.4
N	9		7		2	
<b>Pills</b>						
Total for one month supply	12.5		0.4		12.9	
N	83		24		21	
<b>Condoms</b>						
Total for one month supply	14.3		0.0		19.4	
N	53		14		39	

Note: For sterilization and IUCD, expenditure information was only asked if services were received in the past two years.

**Table A23: Percent of Women who use Abortion Services, and Percent Distribution of Abortion Services users by Type of Care used and by Urban/Rural Status**

Type of Care	Total	Urban/Rural	
		Urban	Rural
<b>Total Sample</b>			
Used abortion services	4.6	6.0	4.1
N	864	250	614
<b>Total Users of Abortion Services</b>			
Total	100.0	100.0	100.0
<b>Government</b>			
Home	2.5	0.0	4.0
Facility	47.5	0.0	44.0
<b>Private</b>			
Home	12.5	53.3	20.0
Facility	37.5	46.7	32.0
N	40	15	25

**Table A24: Percent of Women who Paid for Abortion Services, and Mean Expenditures, by Type of Provider and by Urban/Rural Status**

Type of Provider**	N	Percent who paid something*	Total Users		Total Payers	
			Mean	S.D.	Mean	S.D.
<b>Abortion Services Users</b>						
Total	40	90.0	925.0	1112.7	1027.7	1127.4
Government only	20	100.0	873.0	786.4	873.0	786.4
Home Facility	1	100.0	300.0	NA	300.0	NA
	19	100.0	903.1	796.0	903.1	796.0
Private only	20	80.0	977.0	1387.7	1221.2	1452.7
Home Facility	5	60.0	50.2	50.0	83.7	28.3
	15	86.7	1285.9	1480.6	1483.7	1496.6

\* Includes persons who paid at least Re. 1 for consultations, drugs, tests, transport, or lodging.

**Table A25: Mean Expenditures on Abortion Services and Percent Distribution of Expenditures by Type of Service and by Place of Consultation**

Type of Costs	Total		Govern. Facility		Private Facility	
	Mean	Percent	Mean	Percent	Mean	Percent
<b>Abortion Services Users</b>						
Total	1027.7	100.0	903.1	100.0	1483.7	100.0
Consultation	364.8	35.5	212.1	23.5	661.5	44.6
Medicine	526.4	51.2	618.4	68.5	550.0	37.1
Transport/Food/Lodging	136.6	13.3	72.6	8.0	272.2	18.3
N	36		19		13	

**Table A26: Percent of Women who Report Symptoms Related to Reproductive Tract Infections, who Report Treatment, and who used Government, Private, or other Types of Care**

Type of Care	Total	Urban/Rural	
		Urban	Rural
<b>Total Sample</b>			
Report an RTI	37.5	23.7	44.7
N	1159	393	766
<b>Total Sample with RTIs</b>			
Report seeking treatment	19.7	33.3	15.7
N	442	99	343
<b>Total Users of RTI Services</b>			
Government	59.7	66.7	55.6
Private	41.3	33.3	46.3
Other	4.1	6.1	3.7
N	87	33	54

**Table A27: Percent of Women who Paid for RTI Treatment, and Mean Expenditures, by Type of Provider and by Urban/Rural Status**

Type of Provider**	N	Percent who paid something*	Total Users		Total Payers	
			Mean	S.D.	Mean	S.D.
<b>RTI Service Users</b>						
Total	87	87.4	625.9	1575.3	716.5	1667.2
Government only	47	85.1	374.6	617.1	440.2	647.7
Private only	32	96.8	1002.0	2433.2	1034.4	2466.4

\* Includes persons who paid at least Re. 1 for consultations, drugs, tests, transport, or lodging.

**Table A28: Mean Expenditures on RTI Services and Percent Distribution of Expenditures by Type of Service and by Place of Consultation**

Type of Costs	Total		Government		Private	
	Mean	Percent	Mean	Percent	Mean	Percent
RTI Service Users Total	716.5	100.0	440.2	100.0	1034.4	100.0
Consultation	133.5	18.6	44.3	10.1	250.8	24.2
Medicine	362.0	50.5	282.0	64.1	412.5	39.9
Tests	106.8	14.9	76.3	17.3	156.9	15.2
Transport	80.4	11.2	34.75	7.9	135.3	13.1
Food/Lodging	33.8	4.7	3	0.7	78.9	7.6
N	76		40		31	

**Table A29: Percent Distribution of Government Health Care users by Type of Facility First Utilized**

Type of Facility First Used	Antenatal Care		Postnatal Care		Child Health Care	
	Urban	Rural	Urban	Rural	Urban	Rural
N	54	72	23	26	40	80
Total	100.0	100.0	100.0	100.0	100.0	100.0
Clinics	40.7	66.7	17.4	80.8	27.5	73.8
Hospitals	59.3	33.3	82.6	19.2	72.5	26.3

Note: Table is based only on women who used government health care facilities.

## The Role of the Private Sector in Reproductive and Child Health Service Delivery in Rajasthan

William Winfrey, Barun Kanjilal, Suneeta Sharma, David Hotchkiss

### 1. Introduction

The status of reproductive and child health (RCH) in Rajasthan is poor and lags behind other states in India, especially those in the south of the country (Table 1). Much of this poor performance can be attributed to an inadequately financed health care system in which services are often unavailable, of poor quality,<sup>1</sup> or unaffordable.

**Table 1: Reproductive and Child Health Outcomes: Rajasthan, Kerala, India<sup>2</sup>**

Indicator	Rajasthan	Kerala	India
Total Fertility Rate	4.5	1.7	3.5
Infant Mortality Rate	86	13	72
Under-5 Mortality Rate	102	32	109
Maternal Mortality (per 100,000 live births)	516	—	—

In 1995, the Government of Rajasthan (GOR) spent Rs. 24 per capita on RCH, which constituted a mere 10th of the required spending for an essential reproductive health package in low-income countries, as estimated by the World Bank (World Bank, 1993). Private households augmented this spending considerably, with per capita expenditures of Rs. 96, bringing total spending on RCH to about Rs. 120, or 41 percent of the World Bank estimate. Clearly, the GOR, on its own, lacks

sufficient financial resources to provide essential RCH care to the state's population.

At present, the private sector, in both for-profit and not-for-profit forms, plays an important role in health care service delivery in India. In the Jalgoan District of Maharashtra, private medical practitioners treated 77 percent of illness episodes (Duggal and Amin, 1989, reported in Bhat, 1997). In Rajasthan in 1991, there were 14,046 doctors registered with medical councils, while only 2,156 doctors were on the government payroll (Bhat, 1997).

The role of the private sector is likely to increase as the people of Rajasthan continue to demand high-quality medical care. Currently, out-of-pocket household spending constitutes about 80 percent of RCH spending in Rajasthan. Furthermore, as per capita incomes increase people will increase the amount of money that they spend on private health care. A recent study estimated that for every 1 percent increase in income private health expenditures increased by 1.42 percent (Bhat, 1997).

The purpose of this paper is to promote dialogue on better mobilizing the private sector for reproductive health. The paper approaches the issue from the standpoint of both the provider (i.e., supply) and the consumer (i.e., demand). The paper uses secondary sources, including health facility censuses and situation

<sup>1</sup> In this paper the term quality is used loosely. Most often it is used in the sense of "perceived" quality, which has the most impact on service delivery utilization patterns. Less frequently, the term is used in its more objective sense, i.e., how health care relates to actual health outcomes or the medical content of health care. Where the distinction between the two senses is important we will alert the reader.

<sup>2</sup> Sample Registration System Survey data (Health Monitor, 1997). For Maternal Mortality Rate (IIHMR, 1998).

analyses, to describe the supply-side situation. The discussion of the demand side uses results from a survey of more than 1,000 households in Udaipur. The paper concludes with a presentation of key themes and issues that decision makers need to keep in mind in their efforts to promote private sector participation in RCH service delivery.

## 2. Background

### 2.1. What is the Private Sector?

The private sector in Rajasthan's health system is made up of a diverse group of service providers and health facilities. The formal private sector includes licensed hospitals, nursing homes, and pharmacies, as well as medical practitioners qualified under the allopathic medical system or one of the medical systems recognized under the Indian Systems of Medicine (ISM). The informal sector comprises unlicensed nursing homes, and a mosaic of health practitioners that includes independent unqualified medical practitioners, such as traditional birth attendants (known as dais) and quacks.<sup>3</sup>

Adding to the complexity of the service delivery panorama is the dual role of the government health practitioner. Many government practitioners in Rajasthan spend a significant portion of their time in private practice, thus blurring the line between public and private. A recent survey of service providers in Udaipur found that, on average, government doctors spent 17 percent of total clinic time in private practice (IIHMR, 1999a).

### *Nongovernmental Organizations (NGOs)*

Another important distinction in the private sector is between for-profit and not-for-profit. Most often, not-for-profit facilities are either run by or receive important support from NGOs or Private Voluntary Organizations (PVOs).<sup>4</sup> NGOs receive grants from the GOR and donors, and raise funds through user fees, income generation, and private fund raising. Activities pursued by NGOs include

- Operating health clinics;
- Providing technical and material support to community health organizations;
- Supporting or operating social marketing programs; and
- Advocating for improved RCH.

Unfortunately for the purposes of this report, we were unable to clearly quantify the role that NGOs play as part of the private sector in Rajasthan.

### 2.2 Current Government Policy Vis-à-Vis the Private Sector

Recognizing the increasing demand for quality health care backed by clients' demonstrated willingness to pay, the GOR encourages private sector participation in the delivery of health care. This participation is meant to provide relief to the already stretched public health system and to help improve quality of services through easy access to private hospitals and better client orientation. Within this context, the GOR has become the third state in India to put in place a legal framework to promote the participation of private hospitals and diagnostic centres in health care delivery.

For this purpose, the private sector was properly defined and divided into the following categories:

- Category A: charitable institutions willing to install at least one advanced diagnostic or curative plant/equipment from within the list approved by the government of Rajasthan or install capacity for advanced medical services or super-speciality as per the plan approved by the GOR.
- Category B: charitable institutions not covered under category "A."
- Category C: for-profit entities willing to set up hospitals offering specialized services approved by the government for a particular area.
- Category D: nursing homes, hospitals, diagnostic centers, clinics, and dispensaries that run on commercial lines and not covered by other agencies.

<sup>3</sup> Appendix A provides more complete descriptions of each of the providers.

<sup>4</sup> For the purpose of this paper, the distinction between PVOs and NGOs is not important. For simplicity, both types of organizations will be referred to as NGOs.

The GOR supports private institutions that fall into these categories by providing a regulatory framework, providing fiscal incentives, and supporting innovations. The regulatory framework supplies the laws and institutions that assure the public that it is receiving high-quality services from private health providers. The provision of incentives and support of innovations ensures that the private sector can grow to its full potential and provide quality services to the poor at the same time. Incentives for growth that the GOR bestows on private health institutions include

- Allotment of land to set up various categories of medical institutions in the private sector at subsidized rates. Land conversion charges are also less;
- Exemption from the payment of octroi duty and sales tax on medical equipment, plant, and machinery on the approved list; and
- Eligibility for other fiscal benefits provided by the Rajasthan State Industrial Development and Investment Corporation, Ltd. (RIICO) and Rajasthan Financing Corporation (RFC) or any other financial institution.

In exchange, medical institutions falling under categories A and B are required to provide at least 10 percent of the beds free to economically weaker sections and to poor patients referred to by the government authorized officer. They are also required to provide an outpatient department (OPD) facility free for one hour in the morning and one hour in the evening to economically weaker sections and poor patients referred to by the officer authorized by the state government.

In addition, various innovative steps have been taken to increase privatization in public hospitals. These include

### ***Introduction of user charges***

User charges have been introduced in all hospitals with more than 100 beds through medicare relief societies. Nominal fees are charged for OPD and inpatient department (IPD) registration. Charges for diagnostic tests, in-patient beds, and surgery are fixed at 50 percent of the market price. Average cost recovery is 15 percent of the hospital budget. The collected revenue is retained

at the facility in the society's account and used for the facility's development. A recent study conducted by the Indian Institute for Health Management Research (IIHMR) shows positive impact on quality and utilization of services.

### ***Adoption of wards by private organizations and individuals***

In addition, medicare societies have promoted the adoption of hospital wards through institutions like Lions Clubs, Rotary Clubs, charitable trusts, and individuals. This kind of activity helps involve the private sector in patient care and maintain the wards in better shape. Private organizations/individuals have adopted inpatient wards in 36 percent of the societies.

### ***Contracting out nonclinical services***

Medicare societies have contracted out the management of nonclinical services such as cleaning, laundry, security, management of medical stores, transportation services, and so on, which has contributed significantly to quality improvements.

### ***Enhancing the role of private sector (NGOs) in national health programs***

NGOs generally serve in remote and rural areas where government facilities are not available. Implementation of the national health programs used to be the responsibility of the government alone. Now a nodal agency has been set up to distribute funds to NGOs that help implement national health programs in remote and rural areas. Steps have been taken to increase participation of NGOs in the delivery of other preventive and promotion services.

### ***Sharing of public sector facilities with the private sector***

NGOs organize health camps in collaboration with the community-based organizations that provide outreach services. Usually government doctors and other paramedical staff provide their services in such camps. The package of health services provided in these camps includes immunization, supplementary nutrition, Iron Folate tablets, baby weighing, treatment for minor ailments, and health education. These outreach camps demonstrate the convergence of services at one place

and at one time. A nominal fee is also charged for such services.

**Public sector coordination with the private sector**

Public and private sectors work in co-ordination with each other. For example, public sector accepts the patients referred by the private sector. Also, public sector patients are referred for diagnostic tests to private diagnostic centers when such services are not available in the public sector.

**Private sector provision of medical education and nurse training**

The current policy allows the private sector to provide medical education and nursing training. This policy will also help develop private sector provision of services since every educational institution is required to have its own hospital. The overall health system will benefit from the increase in number of beds.

The GOR is open to further innovative ideas. The following are areas being considered for expanding public-private mix:

- Contracting with local private providers at block-level community health centers (CHCs) and sub-district hospitals (SDHs), especially where government staff is unavailable.

- Training and contracting private doctors to provide services at government facilities.
- Using established private consultants to make quality inspections of hospitals.
- Using the capacity of selected private hospitals/ diagnostic centers for high-tech diagnostic procedures.
- Expanding the medicare relief societies to CHC level and increasing the representation of NGOs and private providers in the management committees of the societies.

**3. Private Sector in Rajasthan**

Unlike the public sector, the private sector is not unified. Therefore, it is difficult to obtain solid and comprehensive statistics about the size and the breadth of services that it offers. Below, we offer a glimpse of the private sector in Rajasthan; however, the picture is incomplete.

**Supply**

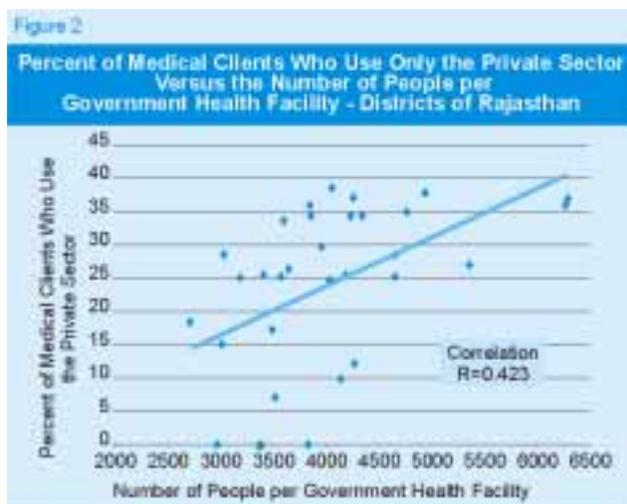
There are 533 hospitals and nursing homes in Rajasthan. Appendix Table B.1 presents a district-by-district presentation of private sector facilities and personnel in Rajasthan. About 60 percent of the private hospitals and nursing homes are concentrated in five districts with less than 35 percent of the total population of the state, namely Jaipur (182 hospitals), Ganganagar (45), Jodhpur (39), Ajmer (34), and Udaipur (33). The share of private sector beds varies from 0–2 percent in Tonk and Jaisalmer to 45–50 percent in Jaipur and Ganganagar. The share of the private sector is greatest in the northeastern parts of Rajasthan and lowest in the desert and tribal areas. Modern, institutional sources of private health care are almost nonexistent in desert districts, such as Jaisalmer and Barmer. Dependence on the public health care system and non-qualified health practitioners is necessarily great in these districts. As compared to other states in India, private sector participation in the delivery of health care in Rajasthan is low.



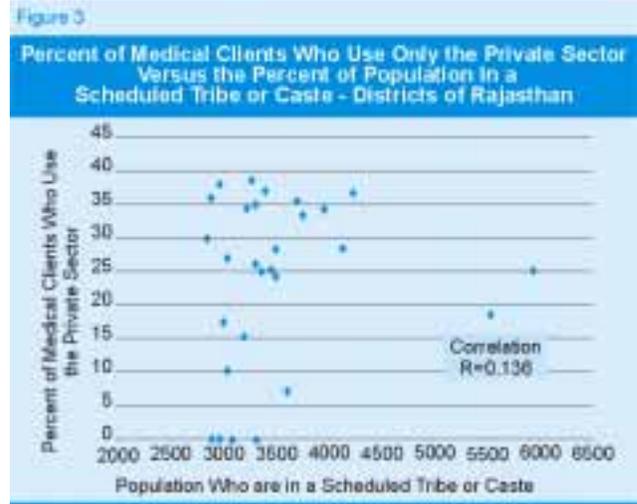
**Demand**

There is also great variation by district in the percentage of health seekers who go to the private sector in Rajasthan. Appendix Table B.2 presents the percentage of health seekers who use the public sector only, the private sector only, and who frequent both sectors. There is wide variation in the percentage of health care seekers who go to the private sector. For example, in Jhunjhunu, Jaipur, and Ganganagar, more than 45 percent of the health seekers went to the private sector at some point for health care. In the less developed districts of Jaisalmer, Barmer, and Jodhpur, the proportion of inpatients treated by the private sector is nearly zero despite gross inadequacy of government health infrastructure.

On a district-by-district basis there are many potential reasons why one district would have a higher percentage of clients served by the private sector. Among the many are two hypotheses that we examine here (1) private sector use may be greater where there are fewer government facilities; and (2) private sector use may be greater where economic development is greater. These hypotheses are examined in the scatter-plots of Figures 2 and 3. In Figure 2, the percentage of the population that frequented a private sector facility is positively correlated with the number of people per government facility ( $R=0.423$ ). In other words, a lack of government facilities is correlated with increased usage of the private sector. Contrary to expectations, in Figure 3, the



<sup>5</sup> Scheduled tribes constitute 36.3 percent of the population of Udaipur.



percentage of the population using the private sector is weakly correlated with percentage of the population that is in a deprived group ( $R=0.136$ ), counter to our expectations.

**4. Private Health Services in Udaipur**

**4.1 Supply Side**

In spite of the poverty in Udaipur, the district has a vigorous private sector. Table 2 presents a brief overview of a private sector inventory in Udaipur District. The district has 43 private medical facilities, which constitutes 8 percent of total number of private hospitals in the state. Considering that the district contains only 5 percent of the state population, it ranks above average in terms of the presence of private hospitals. The high percentage is partially explained by the presence of a large urban centre, Udaipur. The hospitals and private clinics are concentrated in the district headquarters (i.e., Udaipur town).

In addition to 147 registered private practitioners, government doctors also have private practices. Given the informal nature of these private practices, there is no complete accounting of the government doctors with after hours practices. On the basis of observation and discussion with senior key officials at the district level, however, such practices appear to be common for all levels of doctors.

Government facilities in tribal areas are often inaccessible and reflect a poor quality of care.<sup>5</sup> Unqualified practitioners (e.g., dais and quacks) most

**Table 2: Health Facility and Personnel Inventory in Udaipur, Rajasthan**

Private Sector	
Number of private hospitals / maternity homes	43
Number of registered private practitioners MBBS/MD Ayurvedic	122 25
Number of registered traditional practitioners	136
Number of Trained Birth Attendants	577
Number of Untrained Birth Attendants	2,666
Percentage of villages where trained birth attendants are available	14.9

Source: Annual Work Plan (1999-2000), N.D.

often fill in the gap in the market. Many of these unqualified practitioners are reluctant to make referrals to qualified doctors or hospitals. Often, they wait until the condition of their patients is life threatening. As one study on the tribal areas of Udaipur indicates:

*It was also possible to interview some of the private medical practitioners during the visits. Except for one, who was qualified in the ayurvedic (or indigenous) system of medicine, all the others, though claiming to be qualified, did not have any proper training. What most of them have done is [work] with some qualified doctor for a couple of years and then [obtain] a certificate, mostly from Uttar Pradesh or Bihar states. These certificates obtained by these practitioners are Ayurved Ratan, Vaid Visharad, etc. Even after obtaining the certificates in the ayurvedic system of medicine, most of them prescribed allopathic medicines, for which they are not qualified.*

*These practitioners have a good load of patients; most of them say that they see around 300 cases per month. They claim to cure seasonal and non-specific diseases like malaria, fever, allergy, vomiting, flu, etc. They said they referred complicated cases to government hospitals. But,*

*the community leaders opined that they do not refer even serious cases to hospitals, but hang on till the last minute in order to earn money. (Singh and Gupta, 1997:21)*

The dais participate significantly in the delivery of reproductive health services to women in the villages. According to the National Family Health Survey (1995), about 77 percent of total births in the state take place at home, of which dais attend 46 percent.<sup>6</sup> A recent survey confirms that Udaipur follows the same pattern (IIHMR, 1998). Only a small percentage of the Traditional Birth Attendants (TBAs) are trained in safe delivery practices, and the same survey reveals that in only 18.5 percent of home deliveries the TBAs use Dai Delivery Kits (DDK).<sup>7</sup>

#### 4.2 Demand Side: Use of Private Reproductive Health Services in Udaipur

In June of 1999, the IIHMR conducted a survey of more than 1,000 households in the Udaipur District of Rajasthan about their RCH seeking behavior (Hotchkiss et al., 2000). The report contains complete details on this survey. The data collected contain information about utilization of, source of, and expenditures on RCH services by the women of Udaipur. Table 3 provides an overview of the information collected by IIHMR.

In the discussion that follows, we address several issues.

- First, we analyse the source mix of RCH care for women in Udaipur and find that a large percentage of the women who need RCH-related care, use the private sector. Depending on the particular health intervention and geographical area (i.e., rural vs. urban), the percentage of health care seekers using the private sector can exceed 70 percent.
- Second, we examine the economic profile of women who use private health care. Although there are exceptions for some services, women who use the private sector tend to come from higher income groups and are less likely to be from scheduled

<sup>6</sup> Most of the rest are attended by relatives and/or friends.

<sup>7</sup> DDKs contain the consumables needed for sanitary delivery in the case of uncomplicated deliveries. Even with DDKs, complicated deliveries must be referred to higher levels of the service delivery hierarchy.

**Table 3: Information Collected in the IHMR RCH Utilization and Expenditure Survey**

RCH service	Source of Service Delivery <sup>8</sup>	Types of Expenditures
Maternity related Prenatal care Delivery services Postnatal care Child health care Family planning Reproductive tract infections (RTIs) Abortion services	Government Hospital Clinic Subcenter (SC) Primary health centers (PHC)/CHC Camp Jan mangal couple Home/ANM Private sector Hospital Doctor ISM practitioner Dai (Home) Medical shop General stores	Consultation Hospitalization Medicines Tests Food Lodging Transportation

tribes or castes than their public sector counterparts. (Depending on the particular health care need and the area, the economic profile of women using the private sector may or may not be similar to the profile of women in the public sector.)

- Third, we assess how effectively government services are targeted to the poor. The conclusions are disheartening. A significant proportion of high-income users frequents the public sector.
- Fourth, we make the case that for many RCH services, public sector pharmaceutical prescription, and purchases have been essentially privatized.

#### 4.2.1 Utilization of the Private Sector

##### Maternity Related Services

There is considerable variation in the share of RCH services that the private sector provides both across services and between the urban and rural areas.<sup>9</sup> In Udaipur, a district with high birth rates, perhaps the most important RCH service is birth delivery. Table 4 shows the source distribution for various RCH services associated with maternity. Overall, the qualified private sector provides around 15 percent of all delivery services. Most all of these private deliveries are in medical facilities.

In urban areas, dais deliver about 18 percent of babies, and in rural areas, they are responsible for more than 60 percent of all birth deliveries. Clearly, any policy related to improving birth outcomes must address the issue of dais. Either dais must be displaced by more qualified private or public practitioners, or they must be given the skills and supplies to ensure healthy birth outcomes.

If one takes the private sector as the sum of traditional and qualified private providers, between 20 and 25 percent of all prenatal, postnatal, and childcare services are offered by the private sector. In urban areas, 30 percent of women receive at least some prenatal care and 20 percent at least some postnatal care from the qualified private sector. In rural areas, women amounting to about one-half of those percentages of receive services from the private qualified sector.

In rural areas, traditional providers in the private sector are more important, especially in the provision of postnatal care. This higher dependence on the private sector is probably due to the high proportion of rural women who use the dais to assist them during birth. If

<sup>8</sup> Unfortunately, the survey instrument was unable to differentiate NGO providers from either the commercial providers or the public providers. The tables of data that follow must be interpreted with caution, since there will inevitably be some over-statement of the public and commercial sector shares because, in fact, some of each includes services provided by NGOs.

<sup>9</sup> Obtaining medical care for any given condition is not necessarily a simple one-step process. A seemingly simple birth delivery attended by a dai may have complications. These deliveries should be quickly referred to a more qualified practitioner or a well-equipped facility. Similarly, a public facility that is not well stocked in medicine may write a prescription to be filled at a commercial pharmacy. In each of these cases, a well-designed survey will report at least two sources for medical care. Therefore, many of the results may show a source choice for RCH services that sum to greater than 100 percent

dais are considered important elements in assistance to women in the delivery of their babies, they might also be called upon to help new mothers with basic well-baby care. This may also have important implications for providing new mothers with information about safe and effective methods of family planning.

About 30 percent of users of medical care for childcare receive those services from the private sector. In India and worldwide, people will use the private sector for health services that are curative in nature. Therefore, the high usage of the private sector for child health care may be an indication of the curative nature of many interventions for young children.<sup>10</sup>

### Family Planning

In Rajasthan, 42 percent of married women between

ages 15 and 49 use a modern method of family planning (Hotchkiss et al., 2000). In Udaipur, the private sector is the most active source of provision for re-supply methods of family planning, such as oral contraceptives and condoms. In urban areas, 71.5 percent of oral contraceptive users obtain their supplies from the private sector, whereas in rural areas, 35.5 percent receive supplies from the private sector. This large differential is most likely due to the stronger presence of SCs and PHCs in rural areas, as well as the larger presence of commercial infrastructure in the urban areas.<sup>11</sup> In both urban and rural areas of Udaipur, about 20 percent of sterilization acceptors in the last two years obtained their services from the private sector.

Similar to child health care services, abortion and RTI treatment services are largely curative in nature.<sup>12</sup>

**Table 4: Percentage of Health Care Users Who Chose Government, Private, and Other Providers, by Type of Health Care and Urban/Rural Status**

Type of Care	Birth Deliveries	Prenatal Care	Postnatal Care	Child Health Care
Urban				
Government	65.8	75.0	80.0	74.5
Home	7.6	2.3	14.3	3.6
Facility	58.2	75.0	65.7	72.7
Private Qualified	16.5	29.2	20.0	32.7
Home	1.3	1.4	0.0	1.8
Facility	15.2	29.2	20.0	30.9
Traditional (Dais)	17.7	1.4	5.7	0.0
N	79	72	81	79
Rural				
Government	25.0	83.1	81.5	75.0
Home	13.7	41.9	59.3	29.1
Facility	11.3	52.9	32.1	54.1
Private Qualified	11.7	17.6	11.1	28.4
Home	2.8	0.7	1.2	3.4
Facility	8.9	16.9	9.9	25.7
Traditional (Dais)	63.3	4.4	21.0	6.1
N	248	136	35	248

<sup>10</sup> Curative health care interventions for young children include treatment of diarrhea, respiratory infections, and communicable diseases such as measles and chicken pox. Preventive health care interventions include immunizations against childhood diseases such as chicken pox, measles, mumps, diphtheria, etc. Many health care experts argue that a proper role for the government is to concentrate on immunizations and other preventive measures, while leaving curative measures to the private sector.

<sup>11</sup> Measham and Heaver (1996) noted that there was an urban bias in social marketing outlets. Also, they noted that 71 percent of potential sources for condom distribution do not stock them in Haryana, Rajasthan and Uttar Pradesh.

<sup>12</sup> Family planning or contraceptive services might be considered the preventive counterpart to abortion services. Westoff et al. (1998) present evidence for this in three central Asian republics. Preventive services for RTIs consist of IEC messages, which are usually the province of the public sector.

**Table 5: Percentage of Family Planning Users Who Chose Government, Private, and Other Providers, by Type of Health Care and Urban/Rural Status**

Type of Care	Sterilization	Pill	Condom
Urban			
Government	76.5	28.6	5.3
Private	23.5	71.4	94.7
Traditional	0.0	0.0	0.0
N	17	14	38
Rural			
Government	79.2	64.5	80.0
Private	20.8	35.5	20.0
Traditional	0.0	0.0	0.0
N	24	31	15

**Abortion and RTI treatment**

Abortion and postabortion care requires high quality services if performed safely. Similarly, a common treatment for reproductive health infections is correctly prescribed and effective antibiotics. Table 6 shows that more than 50 percent of women who seek abortions and almost 40 percent who are treated for RTIs seek service in the private sector. In addition, the private sector performed all of the abortions reported in urban areas. Perhaps the high number of abortions and RTI treatments in the private sector reflects the high premium that women place on quality and confidentiality.

**Table 6: Source of Health Services for Abortion and RTI Treatment by Urban/Rural Status**

Type of Care	Abortion	RTI
Urban		
Government	0	66.7
Private	100.0	33.3
Home Facility	53.3	
Facility	46.7	
N	15	33
Rural		
Government	48.0	55.6
Home Facility	4.0	
Facility	44.0	
Private	52.0	46.3
Home Facility	20.0	
Facility	32.0	
N	25	54

**4.2.2 Economic Profiles of Private Sector Users of RCH Services****Birth Deliveries**

Table 7 shows that in urban areas users of qualified private health care belong to higher socioeconomic status groups than their public sector counterparts. For example, more than 60 percent of urban, qualified private sector users belong to the highest income quartile, whereas less than 40 percent of public sector users in urban areas hail from this income group.

**Table 7: Demographic and Socioeconomic Profiles of Birth Delivery Service Clients—A Comparison of Private Sector and Public Sector Users**

	Urban Areas			Rural Areas		
	Qualified Private	Public	Dais	Qualified Private	Public	Dais
Income Group						
Lowest 50 percent	7.7	21.2	35.7	65.5	58.1	86.6
Middle 25 percent	30.8	42.3	50.0	24.1	30.7	11.5
Upper 25 percent	61.5	36.5	14.3	10.3	11.3	1.9
Caste or Tribe Affiliation						
Scheduled caste	7.7	19.2	21.4	13.8	11.3	4.5
Scheduled tribe	0.0	5.8	14.3	31.0	38.7	59.8
Neither	92.3	75.0	64.3	55.2	50.0	35.7
N	13	52	14	29	62	157

Women who are assisted by dais in birth deliveries belong to lower socioeconomic groups than users of either public or qualified private providers. In rural areas, almost 90 percent of dai clients are from the lowest income group and almost none are from the upper 25 percent. Similarly, more than 85 percent of the dai clientele in urban areas belong to the lower and middle income groups. Also, women who use the public sector or dais for birth delivery services are more likely to belong to scheduled castes or tribes than those who visit qualified private practitioners. In the rural areas, almost 60 percent of the dais' clients are drawn from the scheduled tribes.

### Family Planning

Table 8 shows that on average, private sector family planning users are wealthier than their public sector counterparts. In rural areas, 65 percent of the private sector clients are drawn from the bottom one-half of the income distribution; while in the public sector, it is 76 percent. In urban areas, the differential is larger: 10 percent for the private sector versus more than 30 percent in the public sector. In rural areas, private sector clients are less likely to belong to a scheduled caste or tribe than their public sector counterparts. This pattern of service delivery usage matches with expectations concerning ability and willingness to pay amongst the relatively wealthy versus the poor.

### Child Health Care

In rural areas, the difference in client income profiles between the private and public sectors is not pronounced. About 80 percent of private sector clients and 75 percent of public sector clients belong to the lower one-half of the income distribution level. This situation differs from the pattern for family planning and delivery services, in which the public sector comprises a larger percentage of poor clients. The similarity in public and private client profiles in rural areas perhaps indicates a high prevalence and use of unqualified private practitioners. The picture in urban areas closely matches client profile patterns for other services. Public sector users are grouped at the middle of the income distribution, while the private sector users are grouped at the high-income level.

### 4.2.3 The Effectiveness of Targeting

Notwithstanding the differences in the economic profile of the clients between the public and private sectors, there is still a large percentage of high-income clients, especially in urban areas, who use the public sector for RCH services. Table 10 presents data on the percentages of women in the each of the income classes who use the public versus private sector. If public subsidies were well targeted, lower income women would be more likely to use government facilities than high-income women.

**Table 8: Demographic and Socioeconomic Profiles of Family Planning Clients—  
A Comparison of Private Sector and Public Sector Users**

	Rural		Urban	
	Private	Public	Private	Public
Income Group				
Lowest 50 percent	65.0	75.9	9.8	34.8
Middle 25 percent	25.0	18.5	29.4	17.4
Upper 25 percent	10.0	5.6	60.8	47.8
Caste or Tribe Affiliation				
Scheduled caste	0.0	7.4	9.8	8.7
Scheduled tribe	25.0	46.3	2.0	0.0
Neither	75.0	46.3	88.2	91.3
N	20	54	51	23

**Table 9: Demographic and Socioeconomic Profiles of Child Health Care Clients—  
A Comparison of Private Sector and Public Sector Users**

	Rural		Urban	
	Private	Public	Private	Public
Income Group				
Lowest 50 percent	81.0	74.8	22.2	19.5
Middle 25 percent	14.3	18.0	27.8	43.9
Upper 25 percent	4.8	7.2	50.0	36.6
Caste or Tribe Affiliation				
Scheduled caste	9.5	7.2	16.7	12.2
Scheduled tribe	42.9	47.8	5.6	7.3
Other caste	47.6	45.1	77.8	80.5
N	42	111	18	41

For birth delivery services in urban areas, women of all income groups are equally likely to use public health facilities. In rural areas, the pattern of subsidies is exactly opposite the expectations one would have for effective targeting. High-income women are three times more likely than lower income women to use the public sector. Child health care services are also poorly targeted in rural areas, with women from the top one-half of the income distribution more likely to use government services than those from the bottom one-half.

Only public resources for family planning services in urban areas are targeted more or less efficiently. Women in the top 25 percent of the income distribution are only one-half as likely to use the public sector as the women in the lower 50 percent. In rural areas, this pattern is only partially matched: 75 percent of the women in the poorest income group use the public sector, while 60 percent of the women in the wealthiest 25 percent use the public sector for family planning services.

**Table 10: Use of Services by Different Income Groups**

	Urban			Rural		
	Lowest 50 percent	Middle 25 percent	Upper 25 percent	Lowest 50 percent	Middle 25 percent	Upper 25 percent
Birth Delivery						
Private	5.9	12.1	27.6	9.9	15.9	23.0
Public	64.8	66.7	65.5	18.8	43.2	53.9
Traditional	29.4	21.2	6.9	71.3	40.9	23.1
Child Health Care						
Private	33.3	21.7	37.5	30.1	24.0	20.0
Public	66.7	78.3	62.5	73.4	80.0	80.0
Family Planning						
Private	24.1	33.4	39.8	38.4	78.9	73.8
Public	75.9	66.6	60.2	61.6	21.1	26.2

#### 4.2.4 The “Privatization” of Medicine in the Public Sector

Many researchers have documented that public sector patients are making out-of-pocket payments for health services in the public sector (see, for example, Hotchkiss et al., 2000). Table 11 presents the average payments that are made for consultant fees and medicines for a cross-section of RCH services. The table is divided into two parts, one for the expenditures made for medicines and one for the expenditures made on consultant fees. In each of the parts, the third column presents the ratio of expenditures by government clients to the expenditures made by private sector clients. For medicines, the ratio ranges from 0.43 for child health care to more than 1.12 for abortion services. For consultations, the ratios range from 0.11 to 0.35.

The high ratios for medicines are strong evidence that for pharmaceuticals the government system is to a large extent de facto privatized. In most cases, when government patients make payments for medicines, clients receive prescriptions from government doctors, which they then fill at private pharmacies. That the level of out-of-pocket expenditures so closely matches that in the private sector is a strong indication that very little medicine is actually being dispensed by the government facilities.

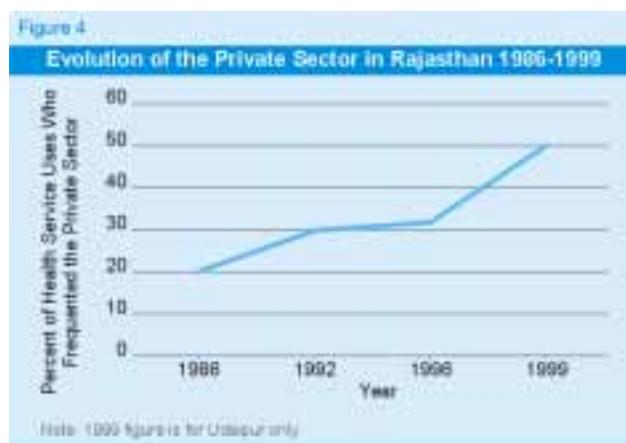
### 5. Key Issues

This section briefly summarizes the important results discussed in preceding sections.

#### RCH Users in Rajasthan Are Willing to pay for High-Quality Medical Services<sup>13</sup>

A significant proportion of RCH clients in Rajasthan use the private sector. Between 30 and 100 percent of child health care, RTI treatment and abortion services are provided through the qualified private sector. Clients spend relatively large amounts of money to consume these largely curative services in the private sector (Hotchkiss et al., 2000), thus demonstrating a willingness to pay for easy access, high quality, and confidentiality.

In the last 20 years, the people of India in general and Rajasthan specifically have become more reliant on private sector services to meet their health needs. Figure 4 shows that the percentage of Indians who use the private sector for health services has increased from 20 percent in 1986 to 50 percent in 1999 (Hotchkiss et al., 2000). The potential of the private sector and clients’



**Table 11: Comparison of Expenditures Made on Pharmaceuticals and Consultations in the Course of Medical Treatment**

	Pharmaceuticals			Consultations		
	Public	Private	Ratio (Public/Private)	Public	Private	Ratio (Public/Private)
Prenatal Care	374.9	432.4	0.87	23.4	218.9	0.11
Child Health Care	112.3	266.7	0.42	28.3	101.2	0.28
Abortion Services	618.4	550.0	1.12	212.1	661.5	0.32
RTIs	282.0	412.5	0.68	44.3	250.8	0.17
Birth Delivery—Normal Institutional	369.7	546.6	0.68	132.7	399.3	0.33

<sup>13</sup> As mentioned, quality as it relates to people’s actual service delivery utilisation is “perceived” quality of care.

willingness to pay is likely to grow as more Indians become trained in the medical professions and as Indians expect medical services tailored to meet their needs.

### ***Distribution of the Private Sector is Uneven***

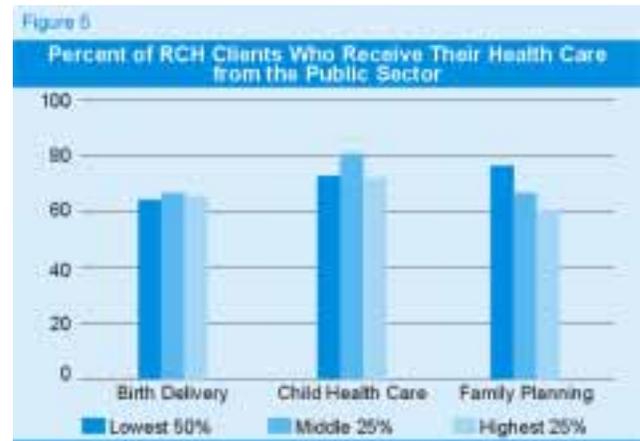
Qualified private doctors and hospitals are concentrated in heavily urbanized districts of Rajasthan. In the western districts of Jaisalmer, Barmer, and Jodhpur, there are practically no private sector health care services. On the other hand, unqualified private health care providers (i.e., dais and quacks) are prevalent and widely frequented by RCH clients in Rajasthan's rural and sparsely populated areas.

### ***Quality of Services Provided by Private Health Practitioners Is Variable***

Qualified and unqualified private providers of RCH services exist side by side in Rajasthan's health system. Qualified private practitioners are adequately trained to provide good quality RCH services. Dais and quacks often have little or no training. It is precisely these dais and quacks, however, who provide services to women who are outside the reach of the public sector and cannot access or afford modern private sector services. These unqualified practitioners often fill in the gaps of the public health care system where auxiliary nurse midwives (ANMs) and PHCs do not exist or are overburdened. For example, almost 90 percent of the births in rural areas are attended by dais.

### ***Government Doctors Engage in After-hours Private Practice***

Private practice by government doctors has the promise of being a partial solution to Rajasthan's many public health problems. In their private practices, government doctors can supplement their modest salaries. Also, access to the private practices offer middle income people of Rajasthan the potential to receive medical services with improved amenities.<sup>14</sup> On the other hand, allowing private practices by government physicians may create adverse incentives. For example, problems arise when government doctors refuse to see patients during



regular hours or refer them to their after-hour practices, even when not necessary.

### ***Government Services Are Often Ineffectively Targeted***

Two complementary pieces of evidence show that the scarce government resources available for RCH services are not being effectively targeted: (1) use of the private sector at the district level is almost completely uncorrelated with the overall economic status of the district. In other words, use of private sector health services is equally likely in low- and high-income districts. And (2) with the exception of family planning services, relatively wealthy RCH clients are equally or more likely to use subsidized government health care than their less wealthy counterparts. Figure 5 shows that there is very little difference across the income distribution in the use of the public sector.

### ***Affordable Drugs Are Not Available in the Public Sector***

Public sector clients pay a significant amount of money for drugs, which amount to more than 50 percent of private sector payments for similar medicines. This is a clear indication that consumers are compelled to purchase medication in the private sector because public facilities often suffer from a shortage of essential drugs. In essence, pharmaceuticals in the government health government system are to a large extent de facto privatized and may well be unaffordable to low-income clients.

<sup>14</sup> The improved amenities may be shorter waiting times or more personal attention. The quality of the medical content of services should be identical in both the private and public services offered by the government doctor.

## 6. Conclusion

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The GOR's fiscal inability to provide the required level of RCH services, coupled with the increasing demand for quality health care and clients' demonstrated willingness to pay has created a situation in which private sector participation in the delivery of RCH services is necessary and feasible. It is time for the GOR to think beyond the scope of the public sector health system and formally

recognize, incorporate, and support the private sector in all of its credible forms, including coordinating and working with both the formal and informal private sector to determine an effective and equitable public-private mix in RCH service delivery.<sup>15</sup> The findings and key issues discussed in this paper are intended to inform decision makers in their efforts to mobilize the private sector.

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<sup>15</sup> See Appendix C for a brief discussion on a generic framework for understanding how the public and private sector might divide up the responsibility of health care provision.

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## Appendix A

### Description of Private Medical Providers

#### **Formal Sector**

Private hospitals are a diverse collection of facilities that may have fewer than 20 beds, or hundreds of beds if corporately owned or backed by groups with large financial resources. Private hospitals may narrowly specialize in particular areas such as maternal care, ophthalmology, or diseases of the heart. They may also be multi-speciality enterprises that can meet the needs of almost any ill person.

Nursing homes are smaller facilities, often run as adjuncts to the practice of private doctors. These facilities offer a variety of services such as birth delivery, general diagnostics and even surgery. They have relatively small staffs, often a principal and a second consulting doctor; or in other cases, a husband and wife team. The facilities sometimes have high-tech diagnostic equipment, such as ultrasounds and x-rays, but often they make referrals to other facilities (Nanda and Baru, 1994).

#### **Informal Sector**

Qualified private doctors and nurses are practitioners who have received formal training most often through government training programs. Their medical practices are most often in the tradition of allopathic<sup>16</sup> medicine. These practitioners are concentrated in urban areas. In this group are also certain public medical personnel. These public doctors and nurses have after-hour private practices. Also, in the rural areas, many public sector nurse midwives assist home births for which they receive payment.

Many non-allopathic providers of medical services are within the regulatory and support system of the government. Ayurvedic, Homeopathic, and Unani each have qualifications and standards of service that are defined by the ISM. Ayurveda, which is the most common, relies on holistic diagnoses of a patient's spiritual and physical condition. Its treatments are similarly holistic regimens of non-allopathic medicine, diet, and specific exercise.

Most of the practitioners the non-allopathic traditions of medicine have incorporated to a greater or lesser extent the pharmaceutical possibilities of allopathic medicine. For example, often practitioners will prescribe short courses of anti-biotic (Rohde and Viswanathan, 1995). Often the quality of non-allopathic is perceived as being superior to allopathic providers because more time is spent in diagnosis of conditions. Rohde and Viswanathan (1995) report that non-allopathic practitioners spend, on average, three to 10 times longer with their patients than do allopathic practitioners.

Unqualified medical practitioners are people (usually men) who use allopathic and non-allopathic methods of diagnosis and treatment. Unqualified practitioners exist in both the rural and urban areas, although in the rural areas they are often the only alternative to the public sector. Unqualified practitioners operate outside the regulatory system of the government and are often referred to as quacks.

Dais (Traditional Birth Attendants). Dais attend large numbers of births, particularly in rural areas. They may or may not have specific formal sector training. According to the National Family Health Survey (1995), about 77.3 percent of total births in the state take place at home of which 46 percent are attended by a TBA (the most of the rest attended by relatives/friends). Udaipur follows the same pattern as confirmed by a recent survey (IIHMR, 1998). A small percentage of these TBAs are trained in following safe delivery practices. The same survey reveals that about in 18.5 percent of home deliveries in the Udaipur District, DDKs were used by the TBAs to conduct the deliveries.

<sup>16</sup> In short, allopathic refers the tradition of medical treatment that relies on a detailed understanding of specific, scientifically derived understanding of body functions and of "germ theory."

## Appendix B: The Private Sector in Rajasthan

**Table B.1: Distribution of Private Hospitals in Rajasthan**

S. No.	District	Total number of hospitals and nursing homes in the private sector	Number of beds in private hospitals (>10 beds)	Number of beds in public sector	Share of private sector beds
1	Ajmer	32	500	2082	19.3%
2	Alwar	28	315	1516	17.2%
3	Banswara	8	NA	NA	NA
4	Baran	0	0	NA	0%
5	Barmer	0	0	NA	0%
6	Bharatpur	7	99	1043	8.7%
7	Bhilwara	2	48	1387	3.3%
8	Bikaner	9	200	2018	9.0%
9	Bundi	3	70	491	12.4%
10	Chittorgarh	1	NA	NA	NA
11	Churu	11	103	1183	8.0%
12	Dausa	15	63	566	10%
13	Dholpur	4	142	372	27.6%
14	Dungarpur	0	0	NA	0%
15	Ganganagar	45	687	830	45.3%
16	Hanumangar	4	50	710	6.6%
17	Jhalawar	3	NA	NA	NA
18	Jaisalmer	0	0	NA	0%
19	Jalore	0	98	729	11.8%
20	Jhunjhunu	19	NA	NA	NA
21	Jodhpur	39	NA	NA	NA
22	Kota	29	NA	NA	NA
23	Nagaur	5	178	1370	11.5%
24	Rajsamand	4	242	714	25.3%
25	Pali	7	22	1264	1.7%
26	Sawai Madhopur	12	85	940	8.3%
27	Sikar	28	NA	NA	NA
28	Sirohi	NA	222	509	30.4%
29	Tonk	2	0	693	0%
30	Udaipur	43	NA	NA	NA
31	Jaipur	182	NA	NA	NA
	<b>Total</b>	<b>543</b>			

Source: Finch and Mishra (1998); IHMR (1999b)

NA: Not available

**Table B.2: Use of Health Facilities in the Districts of Rajasthan and Factors Potentially Influential for Private Sector Utilization**

District	Percent of Respondents Who Visited the Facilities for Treatment			Population Covered by Each Government Facility in the District	Percent of the Population Which is in Either a Scheduled Tribe or Caste
	Government facilities only	Private facilities only	Both		
S. Madhopur	14.8	37.2	48.0	4253	44.5
Jhunjhunu	15.5	35.8	48.7	3850	17.3
Jaipur	16.7	36.9	46.9	6282	27.5
Dholpur	18.4	38.7	43.0	4051	24.8
Baran	20.3	34.6	45.0	3853	NA
Bikaner	20.9	37.9	41.4	4943	18.9
Bharatpur	23.0	34.3	42.7	4334	23.9
Chittorgarh	24.1	33.7	41.9	3602	34.9
Ganganagar	24.7	28.6	46.8	4650	29.9
Alwar	25.6	35.0	39.4	4764	25.8
Sikar	26.0	29.8	44.2	3955	16.7
Bundi	26.1	34.4	39.6	4232	39.1
Kota	27.6	35.9	36.6	6265	33.9
Jhalawar	28.5	25.5	46.0	4179	29.1
Ajmer	29.3	27.0	43.7	5353	20.8
Dausa	40.1	12.5	47.3	4264	NA
State	43.6	24.8	32.2	4028	29.7
Dungarpur	44.7	18.5	36.9	2708	70.4
Banswara	46.1	25.0	28.8	3192	78.4
Tonk	51.1	7.1	41.9	3520	32.1
Udaipur	54.9	25.3	19.8	3565	27.5
Sirohi	57.1	28.6	16.4	3028	42.6
Bhilwara	59.8	26.3	36.5	3645	26.1
Hanumangarh	60.3	25.3	14.5	4650	NA
Rajsamand	60.9	25.4	13.7	3410	NA
Jalore	65.1	0.0	18.5	3370	26.2
Nagaur	66.0	17.4	16.7	3487	20.0
Pali	71.8	15.4	12.9	3009	23.6
Churu	72.9	10.0	17.2	4137	20.6
Jodhpur	77.0	0.0	13.0	3832	18.1
Barmer	84.7	0.1	15.2	3353	21.6
Jaisalmer	96.8	0.1	2.6	2970	19.4

Sources:

Columns 2, 3 and 4: Concurrent Evaluation of Reproductive and Child Health Services in Rajasthan. 1997, IIMR

Column 5: Progress Report 1995-96, Directorate of Medical, Health and Family Welfare, Jaipur, Rajasthan (cited in Rajasthan: A CASIM Data Set 1996, Executive Program in Health and Population for Developing Countries, Tab Health Infrastructure and Personnel, p. 23)

Column 6: Calculations based on Census of India, 1991, Rajasthan, Final Population Figures, Directorate of Census Operations [Population in scheduled tribes or castes] and India's Social Sectors, February 1996, Center for Monitoring Indian Economy [Total District Level Population]. Cited in Rajasthan: A CASIM Data Set 1996, Executive Program in Health and Population for Developing Countries Tab Demographic Profile, pages 16 and 9-11.

## Appendix C

# Framework of the Division of Responsibility Between the Private and Public Sectors

When perfect markets exist, classical economists and their heirs argue that the private sector should provide services for everyone. Competition will ensure that quality is high and prices are low.<sup>17</sup> The free flow of information and appropriate regulation will ensure that good business practices are followed. Also, consumers will purchase a quantity of medical care that will maximize their well being. There are, however, three important exceptions to these general observations.

1. *Health services often have large externalities.* The consumption of some health services affects the health or general well being of people other than the immediate consumer. For example, in the reproductive and child health field, most people argue that immunizations of children protect not only the child who is immunized but other children as well, by stopping epidemics before they start. Similar arguments have been made for the externalities of family planning. By slowing population growth rates, the government can more easily make adjustments to the quantity and quality of social services. Similarly, labor markets adjust more easily in a regime of slower population growth rates. Government may decide to subsidize or provide services with large externalities to encourage people who might not otherwise avail of the services.
2. *Poverty alleviation.* Often segments of the population cannot afford unsubsidized private health care. If a government decides that a certain level of health is the right of everyone, the government may decide to provide a certain set of health services either free or at subsidized rates to poverty groups.
3. *Underserved areas.* Often population density or overall economic development of an area limits the degree to which the private sector can operate. If there is not a critical mass of “purchasing power” in a given area, the private sector for health will not develop. In these cases the government may need to provide services, however, they may choose to extract user fees from the wealthier segments of the population who live in these distant areas.

Thus, there is a proper and defensible role for the public sector in achieving the public health goals of society. Determining the exact nature of these roles is a difficult question. If we accept the framework above, the following questions are a reasonable first step toward determining these roles.

1. What services have high externalities?
2. What services does the government want to assure for poverty groups?
3. Are there certain areas of the state that need special attention for development goals to be achieved?

<sup>17</sup> Although we don't address the problem here, one of the conditions for perfect competition is many providers. We noted above that there is often a problem of insufficient numbers of medical providers or facilities. In such situations, quality may suffer and prices may be higher than normal.

## Analysis of Inputs for Reproductive and Child Health Care in Rajasthan's Public-Sector Facilities

Barun Kanjilal, Suneeta Sharma, Varuni Dayaratna, Gautam Chakraborty,

### 1. Introduction

During the period following the Alma Ata declaration, the Government of India (GOI) focused its efforts and funds on improving and expanding physical infrastructure in the public-sector health system. Until recently, however, the complementary inputs (medicines, supplies, staff, and equipment) that are required to deliver health services have received less attention. The Ministry of Health and Family Welfare in India is currently implementing a reproductive and child health (RCH) program in the country. The objective of this program is to improve the health of women and children by providing a broad range of RCH services through government health facilities at the primary, secondary, and tertiary levels. An important component of the program is strengthening government health infrastructure in terms of staff, equipment and supplies in order to provide effective, reliable RCH services.

This paper presents a facility-level analysis of the input necessary to deliver RCH services effectively in the State of Rajasthan using the results from two surveys conducted by the Indian Institute for Health Management Research (IIHMR). One was a facility survey of seven districts in Rajasthan and the other a time allocation study in the District of Udaipur. The surveys provide a comprehensive picture of input availability and use of provider time in government health facilities. Available inputs, namely medical staff, drugs, supplies, and equipment, are compared to service norms and standards both to assess their adequacy for delivering RCH services and to identify gaps.

### 2. Methodology

#### 2.1 The Facility Survey

The purpose of the facility survey was to obtain a picture of the supply side of RCH service delivery at the district level in Rajasthan. Specifically, the survey was designed to find the percentage of facilities that have adequate inputs as defined by government norms stipulated in the RCH program.

#### *Study Districts*

Seven districts representative of the major regions of Rajasthan (desert, plains, plateau; arid, non-arid; developed, under-developed; etc) were selected for the study. They included Udaipur, also the site of the time allocation study, Ajmer, Barmer, Bharatpur, Bikaner, Jaisalmer, and Jodhpur. The facility survey covered all public-sector health facilities in these districts; therefore, a general inference on the quantity and quality of critical input can be made with a fair degree of reliability. Table 1 presents selected characteristics of the seven districts.

The seven districts cover over a third of Rajasthan's land area and account for a quarter of the state's population. Their rankings with respect to health and human development indices vary greatly, with Bikaner in the top fifth and Bharatpur at the lower end of the spectrum. Other districts, such as Barmer, fare relatively well in the area of health but rank poorly with respect to human development.

#### **Survey Instruments**

Two types of questionnaires were used in the facility survey. One was for district hospitals (DHs), sub-district

**Table 1: Profile of Study Districts**

S. No.	Districts	Area* (sq. km)	Population* (millions)	Density* (persons per sq. km)	Health Development Index @ (Rank)	Human Development Index @ (Rank)
1.	Ajmer	8,481	1.7	203	22	11
2.	Barmer	28,387	1.4	50	10	29
3.	Bharatpur	5,066	1.6	325	29	20
4.	Bikaner	2,724	1.2	44	1	5
5.	Jaisalmer	38,401	0.3	9	5	17
6.	Jodhpur	22,850	2.1	93	5	10
7.	Udaipur	12,412	2.8	167	18	18
	Rajasthan	342,274	44.0	128	-	-

\* Source: District census reports, 1991

@ Source: Institute of Development Studies, Jaipur; 1999

hospitals (SDHs), community health centers (CHCs), first referral units (FRUs), and postpartum centers. The other was for primary health centers (PHCs)<sup>1</sup>. Both survey instruments included questions on the availability of relevant infrastructure; vehicles; telephones; electricity and water; staff and in-service training; cold chain equipment; contraceptives, vaccines and drugs; and various sorts of medical kits. In addition, the instrument for higher-level facilities included questions on the availability of test laboratories, on linkages with blood banks, and on the existence of separate outpatient departments (OPD) for reproductive tract/sexually transmitted infections (RTIs/STIs) and obstetrical/gynecological (OB/GYN) cases. The questionnaire also gathered detailed information on wards, clinics, operating theaters (OT) and equipment.

## 2.2 Time Allocation Study

The purpose of the study was to assess the amount of time that government providers devoted to the *actual delivery* of RCH services. The survey attempted to disaggregate the amount of time providers spent on

service delivery from the time they spent on “other activities”. Other activities in this case included responsibilities for parallel national health programs, administrative work, and idling. The two specific questions that this study sought to answer were the following: what percentage of medical and paramedical staff time is devoted to RCH service delivery, and is that percentage sufficient?

### Study Sample

The sample was limited to persons directly involved in providing RCH services at 18 primary and secondary level facilities in Udaipur. They included both medical and paramedical staff (specifically the nursing staff). Seventeen medical officers, including general practitioners and specialists, were interviewed. They constituted 12 percent of Udaipur’s medical staff. The sample size for paramedical staff was 27 and included auxiliary nurse midwives (ANM), lady health visitors (LHV), and staff nurses. This sample constituted 4 percent of the paramedical staff in the district.

<sup>1</sup> Data on the availability of drugs and supplies in subcenters (SCs) were available at the PHC level and, hence, was collected and included in the analysis under the PHC heading. However, due to time constraints, information about SCs that was not available at the PHC level – condition of building, availability of para-medical staff - was not collected separately for the facility survey.

**Table 2: Profile of Sample Facilities and Providers**

Type of Facility	Number of Facilities Covered	Medical Personnel Covered	Paramedical Staff Covered	Total Personnel Covered
Sub-center	9	-	9	9
PHC	4	4	5	9
CHC	2	4	4	8
SDH	2	6	6	12
DH	1	3	3	6
Total Sample	18	17	27	44
Percent of Universe	3	12	4	5

### Survey Instruments for the Time Allocation Study

The survey used two schedules, one for medical officers and one for paramedical staff. Both questionnaires asked respondents about time spent on various activities during the previous day and during the past year. The activities included clinical time spent on RCH and non-RCH cases, time spent at sterilization camps, and time spent on administrative activities such as training, meetings, supervisory field visits, management information systems, and reporting. In addition, the paramedical staff schedule collected information on how staff nurses, ANMs, and LHVs allocated their time among various activities during household visits.

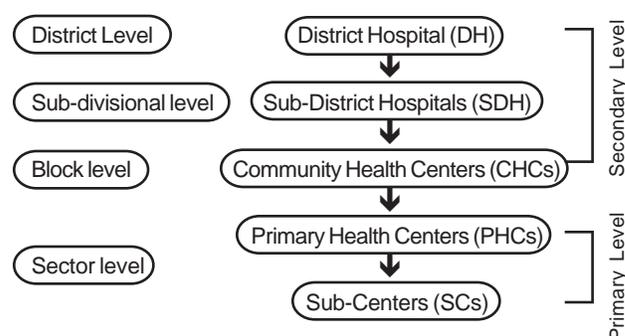
### 3. Service Norms

In a typical district, health facilities at both primary and secondary levels provide RCH services. The facility levels correspond to the administrative divisions of a district as shown in Figure 2.

A description of the critical input that these institutions must have in order to provide quality services is given below.

### 3. 1 Infrastructure

Table 3 presents information on the sort of infrastructure that is essential at primary- and secondary-level facilities. Both primary and secondary facilities must have water and electricity, the infrastructure necessary for normal deliveries, and means of transport and communication to execute timely transfers to higher-level facilities. At the PHC level, such basic infrastructure facilitates the delivery of both preventive and curative health care and allows for the use of the referral system in case of complications and emergencies. Secondary-level facilities that are charged with delivering specialized care and with handling complicated cases require additional infrastructure: a separate OPD for OB/GYN and RTI/STI patients; an OT for OB/GYN patients; linkages with blood banks; and separate beds for OB/GYN and pediatric cases.

**Fig. 2 Public Health Care**

**Table 3: Essential Facilities at Secondary-level Facilities and Primary Health Centers**

Infrastructure (input)	Essential At:	
	Primary Level (PHC)	Secondary Level (DH, SDH, CHC)
Continuous water supply	3	3
Electricity in all parts of the hospital	3	3
Separate septic labor room	3	3
Generator	3	3
Telephone	3	3
Vehicle on road	3	3
Beds for OB/GYN patients	3	3
Beds for pediatric patients	-	3
Separate OPD for OB/GYN	-	3
Separate OPD for RTI/ STI	-	3
OT used for OB/GYN	-	3
Linkage with blood bank	-	3

Note: 3 A critical input at the facility level; - not critical at this level.

### 3.2 Medical Staff

In order to provide specialized RCH services, secondary facilities are required to have at least one specialist each in the areas of obstetrics and gynecology, paediatrics, and anesthesiology in addition to the staff required at the PHC.

**Table 4: Essential Medical and Paramedical Staff at PHC and Secondary-level Facilities**

Essential Medical and Paramedical Staff	Essential At:	
	Primary Level (PHC)	Secondary Level (DH, SDH, CHC)
General practitioner	3	-
Lab technician	3	3
Nurse/ LHV/ ANM	3	3
Gynecologist/ Obstetrician	-	3
Anesthetist	-	3
Pediatrician	-	3

Note: 3 A critical input at the facility level; - not critical at this level.

### 3.3 Equipment

Cold chain equipment for the storage of vaccines and drugs is essential at both primary- and secondary-level facilities. Blood pressure instruments, an autoclave, a suction apparatus to medically terminate pregnancies (MTP), and labor room equipment are critical at the primary level. Although not considered critical, these basic instruments are usually supplied to secondary facilities as well. As in the case of infrastructure and staff, equipment requirements at the secondary level are geared towards addressing emergencies and specialized cases.

**Table 5: Essential Equipment at Secondary-level Facilities and PHCs**

Essential Equipment	Essential At:	
	Primary Level (PHC)	Secondary Level (DH, SDH, CHC)
Cold chain equipment	3	3
BP Instrument (*)	3	-
Autoclave (*)	3	-
MTP suction apparatus (*)	3	-
Labor room equipment (*)	3	-
Boyles apparatus	-	3
Oxygen cylinders	-	3
Shadow-free lamp	-	3

Note: 3 A critical input at this facility level; - not critical at this level.

(\*) Per government norms, these inputs are not considered critical at the secondary level because functions related to them are supposed to be addressed at the primary level; however, they are often supplied and available anyway.

### 3.4 Drugs and Supplies

Essential drugs and supplies fall into three categories; contraceptives, vaccines, and drugs and drug/equipment kits. Secondary facilities are required to have tubal rings, drugs and kits like standard surgical sets (all the sets) for obstetric cases, labor room kits, RTI/ STI lab equipment, and equipment to care for newborns. The PHCs are supposed to have oral pills, condoms, important vaccines (e.g., measles vaccines), iron supplements (IFA tablets), oral rehydration salts (ORS) packets and essential drugs (e.g., for obstetric cases). Essential kits for PHCs include labor room kits and IUD insertion kits.

**Table 6: Essential Drugs and Supplies at Primary- and Secondary-level Facilities**

Essential Equipment	Essential At:	
	Primary Level (PHC)	Secondary Level (DH, SDH, CHC)
<b>Contraceptives</b>		
Tubal rings	-	3
Oral pills	3	-
Condoms	3	-
<b>Vaccines and Drugs</b>		
1. Obstetric care drugs	3	3
2. Measles vaccines	3	-
3. IFA tablets	3	-
4. ORS packets	3	-
<b>Drug/Equipment Kits</b>		
Standard surgical kits	-	3 (x)
RTI/STI lab equipment kits	-	3(x)
Newborn care kits	-	3(x)
Labor room kit	3	3(x)
IUD insertion kit	3	-

Note: 3 A critical input at this facility level; - not required at this level.

(x) The equipment contained in the kits is considered critical to all facilities at the secondary level; however, it is supplied in kit form to only CHCs because the higher level facilities stock the equipment as individual items.

## 4. Availability of Inputs

In this section, the results from the IIHMR facility survey are used to assess the availability of infrastructure, staff, drugs and supplies, and equipment at primary- and secondary-level health facilities in seven districts of Rajasthan. As the following discussion reveals, the inputs required to provide good quality RCH services were not available in many facilities.

### 4.1 Infrastructure

Table 7 presents information on the availability of essential infrastructure in institutions across all levels. The shaded cells represent critical inputs that were available in only 50 percent or fewer facilities of a given type.

With the exception of OPDs for RTIs/STIs, most district and subdistrict hospitals had the essential infrastructure. That was not the case at CHCs, FRUs, and PHCs. Only

50 percent of the PHCs surveyed had labor rooms. This leaves clients with little choice but to bypass these facilities and go directly up the referral chain to FRUs and DHs/SDHs where labor rooms are available thus increasing the load on these facilities. Alternatively, clients may abandon the government health system and go to private providers such as *dais* (traditional birth attendants) or private doctors. Patients with RTIs/STIs face a worse situation. Only 2 percent of CHCs and 50 percent of DHs/SDHs had outpatient departments for RTIs/STIs. This infrastructure gap in government facilities implies that many potential public sector users may be compelled to seek treatment elsewhere.

At the primary level, only 57 and 69 percent of facilities respectively had both a continuous water supply and electricity. The absence of one or both of these basic, essential inputs in 40 percent of PHCs is a serious obstacle to the provision of responsible care.

Communication and transport are critical elements in referring emergency cases such as complicated pregnancies from lower to higher level facilities, but less than 10 percent of primary-level facilities had telephones or vehicles. The lack of infrastructure necessary to communicate with other facilities and to transport critical patients is a clear indication of a referral system that does not function.

### 4.2 Staff

Table 8 reports on the availability of medical and paramedical staff in health institutions across all levels. Only one-fifth of the CHCs and FRUs had OB/GYN specialists, less than one-fourth had a specialist in pediatrics, and an anesthetist was available in only 7 percent them. The absence of specialists in over 75 percent of FRUs compromises the ability of these institutions to provide specialized care and creates a weak link in the referral chain.

Less than 50 percent of PHCs and CHCs had paramedical staff such as nurses, ANMs, and LHVs. This implies the following: (1) women seeking reproductive health care do not have the option of consulting a female practitioner and hence may opt to avoid these facilities; (2) the outreach program is

**Table 7: Institutions with Critical Infrastructure (in percentages)**

Type of Facility	DH/SDH	CHC/FRU	PHC
<b>Total Number of Facilities (N)</b>	<b>(4)</b>	<b>(45)</b>	<b>(261)</b>
Water (continuous)	100	75	57
Electricity (in all parts)	100	100	69
Labor room	75	65	50
Generator	75	40	17
Telephone	100	58	7
Vehicle (on road)	100	62	8
OPD (OB/GYN)	100	25	100
Beds (OB/GYN)	100	77	86
Beds (Pediatric)	100	45	-
OPD (RTI/STI)	50	2	-
OT (for OB/GYN)	100	91	-
Linkage with blood bank	100	4	-

Note: - not critical at that level

inadequate since paramedical staff are responsible for the bulk of field visits to remote areas; and (3) there is a greater burden on doctors who are called upon to perform the duties of paramedical staff. It is also important to note that the cost to the health system is great when doctors with relatively higher salaries perform the duties of their lower-salaried counterparts<sup>2</sup>.

**Table 8: Institutions With at Least One Staff Member in the Department of Gynecology (in percentages)**

Type of Service Provider	DH/SDH	CHC/FRU	PHC
<b>Total Number of Facilities (N)</b>	<b>(4)</b>	<b>(45)</b>	<b>(261)</b>
Gynecologist/ Obstetrician	100	20	-
Anesthetist	50	7	-
Pediatrician	25	26	-
General practitioner	-	-	80
Lab technician	100	73	65
Nurse/ LHV/ ANM	75	48	30

Note: - not critical at that level.

### 4.3 Equipment

It was encouraging to find that all district and sub-district hospitals possessed the required equipment; however, over 25 percent of CHCs lacked the Boyles apparatus and oxygen cylinders. This greatly inhibits the proper functioning of operating theatres and thereby hampers the management of complicated cases at these facilities.

In a well run health care system, primary-level health facilities provide preventive care such as immunizations. Unfortunately, the PHCs in the study districts of Rajasthan were poorly equipped to perform this function as over 40 percent of these facilities did not have the cold chain equipment essential for vaccine storage. This raises serious doubts about the effectiveness of immunizations in the periphery.

**Table 9: Institutions Having Equipment (in percentages)**

Type of Service Provider	DH/SDH	CHC	PHC
<b>Total Number of Facilities (N)</b>	<b>(4)</b>	<b>(45)</b>	<b>(261)</b>
Boyles apparatus	100	68	-
Oxygen cylinders	100	73	-
Shadow-free lamp	100	82	-
Cold chain equipment	100	93	59
BP instrument	-	-	76
Autoclave	-	-	52
MTP suction apparatus	-	-	20
Labor room equipment	-	-	57

Note: - Not critical at this level. Although blood pressure instruments, autoclaves, an MTP suction apparatus, and labor room equipment are not critical (per government norms) to secondary-level facilities, they are supplied to and available at most DH/SDHs and CHCs.

### 4.4 Drugs and Supplies

None of the district and sub-district hospitals had either the contraceptives (tubal rings) or obstetrical drugs deemed critical at that level. At the CHC level, tubal rings, OB drugs, RTI/STI lab equipment, and newborn kits were available in less than one-fourth of the facilities. The gross lack of essential drugs and supplies brings

<sup>2</sup> In addition to the availability of health personnel, their skill levels (training) and attitudes towards clients are important for the delivery of high quality services. A discussion of these two factors is not included for the following reasons. Information on service-provider attitude requires feedback from clients, and this was beyond the scope of this study. The surveys did collect information about in-service training received by providers in the past twelve months, but the responses do not reflect a service provider's over-all skill level so have been omitted from this analysis.

to question, once again, the capacity of secondary facilities to serve as higher-level referral links and to address the needs of specialized and critical cases.

PHCs were relatively well stocked with oral contraceptives, ORS packets, and drug/equipment kits; however, condoms, OB drugs, measles vaccines, and IFA tablets were not as available.

**Table 10: Institutions Having Drugs and Supplies (in percentages)**

Drugs and Supplies	DH/SDH	CHC	PHC
<b>Total Number of Facilities (N)</b>	<b>(4)</b>	<b>(45)</b>	<b>(261)</b>
Contraceptives			
Tubal rings	0	13	-
Oral pills	-	-	84
Condoms	-	-	33
Vaccines and Drugs			
OB drugs	0	13	21
Measles	-	-	49
IFA tablets	-	-	20
ORS packets	-	-	72
Drug/ Equipment kits			
Standard surgical kits	(x)	46	-
RTI/ STI lab equipment kits	(x)	7	-
Newborn care equipment kits	(x)	22	-
Labor room kits	(x)	93	80
IUD insertion kits	-	-	82

Note: – not critical at this level. Oral contraceptives, condoms, measles vaccines, IFA tablets, and ORS packets are not critical (per government norms) at secondary-level facilities because related services should be provided at Lower-level facilities. However, they are generally supplied to and available at most DH/SDH and CHCs.

(x) None of the DHs/SDHs and CHCs has equipment kits. Equipment in the form of kits is supplied to only CHCs and PHCs. The higher-level facilities usually have the relevant equipment stocked as individual items.

## Use of Provider Time

The time allocation study conducted in the District of Udaipur aimed to calculate the actual time spent by medical and paramedical staff on RCH, non-RCH, and administrative activities. The results are summarized below. Health care facilities in Rajasthan are understaffed. In such a situation, the optimal utilization of existing human resources becomes all the more

important. Information on staff availability coupled with an analysis of how they allocate their time can contribute greatly to identifying the magnitude of human resource shortfalls and the inefficiencies in RCH service provision. Although the duties and responsibilities of medical and paramedical staff are explicit, the time that they are required to devote to specified activities is not. Furthermore, no time-motion studies have been done to establish standards; hence, there are no norms to serve as guidelines or monitoring tools.

### 5.1 Time Allocation for Medical Staff

Medical staff consists of medical officers (MOs) at the PHC level and both MOs and junior/ senior specialists (JSs/SSs) at the CHC and hospital levels. Table 11 presents information on how these medical personnel distributed their time on RCH and other activities.

**Table 11: Time Spent by Doctors at Different Levels on RCH and Other Activities (in percentages)**

Activity Type	Type of Health Facility			
	Total	PHC	CHC	Hospitals
Number	20	4	6	10
<b>Time Spent in a Typical Year (%)</b>				
RCH	37	23	28	59
Other health	30	38	38	13
Administrative	33	39	34	28
Total	100	100	100	100

In a typical year, doctors spent on average 37 percent of their time on RCH services, 30 percent on non-RCH services, and 33 percent on administrative activities. These distributions vary widely by level of health facility. For example, doctors at hospitals spent at least twice as much time on RCH service provision as did their counterparts at CHCs and PHCs. This is because the gynecology and pediatric departments in hospitals assign their doctors exclusively to RCH activities, though it is important to note that even these specialists spent less than 60 percent of their time on them.

In addition to their RCH activities, doctors at PHCs and CHCs have specific responsibilities that pertain to non-RCH national health programs and also to administrative

work. As a result, they devoted less than 30 percent of their working hours to the provision of RCH services and spent the bulk of their time (over 60 percent) on non-RCH activities and administrative work.

## 5.2 Time Allocation of Paramedical Staff

Paramedical staff consists of ANMs at the sub-center level; staff nurses and ANMs at the PHC level; multipurpose workers (MPWs), LHVs, and ANMs at the CHC level; and staff nurses, LHVs, ANMs and MPWs at the hospital level.

Paramedical staff members at all levels devoted a much larger proportion of their typical work year to the provision of RCH services than did medical staff. In a typical year, these health workers spent 63 percent of their time on RCH activities (see Table 12). Workers in hospitals spent the most time (76%) while those in the CHCs spent the least (53%). Hospital health workers spent the least time on administrative activities (6%) and those in PHCs spent the most (29%). Workers in PHCs spent less than 10 percent of their time on other health activities in contrast to the 20 percent spent by their counterparts at other levels.

The IIHMR also used data from the time allocation study to estimate the distribution of health workers' time across specific RCH and non-RCH interventions during clinic and field visits. The results are presented in Table A1 in Appendix A.

### *Actual Time Spent vs. Perceived Required Time*

In the absence of standards or norms, it is difficult to judge the adequacy of the time spent on RCH activities.

In spite of this limitation, the study attempted to arrive at a crude standard. Doctors were asked to give their opinions about the amount of time they thought they should devote to RCH activities. This was then compared with the amount of time they thought they were currently devoting. A perceptual gap between required and actual time spent on RCH activities was thus estimated. This analysis revealed that doctors in hospitals believed that they were devoting 64 percent of their time to RCH care and deemed that sufficient. On the other hand, doctors in PHCs believed they were devoting insufficient time to RCH services and wanted it to increase approximately fourfold. Doctors at the CHCs wanted a slight increase.

## 5.3 Implications of the Direct Observation Study

In order to verify the results of the time allocation study, the IIHMR observed how a small number of medical and paramedical staff members devoted their time to various activities. It was not a scientific, time-motion study but was rather a direct, general observation. In keeping with the time allocation study findings, results showed that hospital-level doctors devoted more time to RCH-related cases than did their counterparts in lower-level institutions. They tended to refer non-RCH cases to other doctors after initial examination. Doctors at the periphery spent more time on non-RCH activities and administrative work. Overall, however, doctors and paramedical staff at all levels had very little client contact time; in fact, they generally spent less than five minutes with each patient. This brings into question the quality of care and counseling that clients receive at public-sector facilities.

Paramedical staff at all levels spent more time on administrative activities than did doctors. The bulk of

**Table 12: Time Spent by Health Workers on RCH and Other Activities**

Activity type	Type of Health Facility				
	Total	SC	PHC	CHC	Hospitals
Number	27	9	5	4	9
Time spent in a typical year (%)					
RCH	63	60	62	53	76
Other health	18	24	9	22	18
Administrative	19	17	29	25	6
Total	100	100	100	100	100

the administrative work in hospitals consisted of preparing reports while at other facilities most of the time was spent meeting informally with local people. The hospital health worker spent considerably more time on RCH activities than did her counterparts in peripheral facilities.

A revealing finding of the observation study was the pervasiveness of idle time among doctors and health workers at both hospitals and peripheral facilities. Slack time constituted between 40 and 80 percent of the observed staff members' workdays which implies that there is a large amount of excess capacity at the health facilities studied.

Four cases from the study are summarized below.

### Case 1

#### **Doctor (hospital)**

Junior specialist in gynecology at a sub-district hospital:

The JS (a lady doctor) spent a total of five hours in the hospital covering both the morning and evening shifts. This included three hours of idle time awaiting patients and 45 minutes of administrative work. The administrative work consisted of 40 minutes of paper work and five minutes in meetings. During her clinical time, the JS spent one hour on RCH activities. The break-up of RCH cases included 23 minutes on antenatal care (ANC) (six cases), 12 minutes on RTI cases (three cases), five minutes on child health (one case) and ten minutes on family planning (two cases). Apart from these, she also spent five minutes on other health cases (two cases). Both these cases were referred to concerned specialists/doctors after a preliminary examination.

### Case 2

#### **Doctor (periphery)**

Medical officer (MO) at a primary health center:

All the activities performed by the MO were confined to the morning shift. He was totally idle in the evening shift. The explanation for this, as given by the MO, was that the patients were still not aware of the recent change in hours so were following the old schedule of 10 AM to

5 PM. The MO spent three-and-a-half idle hours awaiting patients; this includes the whole evening shift of one-and-a-half hours. He also spent 40 minutes on administrative work which consisted of five minutes of paper work and 35 minutes in meetings. Of the time spent on clinical activities, 15 minutes were spent on RCH cases (five child health cases) and 35 minutes on other health cases (eight cases). The other health cases were mostly TB and malaria. It was observed that most of the RCH cases like antenatal care, delivery, RTI, and family planning were handled by the LHV and were referred to the MO only in case of severe complications.

### Case 3

#### **Health Worker (hospital)**

Lady health visitor at a district hospital:

The LHV is attached to the gynecology department at the district hospital in Rajsamand and is chiefly responsible for RCH cases. Her working day covers a total of five-and-a-half hours in two shifts (8:00 to 12:00 and 17:30 to 19:00). Of the total time, the LHV devoted three hours and fifteen minutes to administrative and other activities including two hours and forty-five minutes of idle time. The administrative activities included an hour and forty-five minutes of paper and other related work and an hour of meetings. The LHV devoted two hours and thirty-five minutes to RCH cases which included two hours on ANC cases (16 cases), 30 minutes on child health and immunization (13 cases) and five minutes on family planning (three cases).

### Case 4

#### **Health Worker (periphery)**

Auxiliary nurse midwife at a sub-center:

The ANM spent a total of seven hours in the village sub-center of which three hours were idle time and two hours were spent on administrative work. Of the time spent on administrative work, 30 minutes were spent on paper work, and one-and-a-half hours were meetings with the local community leaders. In the remaining two hours, the ANM devoted only 30 minutes to RCH cases (one child health case) and one-and-a-half hours to other

health cases (nine cases). Most of the other health cases were boils or minor injuries.

## 6. Key Issues

### 6.1 Lack of Critical Inputs

Shortages of and the poor quality of drugs, supplies, staff, infrastructure, and/or equipment cause operational deficiencies at government health facilities at all levels. These deficiencies seriously call into question the government's ability to deliver affordable RCH services of an acceptable quality. The lack of essential inputs cripples the system as a whole and in particular affects the poor. The lack of medicines in government facilities, for example, renders them unaffordable to families with low incomes. Furthermore, the lack of critical inputs negatively affects the image of government health facilities which works against attracting potential clients.

### 6.2 A Weak Referral System

A large proportion of RCH users in Rajasthan bypasses lower-level health facilities and goes directly to hospitals (Hotchkiss et. al., 2000). This is a sign of a dysfunctional referral system. The lack of essential resources in PHCs, CHCs, and FRUs is one of the primary contributing factors to this weak referral system. PHCs that lack uninterrupted water supplies, vaccines, and staff are ill equipped to serve as first points of contact in the referral chain. Similarly, large numbers of CHCs/FRUs do not have the specialists, special wards, equipment, and drugs necessary to function as mid-level providers of specialized and emergency care. The lack of labor rooms at half the PHCs sends patients up the referral chain, but then 25-35 percent of CHC and DH facilities also do not offer this basic service. This implies that a substantial number of clients are being inadvertently directed to tertiary care facilities, or alternatively, to qualified and traditional private practitioners.

Communication and transport are critical elements in referring emergency cases. The inability to communicate quickly with other facilities and to transport critical patients to higher-level institutions is a clear indication of a referral system that does not function. In the study districts, less than 10 percent of primary facilities had

telephones or vehicles. Their absence renders the referral system inoperable.

### 6.3 Under-utilization and Poor Allocation of Available Capacity

#### • *Idle Time Among Health Practitioners*

Health practitioners, both medical and paramedical, spend 20 to 60 percent of their time providing RCH and non-RCH services and doing administrative work; the remainder of the workday constitutes slack time. There may be a number of reasons for this phenomenon. Among them are lack of incentives, the existence of countervailing incentives, and lack of demand for public-sector services at the secondary level.

*Lack of incentives:* Salaries and promotions of public health providers are based on seniority with little attention paid to performance and productivity. Hence, there are no monetary or professional incentives for health practitioners to see more patients or to spend more time with the patients they do see.

*Existence of countervailing incentives:* Many public sector doctors engage in private practice after regular working hours. This further reduces their incentive to serve a maximum number of patients at public facilities.

*Lack of demand for public sector services at lower-level facilities:* The lack of critical inputs such as drugs, equipment and skilled staff plus minimal client contact time may contribute to the low demand for government health services at these facilities. As a result, health practitioners spend a large portion of their workday waiting for clients who often fail to appear.

#### • *Inefficient Use of Staff Time*

*Allocation of time between patient care and administrative work:* Doctors at PHCs and CHCs spent a third of their time on administrative work; they devoted less time to RCH activities. Similarly, paramedical staff members in PHCs and CHCs spent significant proportions of their time on paperwork and meetings. The wisdom of medical and paramedical staff devoting large quantities of time to informal meetings, data collection, and reporting is questionable, especially when it comes at the expense of patient care.

*Imbalance in human resources:* More than 50 percent of PHCs and CHCs lacked paramedical staff. This implies there is a greater burden on doctors who are called upon to perform the duties of nurses and ANMs. This in turn affects the quality of care provided by doctors, and it increases service costs.

*Lack of complementary resources:* Often, the medicines, equipment, and infrastructure necessary for a doctor or nurse to serve RCH clients were not available in government health facilities. This greatly reduces the productivity and effectiveness of service providers and of the health system as a whole.

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## Appendix A

### The Time Allocation of Paramedical Staff across RCH and non-RCH Interventions

Table A1 shows the distribution of workers' time in clinics and in the field. In clinics, most of their time was spent on child health/ immunization (18%), closely followed by antenatal care and family planning (14%). During field visits, on the other hand, maximum time was devoted to family planning (24%) followed by child care/ immunization (20%). Time spent on minor ailments during field visits was less than 10 percent but in clinics, it was 13 per cent with sub-center and CHC staff spending 20 percent of their time on it. It was also found that CHC staff members did not spend any time on other national health programs during clinic hours. In the table, the total time in clinics is not 100 percent as the remainder was devoted to administrative activities.

**Table A1: Time Allocation of Paramedical Staff during Clinic and Household (Field) Visits (in percentages)**

Type of Activity	Type of Facility				
	Total	SC	PHC	CHC	Hospital
Number	27	9	5	4	9
Clinic time (%):					
ANC	14	13	12	9	22
Postnatal care (PNC)	5	6	6	4	5
Child/ Immunization	17	15	8	32	16
Family planning	14	17	20	5	16
Minor ailments	13	20	7	20	3
National health prog.	7	10	6	0	13
Others	5	9	1	6	2
Total	75	89	60	75	78
Household (field) visits (%):					
ANC	17	15	14	17	21
PNC	13	11	12	11	19
Child/ Immunization	20	16	12	26	27
Family planning	23	22	41	17	14
Minor ailments	7	5	7	10	5
National health prog.	11	16	7	10	9
Others	9	13	8	11	6
Total	100	100	100	100	100

## Health Financing: Cost Recovery Policies in Rajasthan<sup>1</sup>

Ram Lubhaya

### 1. Introduction

To achieve the goal of “Health for All,” the Government of Rajasthan rapidly expanded health infrastructure during the last four decades. More and more resources were committed to satisfying popular demand for new institutions, but the budget for non-salary recurrent costs remained static at 8-10 percent of the total. This led to poor quality services in public health facilities. Machines were not properly maintained so were often idle, and hospital functions were adversely affected by poor maintenance of buildings, operating theaters, and equipment. Dwindling government revenues exacerbated the situation. When funds were available, rigid rules and centralized allocations led to inordinate delays in attending to even urgent matters.

Inadequate investment in facilities leads not only to poor quality care but also to an inefficient health system. As a result of inadequate resource allocation, the state’s health facilities faced operational deficiencies including insufficient funds for consumables, shortages of diagnostic facilities and laboratory equipment, and a general deterioration of the physical infrastructure (World Bank, 1997). Though funds were scarce, the state nonetheless was responsible for providing basic medical care to all its citizens. To meet increasing health needs and costs, additional resources had to be mobilized.

### 2. Prior Cost Recovery Initiatives

The Government of Rajasthan introduced two schemes in the 1980s in government hospitals as initial steps

towards cost recovery and cost sharing: “pay clinics” and “auto finance.” Both were designed to partially recover costs as full cost recovery at public health facilities was deemed to be neither feasible nor desirable. In “pay clinics,” specialist doctors in medical colleges were allowed to offer consultation services after working hours for fixed fees. A portion of what they earned was to be deposited in the government exchequer. The public by and large welcomed the scheme, but it was withdrawn due to a lack of participation by doctors. “Auto finance” was introduced in 1982 to charge nominal fees for diagnostic tests, mainly X-rays. Resulting revenues were to be deposited, and institutions were then allotted budgets for consumables based on their earnings.

The schemes did not offer any incentives to hospitals to make them successful and did not generate significant revenues. What was notable about them was that there was no public opposition to either one. That provided a clear signal to the government: people were not averse to user fees for health services. The state government then looked to beneficiaries and non-governmental organizations to generate resources for public facilities.

### 3. Medicare Relief Societies

In 1995, the Government of Rajasthan decided to establish Medicare Relief Societies (MRS) in each tertiary- and secondary-level hospital with 100 beds or more. The societies are autonomous bodies registered under section 20 of the Rajasthan Societies Act. The purpose was twofold: (a) to complement and supplement

<sup>1</sup> Unless otherwise indicated, the information and data contained in this paper come from the following source: IIHMR. 1999. “Cost Recovery and Sustainability,” in *Health Systems Development Project Rajasthan: Project Proposal* Jaipur, India: IIHMR.

the existing health facility through additional revenue generation; and (b) to retain and use the resources generated in the hospital through decentralized decision-making. In order to achieve the stated objectives, the societies had to do the following:

- provide diagnostic and treatment services at cost (the price should not exceed 50% of the market price);
- provide free medical services to families below the poverty line, to widows, to the destitute, to freedom fighters, to orphans, to prisoners, to citizens over 70 years old and to emergency patients;
- obtain donations from financial institutions, individuals, industries, trade associations, and other similar sources;
- provide measures to conserve resources like “adopting” wards and opening life line fluid stores (LLFS);
- arrange facilities like *Ran Baseras*<sup>2</sup>, *Sulabh*<sup>3</sup> complex, and provide maintenance and sanitation for hospital buildings.

It is also stated as an objective of the societies that no profit is intended from any of the above activities. At present, 72 medicare relief societies are functioning in the state.

### 3.1 Management Structure

A management committee comprised of official and non-official members is empowered to decide on the use of funds without referring to the government. This independence and autonomy helps expedite local decision-making. The following is the management structure in Jaipur and at the regional and district levels:

#### (A) Jaipur

1. Secretary, Medical and Health  
*Chairman*
2. Divisional Commissioner  
*Vice Chairman*

3. District Collector  
*Member*
4. Principal, Medical College  
*Member*
5. Head of Department  
*2 Members*
6. Director Medical and Health Services  
*Member*
7. Superintendent, Medical College  
*Member Secretary*
8. Doctors (nominated by government)  
*2 Members*
9. *Local MLA*<sup>4</sup> (nominated by government)  
*Members*

#### (B) Regional Level

1. Divisional Commissioner  
*Chairman*
2. District Collector  
*Vice Chairman*
3. Principal, Medical College  
*Member*
4. Superintendent, Medical College  
*Member Secretary*
5. Joint Director, Medical and Health  
*Member*
6. Doctors (nominated by government)  
*2 Members*
7. Head of Department  
*2 Members*
8. *Local MLA* (nominated by government)  
*Member*

#### (C) District Level

1. Collector/ District Magistrate  
*Chairman*
2. Additional Collector (Development)  
*Vice Chairman*
3. Principal Medical Officer  
*Member Secretary*
4. Chief Medical and Health Officer  
*Member*

<sup>2</sup> Guest quarters where visitors can stay.

<sup>3</sup> Bathroom facilities.

<sup>4</sup> Member of Legislative Assembly (MLA)

5. Doctors  
*2 Members*
6. Senior Specialist  
*2 Members*
7. Local MLA  
*Member*

The executive committee of the society makes important financial decisions, as secretaries of the committee who are chief executives of the hospital are authorised to incur expenditures up to the limits the committee specifies. In short, the societies enjoy full autonomy in the management and utilization of funds.

### 3.2 Sources of Funding

The societies have multiple sources of funds including user fees, the sale of drugs through life line fluid stores, the adoption of wards, private donations, and matching grants. In 1997-98, the societies generated Rs. 123 million through various schemes such as those described below.

- Provision of Rs. 39.95 million as seed money by the state government to societies in medical colleges (Rs. 8.75 million), district hospitals with more than 300 beds (Rs. 21.75 million) and other hospitals with more than 100 beds (Rs. 9.95 million).
- The transfer of operational control over diagnostic machines to the societies. They could then charge a fee for use not to exceed 50% of the market price.
- The retention of income from the auction of cycle stands, from canteens, from paid wards (cottage wards), from auditorium rental, and from various other fund raising events.
- Receipt of grants and donations from public and institutions.
- Receipt of loans from financial institutions.

**Table 1: Schemes Adopted by Societies**

	User Charges	Life Line Fluid Stores	Adoption of Wards	Govt. Seed money	Donations
<b>Percentage of Societies Have:</b>	100%	60%	36%	95%	28%

### Life Line Fluid Stores (LLFS)

Sixty percent of the societies established LLFS to provide monetary relief to patients by providing quality drugs and surgical items at affordable prices. These stores sell items that are exorbitantly expensive in the open market on a cost-plus basis by adding a small margin as a service charge. For example, a standard bottle of intravenous 5% glucose saline would sell on the open market for Rs. 29.65 plus tax. The same bottle was procured for Rs. 6.95 by an LLFS and sold for Rs. 10. Similarly, a large number of drugs are sold at the LLFS at well below market prices. The LLFS at Sawai Man Singh (SMS) Hospital, Jaipur thus provided monetary relief of Rs. 8.5 million to patients and earned a surplus of Rs. 0.6 million according to a study conducted by Indian Institute for Health Management Research (IIHMR). In addition, competition from the LLFS has brought open market prices down.

### Cost Recovery through User Charges

Cost recovery in Rajasthan on average is 10-15% of a hospital's budget although it varies from 4 % to 25%.

**Table 2: Percentage of Cost Recovery**

District	Facility	Cost Recovery
Ajmer	J.L.N. Hospital	8.0%
	General Hospital, Nasirabad	11.0%
	A.K. Hospital, Beawar	17.0%
Bharatpur	General Hospital	9.0%
Baran	Government Hospital	10.0%
Bundi	General Hospital	14.0%
Churu	Government SRB Hospital	8.8%
	CHC, Sujangarh	7.0%
Jodhpur	Mahatma Gandhi Hospital	6.0%
Jaipur	SMS Hospital	25.9%
	Janana Hospital	8.6%
	Chest and TB Hospital	3.8%
	Rukmani Devi Jaipuria Hospital	12.4%
Jalore	General Hospital	25.0%
Kota	MBS Hospital	20.8%
Nagaur	Government Hospital	15.3%
	Government Hospital, Deedwana	23.0%
Pali	Bangad Hospital	21.7%

Cost recovery is high when there are multiple sources of supplementary financing and when the charges levied are judicious. Although societies have complete autonomy when setting fees, again, charges in government hospitals should not, by mandate, exceed 50% of the market rate. When setting fees, most of the societies take into consideration depreciation, running costs, maintenance and costs of upgrading of equipment as well as the cost of consumables including those provided free of charge. Some societies, however, fix charges on the basis of market rates alone.

Nominal fees are charged for outpatient and inpatient registration. In most hospitals, registration fees for outpatients are Rs. 2, and for inpatients Rs. 5. Patients referred to hospitals by private practitioners (IPD ticket patients) pay Rs. 10. Some hospitals have also introduced visitors' fees of Rs. 2 in order to minimize overcrowding. Beds in general wards are free, but charges from Rs. 12 to Rs. 250 are levied for cabins, cubicles and deluxe wards.

Charges for diagnostic tests, inpatient beds, and surgery are fixed between one-third and one-half of the market rate. The following table indicates that the services in government hospitals are still very reasonable when compared to those in the private sector.

**Table 3: Charges for Different Services**

Department	Fee in SMS Hospital (Rs.)	Market rate (Rs.)
Audiometry	40	100
CT Scan:		
Plain	700	1200-2000
Whole body	1200	2500
Coronary angiography	100	7500
ECG	150	450
Gastroscopy		
Routine gastroscopy	150	600
Therapeutic Gastroscopy	200	600-1000
Colonoscopy	300	1000-1500
Colonoscopy Polypectomy	500	2000-2500
E.R.C.P.	500	3000-3500
X-Ray		
Routine X-ray	50	110
Dental X-ray	20	60

### 3.3 System of Exemptions

As mentioned previously, the societies carry a mandate to provide free services to families living below the poverty line, to widows, to freedom fighters, to the destitute and to citizens over 70 years. The government has issued all families living below the poverty line medicare relief cards that entitle them to free treatment. Freedom fighters also carry identity cards. For other categories, means testing is informal and discretionary. An average of 15-20% of hospital clientele receives free care.

### 3.4 Use of Funds

Funds collected by the societies are used mainly for the purchase of new equipment, for repair and maintenance, for consumables, for contractual services for maintenance and cleaning, and for drugs and medicine. Societies decide how to use funds and develop their own transparent, flexible purchasing procedures.

Approximately Rs. 123 million were generated in 1998 from different sources, principally investigations and matching grants from the government. A major portion was spent on the purchase of equipment and consumables. Table 4 indicates the sources of revenue and the expenditure patterns of societies during 1997-98.

### 3.5 Share of the Potential Impact

Medicare Relief Societies have had a positive impact both on quality and utilization of services. They have brought adequate relief to poor patients and have also helped conserve resources. The funds generated by user fees have helped the hospitals to increase capacity for diagnostic tests through the purchase of new machines and have provided them with adequate and timely supplies of consumables. Hospitals now make better use of their equipment as there is the built-in incentive of earning funds that can be spent autonomously.

#### *Perception of Stakeholders*

According to member secretaries of the societies, 73% of users had a positive perception of the MRS while 22% were indifferent. The impact of the societies on improvement of services was perceived as significant by 74% of doctors; 26% found it insignificant. Sixty

**Table 4: Revenue and Expenditures of MRS in Rajasthan, 1997-98**

	Revenue/ Expenditures	Share of the Total (%)
<b>Revenue</b>		
1.	Seed money from government	13.38
2.	Donations	4.46
3.	Investigations	49.13
4.	Outpatient and IPD ticket patients	9.36
5.	Income from private wards, auditorium	3.59
6.	Matching grants	10.58
7.	Loans from financial institutions	0.00
8.	Other sources	9.50
	<b>Total</b>	<b>Rs. 123,427,814</b>
<b>Expenditure</b>		
1.	Purchase of equipment	38.30
2.	Purchase of consumables/supplies	37.90
3.	Maintenance/repair	3.70
4.	Office establishment	1.86
5.	Other	18.24
	<b>Total</b>	<b>Rs. 85,445,848</b>
	<b>Surplus</b>	<b>Rs. 37,981,966</b>

percent of the member secretaries said the societies offered considerable scope for improvement in health care; only 7% did not perceive the possibility of such improvement. Doctors were aware of RMRS in 85% of hospitals, and 88% of them actively co-operated with the societies. Also, a majority of doctors reported interest in RMRS.

### Impact on Utilization of Services

The introduction of user fees has not had any adverse effects on the use of services. In most of the hospitals, the total number of outpatients and inpatients either remained more or less the same or increased slightly. (See Table 5.)

### 3.6 Challenges

The Medicare Relief Societies in Rajasthan are now five years old. In the absence of a detailed, independent assessment, it is difficult to comment authoritatively on their overall success. It has, however, undoubtedly been proven that the financial autonomy they provide has led to marked improvement in the functioning of the hospitals they serve. Timely procurement of consumables has increased efficiency of machine and equipment use, and society funds have supplemented limited government resources to accomplish the following:

- maintenance of buildings and operating theaters;
- replacement of equipment;
- procurement of essential drugs;
- provision of free medical care to the poor and to others;
- contracting cleaning services;
- provision of medicines and diagnostic tests to patients at below market rates.

There is, however, room for improvement. These are the main challenges the societies face.

- (i) A lack of clear vision for the use of surplus funds has resulted in heavy spending on machines and equipment. In some facilities, machines were purchased in the absence of trained personnel to operate them, so they stand idle. In order to correct these distortions, the state government issued orders that the purchase of machines/equipment for medical college societies costing more than Rs. 2 million or up to Rs. 0.5 million in district hospitals would require prior government clearance.
- (ii) Societies largely failed to live up to their mandate to provide free services to those in exempted categories. The government therefore had to mandate that 25% of surplus funds be spent for providing free medicines to those below the poverty line.
- (iii) Societies were unable to utilize generated funds during the year in spite of existing demand. This clearly reflects poor management and planning on the part of hospital administrators.

**Table 5: Numbers of In- and Outpatients from 1994-1998**

District	Facility	Total Number of In- and Outpatients				
		1994	1995	1996	1997	1998
Ajmer	JLN Hospital	448,961	479,631	487,805	469,014	490,128
	YN Hospital Kishangarh	NA	NA	NA	72,120	66,520
	Rajkiya General Hospital, Nasirabad	NA	61,612	69,883	76,969	68,020
	AK Hospital, Beawar	266,795	232,954	230,913	222,737	215,766
Bundi	General Hospital	236,991	279,023	233,467	275,884	NA
	SRB Hospital, Ratangarh	71,716	74,335	72,539	72,486	78,504
Chittorgarh	General Hospital	142,602	145,069	168,965	174,310	NA
Dholpur	Sadar Hospital	NA	NA	NA	176,217	148,418
Jodhpur	Mahatma Gandhi Hospital	180,412	175,310	172,470	160,678	175,499
Jaipur	SMS Hospital	1,121,039	1,177,302	1,353,794	1,380,884	1,457,493
	Janana Hospital	114,378	NA	NA	NA	97,320
	Kavantia Hospital	124,413	NA	167,926	196,207	196,279
	Rukmani Devi Jaipuria Hospital	449,401	83,097	125,400	120,695	117,169
Jalore	General Hospital	121,640	118,717	121,944	132,910	117,322
Jhunjhunu	BDK Hospital	80,676	113,607	102,068	162,806	180,389
Nagaur	Rajkiya Hospital	103,174	98,805	119,406	130,448	NA
	Rajkiya Chikitsalay, Deedwana	63,200	54,648	105,312	103,301	98,131
	Rajkiya Chikitsalay, Ladnoo	86,313	73,554	93,220	91,798	142,944
Pali	Bangad Hospital	186,332	194,835	196,293	156,990	150,394
Rajsamand	Referral Hospital	NA	53,021	58,339	53,888	61,069
Karauli	Rajkiya Chikitsalay	193,323	17,1216	232,884	1,966,511	159,508

Note: NA = data not available

- (iv) The methods used to set user fees vary a great deal. There is also a lack of clear direction regarding their level, i.e., what percentage of the non-salary recurrent costs in the budget should be recovered by user fees.
- (v) Though the societies have the mandate to levy charges for treatment, no society has yet ventured to do so. This limits their growth potential.
- (vi) Proper planning and accounting systems are lacking, though an audit is regularly done in a majority of the societies. Most do not prepare annual

budgets; rather, expenditures are made on the basis of ad hoc decisions.

#### 4. Conclusion

Rapid expansion of health facilities without corresponding increases in allocations for non-salary recurring costs led to operational deficiencies in Rajasthan's public health sector including insufficient funds for consumables, shortages of diagnostic facilities and laboratory equipment, and a general deterioration of the physical

infrastructure. To meet increasing health needs and costs, the state mobilized additional resources. Two schemes were introduced in the 1980s in government hospitals as initial steps towards partial cost recovery and cost sharing. Though neither was successful, there was no public opposition to them. That demonstrated to the government that people were not averse to paying fees for health services. The state government then looked to beneficiaries and non-governmental organizations to generate resources for public facilities and thus established Medicare Relief Societies in 1995.

The societies have the potential to be important instruments for managerial autonomy and alternative financing. Their performance in terms of resource generation and improvement service quality has been remarkable. In fact, encouraged by the success of this experiment, the Government of Rajasthan has decided to create Medicare Relief Societies in all hospitals having 30 beds or more. It has also become apparent that the public is willing to pay for quality health services. The weaknesses of the societies are not insurmountable. Clear government guidelines for cost recovery coupled with training for hospital administrators in planning, accounting and obligating society funds would solve most of the problems.

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