

Doctoring the Village Doctors

Giving Attention Where it is Due



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Dedication

To residents of Chakaria who face adversity with spirit and the village doctors who care for them with sincerity and compassion.

Foreword

Doctoring the village doctors is a pioneering study from the Chakaria *upazila* (Sub-district) of Bangladesh. The village doctors of the title are informal medical practitioners. They are ubiquitous in rural areas of Bangladesh, filling the large gap in health service provision due to both the lack of health human resources and the serious mal-distribution of qualified health personnel as between metropolitan and rural areas. They are individuals with limited levels of training or reliable medical knowledge but they are generally the mainstay of health services for the poor in Bangladesh. They pose a dilemma for health policy. Their practice is often incompetent – they are linked to unregulated pharmacies and rely on charging for prescriptions to earn their livelihoods. As this study demonstrates, much of their prescribing is inappropriate and some of it is harmful. There is little or no regulation of their activities. At the same time, they provide convenient, accessible and flexible services to their poor clients. In contrast to the reception frequently given at government health services, they treat their patients respectfully. Given the acute shortages of qualified personnel, these providers will be around for the foreseeable future.

The intervention research reported on here, stems from a commitment by the team of medical and social scientists at ICDDR,B to try to improve the practice of these providers, both by reducing its harmful elements and by increasing the knowledge and skills of the village doctors themselves. This book chronicles the background to and design of the intervention, and examines its outcomes. The intervention had three components. One was a training programme focused on essential management of priority conditions and appropriate prescribing. The second was the development of a locally adapted social franchise model to “brand” village doctors who successfully completed the training, and thereby increase their legitimacy in the community. The third consisted of an effort to develop greater accountability of the village doctors’ practice by setting up a local monitoring system.

As the reader will discover, the intervention had some success in reducing the inappropriate and harmful prescribing practices in the intervention area. The social franchise network was successfully established, and elements of a community based monitoring framework were put in place. But major contextual factors, including the dominant role of drug wholesalers’ representatives in influencing prescribing

behaviour, meant that the intervention achieved less than was expected. The authors lay out the results and the challenges that the intervention brought in trying to improve basic health care provision for the rural poor. They are candid about its limitations and successes and they outline the next, exciting steps that are being taken to build on the lessons from this round of intervention.

This study was carried out under the auspices of the Future Health Systems Research Programme Consortium. Funded by the UK's Department for International Development, this is a partnership of seven organisations working in Afghanistan, Bangladesh, China, India, Nigeria and Uganda under the common theme of increasing equitable access to health care for poor populations. The consortium's research has drawn attention to the importance of informal markets in the profile of developing country health provision and the vital need to address this in policy and programming. The work of the ICDDR,B team in Chakaria is a major step in improving our understanding of this neglected area, and of potential ways to engage with it.

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In a previously published book “Health for the rural masses” the problems of health systems in a typical rural area namely, Chakaria, Bangladesh was highlighted in great detail from different perspectives. “Doctoring the Village Doctors” provides an example of an innovative solution to the problems identified in the previous book. The intervention described in the book has been evaluated in great detail to demonstrate what kind of impact we could expect from interventions with training, accountability mechanism and social franchising in limited scope. We hope that this book inspires more innovative ideas to make primary healthcare through existing informal healthcare providers more effective in settings like Bangladesh.

We would like to acknowledge many organizations and individuals who directly or indirectly contributed to carrying out the study and bringing this book into fruition.

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We would like to acknowledge the support of the ICDDR,B to the Chakaria field site where the *ShasthyaSena* intervention was implemented. The existence of a Health and Demographic Surveillance System (HDSS) made a rigorous evaluation of the intervention much easier than it would have been otherwise. The HDSS was funded by ICDDR,B and its donors which provide unrestricted support to ICDDR,B for its operations and research. Current donors providing unrestricted support include: Australian Agency for International Development (AusAID), Government of the People’s Republic of Bangladesh, Canadian International Development Agency (CIDA), Swedish International Development Cooperation Agency (Sida), and the Department for International Development (DFID), UK. We gratefully acknowledge these donors for their support and commitment to ICDDR,B’s research efforts.

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List of acronyms

BBS	Bangladesh Bureau of Statistics
DGHS	Directorate General Health Services
DHS	Demographic and Health Survey
MMR	Maternal mortality ratio
SBA	Skilled birth attendant
VD	Village doctor
SS	<i>ShasthyaSena</i>
HDSS	Health and Demographic Surveillance System
IMCI	Integrated management of childhood illness
ARI	Acute respiratory infection
ICDDR,B	International Centre for Diarrhoeal Disease Research, Bangladesh
IMR	Infant mortality rate
WHO	World Health Organization
NGO	Non governmental organization
SARV	Social Assistance and Rehabilitation for the Physically Vulnerable
ORS	Oral Rehydration Solution
MUAC	Mid-upper arm circumference
ANC	Ante natal care
PNC	Post natal care
FGD	Focus group discussion
IDI	In depth interview
UC	Union Committee

CHAPTER

1



Children gathered to play football, Chakaria

Source: Andrew Jajja

Introduction

Abbas Bhuiya, Zeeshan Rahman, Sabrina Rasheed
and Tania Wahed

Bangladesh, a densely populated country of 150 million people (National Institute of Population, Research and Training, Mitra and Associates and MEASURE DHS Macro International, 2007), is predominantly rural with about 70% of the population living in the rural areas. The country is one of the world's poorest, ranking third in the extent of poverty (International Fund for Agricultural Development, 2007). According to national estimates forty percent (Bangladesh Bureau of Statistics, 2008) of the population lives below the poverty threshold in extreme destitution and deprivation, with inadequate shelter, food, clothing, education and sanitation. However, despite all these problems they have access to basic healthcare. One of the major factors that causes impoverishment or exposes the already poor households to risks of sliding deeper into poverty is unexpected health problems with a high burden of healthcare costs largely paid for by direct 'out-of-pocket' household expenditure (Griffin, 1992, WHO 2006), an estimated 65% of total spending on health care (Data International, 2003). It has been reported that Bangladesh has one of the highest rates of reliance on out-of-pocket health expenses in Asia (Werner, 2009).

Acknowledging the needs of the poor, the constitution of the People's Republic of Bangladesh recognizes that "Health is the basic right of every citizen" and promises to provide basic health and medical requirements to all. A signatory to the historic Alma Ata Declaration on Primary Health Care in 1978, the country has placed significant emphasis on the provision of free or low cost comprehensive primary health care and universal family planning services. With the objective to expand the delivery system as far down as possible and to reach as many as possible, the government has invested in the rural health infrastructure on a massive scale. A total of 413 *upazila* Health Complexes at the sub-district level, 3,600 Union Health and Family Welfare Centres at the union level, and 1,399 Rural Dispensaries at the community level are in existence in the country (Bangladesh Bureau of Statistics, 2008; Bangladesh Bureau of Statistics, 2007, Government of People's Republic of Bangladesh, 2007). In addition, 59 district hospitals and two general hospitals provide secondary care in

the country. There are 23 hospitals attached to medical colleges and universities to provide tertiary care (Bangladesh Bureau of Statistics, 2008; Bangladesh Bureau of Statistics, 2007; Government of People's Republic of Bangladesh, 2007). Added to these are the 18,000 community clinics in the rural areas that have been revitalised after a long period of inactivity (The Daily Star, 2009) and 30,000 satellite clinics (makeshift clinics) per month, mostly for immunization services (Directorate General of Health Services, 2010).

Although the public sector physical infrastructure stretches far into the union and village levels, the quality and provision of healthcare services remains inadequate (Bangladesh Health Watch, 2008). The limited literature on the country's health system is replete with stories of inefficiency and failure to provide quality services to its people (Cockcroft, Milne and Anderson, 2004).

In Bangladesh, a serious dearth of qualified health workers, in terms of absolute numbers, skill mix and geographic distribution as well as absenteeism, limits access to formal healthcare services (Bangladesh Health Watch, 2008; Chaudhury and Hammer, 2004). In total, the public sector has 38,537 physicians, 15,023 nurses, and 9,230 health technologists (Bangladesh Health Watch, 2008). Though the number seems large, in fact, there is a huge shortfall of formal sector health workers. Bangladesh has a shortage of 60,000 physicians, 280,000 nurses and 483,000 technologists (Bangladesh Health Watch, 2008) indicating severe shortages of health workforce in terms of absolute numbers.

According to the Ministry of Health, there are large numbers of medical vacancies in the rural areas. Of the 90,000 public healthcare personnel positions in the country 18,000 are currently vacant including the posts of about 5,500 doctors (IRIN, 2009). Currently, only 18% of births are being attended by skilled birth attendants (SBAs), which means more SBAs must be trained in the near future in order to achieve the Millennium Development Goal target of reducing the maternal mortality ratio (MMR) by three quarters by 2015.

The shortage of trained healthcare workforce is exacerbated by absenteeism which plagues rural health centres. According to a World Bank report (IRIN, 2009), at the *Upazila* Health Centres, 40% of doctors are regularly absent and at the Union Health and Family Welfare Centres the sole doctor is absent 74% of the time. Moreover, according to the Directorate General of Health Services (DGHS), there is a huge disparity between the numbers of healthcare personnel in urban and rural areas. In addition, the provision of public services and financial allocations are not distributed optimally by region as the distribution is not based on any assessment of need and demand. The public health institutions of the country have consistently failed to deliver services effectively, especially to their poorest citizens.

Apart from the shortages of skilled healthcare professionals and chronic absenteeism, the public healthcare sector suffers from a dearth of medicine and equipment, unhygienic physical facilities, a scarcity of power and water, a lack of physical security for staff, informal fees, and neglect and maltreatment of poor patients (Bangladesh

Health Watch, 2008). The standard of public health care provision is inadequate, due to low investment, lack of supervision and monitoring, top-down management approaches, pilferage of supplies, unofficial payments, staff absenteeism and vacant posts, engagement of government doctors and staff in private clinics and diagnostic centres and presence of *Dalals* (brokers) for these private facilities around public hospitals. As a consequence, there has always been dissatisfaction with public sector health services in terms of their functioning and quality of services (Cockcroft *et al.*, 2004; Chaudhury and Hammer, 2004; Bangladesh Health Watch, 2010).

The entire health sector is characterised by weak governance and suffers from lack of accountability and transparency (Bangladesh Health Watch, 2010). Local governments rarely act to establish appropriate mechanisms and measures for optimal operation in every aspect, which are worst fared by the communities, who are grossly neglected. Establishing accountability of the health systems at the local level may in fact enhance the functioning of the facilities, eventually, leading to quality services (Cockcroft *et al.*, 2004; Azad and Haque, 1999).

Healthcare provision in Bangladesh is highly pluralistic with a wide range of therapeutic choices available, ranging from self care to traditional to modern medicine (Ahmed, 1993; Bangladesh Health Watch, 2007) with providers of health-related goods and services varying widely, in terms of their practice settings, type of knowledge and associated training (Bloom and Standing, 2001). In the context of pluralism in the health care system of Bangladesh, categorising providers of health services as public sector or private sector providers seems inadequate or simplistic. The health sector of Bangladesh comprises of 'formal' and 'informal' health care providers. The term 'informal' includes a great variety of health care providers who are unlicensed, unregulated private providers with limited to no formal or institutionalised training or required medical qualification to provide health care services. The informal providers generally provide services from the private sector operating at the fringes of the organized health market. The formal providers are the qualified medical professionals or para-professionals such as physicians, nurses, or paramedics who are generally involved in the public sector, but may and generally do opt to provide services from the private sector.

With the persisting shortages in personnel, management, and resources, and the inadequacies in the provision of services throughout the formal health sector, the informal providers have become an integral and significant source of care, especially amongst the rural poor, who find no other alternative available to them to seek and acquire care (Bhuiya, 2009). The deficiencies, compounded by the growing needs of the rural populace, have given unabated support and sustenance to the informal sector. It is estimated that nearly 95% of the entire national health workforce is made up of the informal sector (Bhuiya, 2009; Bangladesh Health Watch, 2008), the number of which is steadily increasing. In Bangladesh, the informal sector includes a large number of less than fully qualified or unqualified non physician practitioners like Village Doctors (VDs) practicing modern medicine, homoeopath doctors, and traditional healers, of whom VDs with very little to no formal training are the dominant type (Bangladesh Health Watch 2010; Ahmed 2005; Cockcroft *et*

al., 2004). The informal providers are largely unregulated and unmonitored, begging numerous questions about reliability, liability, integrity, and consistency in providing adequate and appropriate services. Although the spread of informal providers has enabled the poor to gain access to previously unavailable drugs and medical services, it has also left them at substantial risk from inferior quality, inappropriate and sometimes potentially dangerous medical care involving unnecessary costs. The lack of regulation in the informal sector and poor monitoring and supervision of formal sector practitioners creates a system with no checks and balances, with the ultimate victims being the patients, especially the poor who are often uneducated and lack political voice.

An exploratory study in 2007 confirmed that, given the limitations of the public sector and the high cost of formal, private health care, the informal sector thrives and fills this void to provide basic and essential health services to the population (Bhuiya, 2009). The research was conducted by the International Centre for Diarrhoeal Disease Research, Bangladesh (ICDDR,B) in Chakaria, an *upazila* (sub-district) in Cox's Bazaar district near the southeast coast of the Bay of Bengal, to explore the healthcare seeking behaviour of the rural populace, to identify important attributes of the existing healthcare market in the rural areas of the country and to understand the extent and appropriateness of healthcare practices and performance of the informal sector, especially of the VDs.

To capture a more holistic picture of the value and importance of VDs and their treatment practices as well as existing health seeking trends, a survey was used to collect information from a random sample of a thousand households. Findings revealed that of the 6,162 individuals living in these households, 43.5% were suffering from some sort of illness. Approximately, 47.1% of those who were ill, had sought treatment for their illnesses, either home remedy or care from a healthcare provider and the rest had not done anything to treat their illnesses for various reasons. Forty percent of those who did not seek care stated lack of financial resources as the main reason. Two thirds of people who had sought care from a health care provider, irrespective of the type of ailment, had consulted VDs as the first contact; and only 14% had sought care from qualified doctors (Mahmood *et al.*, 2009). Information collected on various attributes of VDs revealed that the majority of the VDs did not have proper accreditation or certified medical knowledge to provide healthcare services. The majority of the VDs had become a provider through experience of work as a salesman in a drugstore, or as a trainee or assistant of a qualified physician or of a VD, or by attending very short courses. The pattern is similar in other parts of the country (Ahmed, 1993).

The results from the formative study in Chakaria also documented that VDs are an integral part of rural healthcare and to a great extent are indispensable to the rural health systems' sustainability. The VDs treated all kinds of diseases including hypertension, female reproductive health problems, pregnancy related problems, goitre, diabetes and tuberculosis. Around 90% of these VDs treated diarrhoea, dysentery, cold and fever, pneumonia and accident cases. The study findings confirm significant deficiencies in the treatment practices of the VDs indicating that the VDs

were providing care of questionable quality with considerable over-prescription of drugs, and the choice of drugs was mostly inappropriate and at times quite harmful. A review of 89 cases revealed that only 18.4% of the drugs used for treating diarrhoea, pneumonia and fever & cold were appropriate according to relevant treatment guidelines, 7.1% were harmful, and 74.5% were unnecessary but not dangerous (Iqbal *et al.*, 2009). Thus, evidence collected documents significant deficiencies in the treatment practices of the VD. Despite their inadequacies, the VDs are widely sought and quite popular amongst the rural population. The most commonly cited reasons are greater accessibility, respectful or polite attitude and lack of access to formal healthcare facilities. VDs are also perceived to be a cheaper option, as patients do not have to travel far, thus saving time and travel costs (Bhuiya, 2009). Moreover, they are known to make adjustments in payments on the basis of ability to pay and prescribe or provide a partial dose of a drug. The widespread existence of VDs within the rural communities coupled with the fact that they are an integral and significant source of health care in the rural areas as well as their inappropriate prescribing practices necessitates the establishment of effective regulatory arrangements or appropriate strategies or interventions to improve the performance of these providers. Regardless of the detrimental consequences in terms of safety and efficacy of treatment practices of the VDs, attempts to remove them from the health market without adequate and well functioning alternatives will fail and also deprive millions of poor people of their most significant source of healthcare (Bloom, 2009).

The research showed that VDs are an important stakeholder in the rural health system of Bangladesh, as they cater to a large section of the population and cover a wide spectrum of medical conditions. Inherent in that system are grave risks that can be and should be avoided, with potentially effective interventions that could help augment VD's abilities as a service provider, rather than waiting for an over-haul of the entire system. VDs lack the appropriate know-how about disease management and easily resort to harmful medical practices. To get the best out of this growing human resource, the research team worked to develop an intervention to improve their knowledge and practice, to create more competent, better quality services to the rural poor, thus strengthening the rural health care system. In light of the initial study conducted in Chakaria, the limitations of the public sector, and the likelihood of the persistence of unqualified healthcare providers, one of the solutions for harm reduction is to get engaged with the VDs. Keeping this in mind, ICDDR,B devised an intervention study, which is the premise for this book, that was focused around the VDs in Chakaria *upazila*. Although the study area was not selected statistically to ensure its representativeness of Bangladesh; socio-economically, demographically, health status and health service-wise the area is comparable with the eastern region of the country and is reasonably comparable to the rest of rural Bangladesh (Bhuiya, 2009).

To reduce the harmful practices of the VDs, a strategy called the *ShasthyaSena* (Health Soldier) intervention, which uses a social franchise model with the aim of improving and influencing the performances of the VDs, was formulated and implemented in Chakaria. The main purpose of the *ShasthyaSena* (SS) intervention was to reduce harmful practices and inappropriate prescription of drugs by the VDs and to examine

the feasibility of branding the VDs as *ShasthyaSena* for a possible franchising in the future. The intent of the intervention was to address the poor service quality and lack of accountability of the VDs, and to establish referral linkages facilitating better integration of the VDs into the formal healthcare system. The rationale behind the SS intervention was primarily to influence a large local group of providers positively through a simple but innovative intervention.

The SS intervention was designed and implemented using a combination of three component strategies: i) to improve the knowledge and skills of the partially qualified or unqualified providers, training was provided on appropriate treatment practices for eleven common illnesses and effective use of drugs; ii) to increase accountability of the VDs in the community, the local government and leaders were involved in monitoring and overseeing the healthcare related activities of the providers, and iii) a network of VDs named *ShasthyaSena* was formulated to ensure established standards of treatment and to reduce inappropriate and potentially dangerous use of drugs. There were several aims to the SS intervention:

1. Create conditions for trust and confidence within health care users in the competence and ethics of the health care providers and establish symbiosis between the providers and users through engagement and mobilization.
2. Create institutional arrangements through the establishment of a formalized cadre of knowledgeable healthcare providers, fostering the provision of responsible, transparent healthcare services, by engaging and organizing a group of the existing VDs in the area into a distinct and recognizable corps of “Health Soldiers” or *ShasthyaSena* who would benefit from a reputation for skill and ethical behaviour in terms of their own income, future career prospects, social status and influence.
3. Strengthen the local community to demand safe, consistent and appropriate healthcare services, and to voice their concerns and inputs regarding provider performances in open forum discussions with providers and officials.
4. Mobilize local government officials to develop an interest in the healthcare system in their locality, through regular, active participation in open discussions and assessments of the system.

VDs volunteered to take part in the intervention to form the *ShasthyaSena*, and were organized and trained. They were given relevant information and motivated change their disease treatments and management where necessary. ICDDR,B provided extensive training on treating eleven health conditions, which were very common amongst the rural population of Chakaria. These conditions include pneumonia, severe and very severe pneumonia, diarrhoea, hepatitis, malaria, tuberculosis, viral fever, and various complications related to labour and delivery, for example obstructed labour, pre and post labour haemorrhage. For each condition, training was also provided about the use of drugs, specifically, the use of antibiotics and steroids. These *ShasthyaSenas* were also educated on designated referral centres (from contact

points to procedural matters) to encourage appropriate referral practices. The health problems that were identified for training purposes were selected based on their prevalence in the study community.

Data Sources

The intervention study, the findings from which have been documented in this publication, is a component of the “Future Health Systems: Innovations for Equity” Research Programme Consortium, funded by the UK Department for International Development. Data for the current intervention study have been collected from VDs who volunteered to be part of the study in the ICDDR,B field site in Chakaria *upazila*, located in the south-east of Bangladesh. The research was designed to compare between the intervention and non-intervention areas to gauge the differences and level of impact in service provisions, behavioural trends and modifications of the VDs at start up and in the final phase of the intervention. Data have been collected for this project from 2008 through 2010. Out of the 294 VDs in Chakaria, 157 were practicing in the Chakaria Health and Demographic Surveillance System (HDSS) intervention area, of which 117 qualified as *ShasthyaSenas* in the intervention programme. Another 137 VDs practicing out of the intervention area, i.e. the non-HDSS area, were selected to serve as the comparison group to assess the impact of the intervention on inappropriate use of drugs.

Organization of the book

The book is organized into six chapters. The 1st chapter provides relevant contextual information on VDs establishing the significance of VDs as an integral contributor in the health care system of the country as well as the rationale for initiating and implementing the SS intervention addressing the inadequacies and harmful practices of the VDs; the 2nd chapter provides a brief description of the study population and study area as well as a reiteration of the formative knowledge gathered about the VDs in 2007. The 3rd chapter describes the intervention that was developed to address the harmful practices prevalent in the informal sector, including the organization of the VDs and formation of the SS network. The 4th chapter offers an analytical look at the impact of the intervention on the VDs, including the effect it had on patient numbers, the management of diseases, and the reduction of harmful practices. The 5th chapter accounts for the perceptions of the VDs, community leaders and the community people about the usefulness of the programme, its deficiencies and approaches and opportunities for improving the service. The 6th and concluding chapter offers views on new directions regarding the intervention and the informal sector in general, highlighting other efforts that can prove to be fruitful on the same premise of helping the poor and needy.

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CHAPTER

2



Rice field at dawn, Chakaria

Source: Andrew Jajja

Characteristics of Study Area and Population

SMA Hanifi, Farhana Urni and Abdullah Al Mamun

Abstract

Chakaria is located near the south-eastern coast of the Bay of Bengal and shares socio-economic, demographic and health characteristics that are quite comparable to other low performing areas of the country. The un-regulated, informal, 'less than fully-qualified' practitioners are a significant source of healthcare in Bangladesh. The dominant type of informal providers in the country is known as the Village Doctors (VDs). Findings from an extensive formative research carried out in Chakaria in 2007, confirm that the VDs are the largest source of healthcare in the rural areas. VDs are widely sought and quite popular in the community due to their greater accessibility, friendly attitude and villagers' lack of access to formal health care. The VDs have varying levels of medical qualification and length of training. Although a minority of the VDs have government accredited qualifications, most have attended training courses of short duration on specific healthcare related topics such as diarrhoea, malaria, acute respiratory infection, Integrated Management of childhood Illness, tuberculosis, AIDS and safe motherhood. The majority of the VDs started their journey as a healthcare provider as salesmen in drug stores, as trainee/assistant of doctors or VDs, or by attending short training courses. Study findings indicate that as owners of drug stores, the majority of the VDs had financial incentives for dispensing unnecessary and at times harmful medicines. A review of 89 cases revealed that 18.4% of the drugs used for treating diarrhoea, pneumonia and the common cold & fever were appropriate according to relevant treatment guidelines, 7.1% were harmful, and 74.5% were unnecessary but not dangerous. The VDs treat almost all kinds of diseases including hypertension, female reproductive health problems, pregnancy-related problems, goitre, diabetes and tuberculosis. The study findings emphasize the need for actions that address the poor performances of the VDs, who are significant providers of healthcare in rural Bangladesh.

Background

This chapter provides a brief description of Chakaria, the area in which the intervention was carried out, and presents information on selected health, socio-

economic and demographic characteristics of the population residing in the area from Chakaria Health and Demographic Surveillance System (HDSS). The chapter also includes descriptions of the Village Doctors (VDs) from the formative research conducted in 2007. The HDSS data were collected from eight of the 19 unions of Chakaria *upazila*. The Chakaria HDSS is a unique longitudinal dataset of health, socio-economic and demographic information collected from a random sample of 7000 households followed on a quarterly basis since 1999. The Chakaria HDSS became a member of the INDEPTH Network in 2007.

Geography of Chakaria

Chakaria is one of the 500 *upazilas* (sub-districts) in Bangladesh. It is located within latitudes 21°34' and 21°55' North and longitudes 91°54' and 92°13' East near the south-eastern coast of the Bay of Bengal. Administratively, it is under Cox's Bazar district and comprises of 19 unions. The highway from Chittagong to Cox's Bazar passes through Chakaria. It is a lowland area bounded by the hills on the east and the Bay of Bengal on the west. The *ShasthyaSena* intervention of ICDDR,B was carried out in eight unions, and to assess the impact of the intervention or activities of ICDDR,B the unions outside the intervention area of ICDDR,B served as the comparison area (figure 2.1).

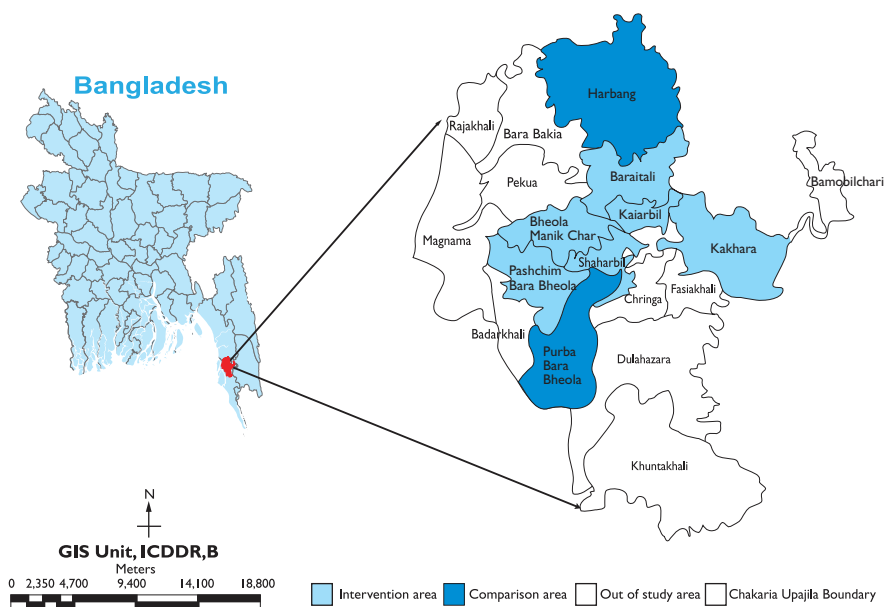


Figure 2.1 Map of Chakaria

Chakaria is prone to heavy rainfall during the months of May to September, and dry weather during the remaining months. Due to its location in the coastal area, Chakaria is vulnerable to frequent cyclones and tidal floods. Climate change induced sea-level rise has resulted in inundation, erosion, degradation and increased salinity

of soil. This has resulted in reduced access to land and water. The livelihood, food security and health of the population in Chakaria have suffered as a consequence.

Socioeconomic Characteristics

The majority of the population of Chakaria are Muslims (89.9%) followed by Hindus (6.8%), and Buddhists (3.3%). In terms of ethnicity Bangalees, constitute 97.6% of the households, and the *Mogh (Rakhain)* or the tribal people from the Chittagong hill tract area make up the rest. The main languages spoken are the Chittagonian dialect and Bangla.

Chakaria is a typical rural area with similar socio- demographic and health characteristics to other low performing regions in Bangladesh (Bhuiya, 2009). Existence of socioeconomic inequities in various health indicators has been documented in the area. The findings from the research carried out in Chakaria therefore, are informative and relevant for the formulation of effective strategies needed to improve the health of the rural population.

Approximately, one third (36%) of all households have at least one member who is a manual labourer (Bhuiya, Hanifi and Mahmood, 2006). The wages for manual labour in the area are very low and households of manual labourers are at risk of extreme income insecurity and economic vulnerability. In terms of literacy, 32.8% of people aged 7 years and above in Chakaria are literate compared to the national average of 45.3% (BBS, 2003). According to 2007 estimates, nearly one-third (29%) of the population in the age group of six years and above have never attended schools.

In our 2009 study, approximately seven percent of the household heads, defined as the key decision maker of the household, was female and for ninety-six percent of the households the main earning member was a male. The average household size was 6.2. The main economic activities in the area are agriculture, forestry and sea fishing. Approximately 30% of the male population who were of the age of six years or above were students followed by 24% day labourers, 11% farmers, 11% traders, 8% holding salaried jobs, and 9% unemployed. A small proportion of the male population were self-employed, mostly in small trades. Among females of the same age group, 44% were housewives, 31% were students, and 21% were unemployed. Only a minority were employed as day labourers (3%).

The majority of the households were built with bamboo (71.1%) followed by mud (22.9%) cement (5%) and corrugated tin or wood. The commonly used materials for construction of roofs were leaves (37%), tin (34%), straw (27%), cement (1%), and polythene (1%). Eight percent of the households owned a radio, 4% had a television, 63% had mobile phones and 10% had electricity supply at their homes. Tube-wells were the universal source of drinking water in Chakaria as 99.9% households had access to them. Approximately 9% of the households did not have a fixed place for defecation.

Chakaria is characterised by a high concentration of migrant workers and dependency on remittances. In 2009, the rate of out migration was 41.3 per 1000 population compared to in migration of 28.3 per 1000 population. Among the various NGOs (non-governmental organizations) working in Chakaria, BRAC and Grameen Bank are the most dominant. About 26% of the households had family members with NGO membership in 2009.

Population dynamics

According to 2009 estimates, Chakaria had a population of around 418,607 with a population density of 782 per square kilometre. Life expectancy at birth was 67.4 years for males and 69.7 years for females. The shape of the pyramid of Chakaria is typical of a developing country with declining mortality and fertility rates (figure 2.2). Males constitute 55% of the population. The sex ratio (males per 100 females) was 104. The age-dependency ratio (combined population of children under the age of fifteen and the elderly over the age of 65 years divided by the population within 15 to 64 years of age) was 75 which means that there were 75 dependents for 100 non-dependents.

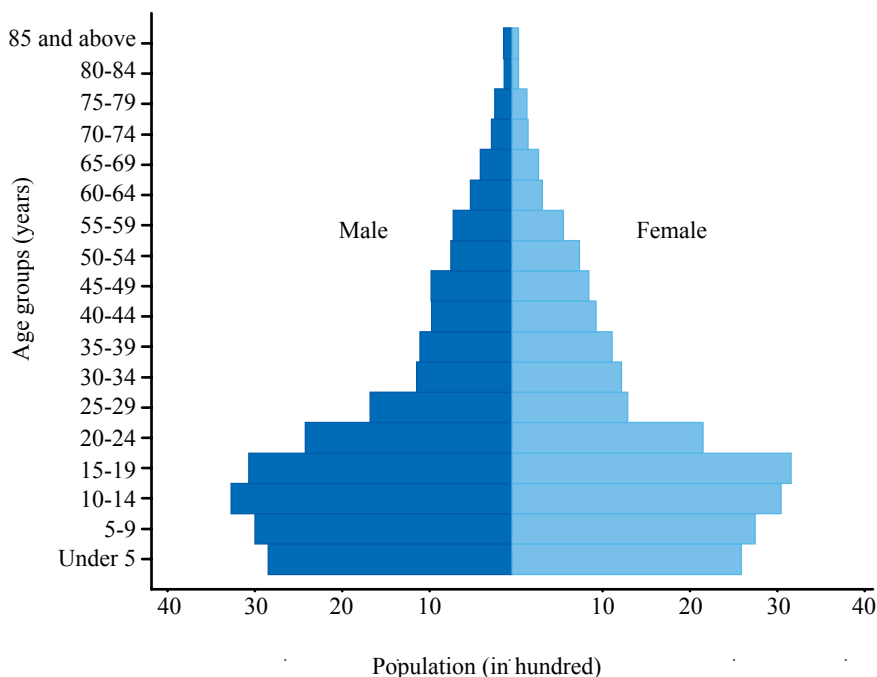


Figure 2.2 Male and female population by age and sex, Chakaria HDSS area, 2009

Mortality

The crude death rate in Chakaria was 6.5 per 1,000 population in 2009 compared to the national figure of 6.1. The infant mortality rate (IMR) has declined sharply in the area from 63.2/1000 live births in 1999 to 58.1/ 1,000 live births in 2009. However, IMR is still higher than the national figure of 52/1000 live births (NIPORT, Mitra and Associates and MEASURE DHS Macro International 2007). The rate of mortality of children aged 1-4 years was 4.7 per 1,000 population in 2009 (table 2.1). Twenty-nine percent of all deaths occurred in children under the age of 5 years and 40% of the deaths in the age group of 60 and above. Seventy three percent of under-five deaths occurred during infancy (Bhuiya, Hanifi and Urni 2008; Bhuiya, Hanifi and Mahmood 2007; Bhuiya, Hanifi and Mahmood 2006). Socioeconomic inequalities in mortality were seen among the under-five children. The mortality rate of children from the lowest quintile was nearly seven times that of children from the highest quintile.

Table 2.1 Under five mortality rate per 1,000 live births by asset quintile, Chakaria HDSS, 2009

Asset quintile	Number of birth	Number of under-5 deaths	Under-5 mortality rate
Lowest	233	27	115.9
Second	170	15	88.2
Medium	153	16	104.6
Fourth	197	14	71.1
Highest	237	4	16.9
All	990	76	76.8

HDSS = Health and Demographic Surveillance System.

Causes of Death

Bangladesh is undergoing a rapid social, economic, demographic and epidemiological transition which has led to a change in the disease profile of the population (Bangladesh Health Watch, 2007). The Bangladeshi population suffers from a high burden of infectious diseases as well as a growing burden of non-communicable diseases such as hypertension, heart disease, diabetes, rheumatism and cancer (Government of the People's Republic of Bangladesh, 2008; World Health Organization, 2008). The causes of death data in Chakaria show high incidences of both communicable and non-communicable diseases (table 2.2) which is similar to other rural areas of the country (ICDDR,B, 2008). The Chakaria HDSS recorded the cause of death based on reports of an informed family member collected during quarterly household visits. A physician then assigned the medical cause of death based on the report.

Table 2.2 Top Ten Causes of Death, Chakaria HDSS, 2004 - 09

Rank	2004		2005		2006		2007		2008		2009	
	Cause	Deaths (n)	Cause	Deaths (n)	Cause	Deaths (n)	Cause	Deaths (n)	Cause	Deaths (n)	Cause	Deaths (n)
1	Respiratory infections	39	Stroke	29	Stroke	31	Asthma/ Bronchitis	30	Stroke	33	Stroke	42
2	Senility	30	Respiratory infections	28	Senility	28	Neoplasm	29	Neoplasm	33	Senility	37
3	Asthma/ Bronchitis	26	Senility	28	Asthma/ Bronchitis	26	Respiratory infections	26	Asthma/ Bronchitis	26	Asthma/ Bronchitis	31
4	Neonatal*	17	Neoplasm	23	Respiratory infections	26	Senility	25	Respiratory infections	22	Neoplasm	29
5	Diarrheal disease	15	Asthma/ Bronchitis	19	Neoplasm	21	Stroke	25	Senility	19		26
6	Hepatitis	14	Neonatal	14	Neonatal	15	Neonatal	24	Hepatitis	13	Respiratory infections	22

Table 2.2 Top Ten Causes of Death, Chakaria HDSS, 2004 - 09 (Contd.)

Rank	2004		2005		2006		2007		2008		2009	
	Cause	Deaths (n)	Cause	Deaths (n)	Cause	Deaths (n)	Cause	Deaths (n)	Cause	Deaths (n)	Cause	Deaths (n)
7	Neoplasm	14	Drowning	12	Drowning	11	Accident	16	Accident	9	Drowning	14
8	Cardio-vascular	14	Accident	10	Hepatitis	7	Cardio-vascular	11	Drowning	9	Hepatitis	9
9	Stroke	12	Cardio-vascular	8	Accident	6	Diarrheal Diseases	9	Cardio-vascular	10	Accident	8
10	Accident	11	Nutritional	7	Diarrheal diseases	6	Hepatitis	9	Diarrheal diseases	7	Diabetes	7
Total		280		271		249		274		274		292

HDSS=Health and Demographic Surveillance System, Chakaria

* Neonatal deaths include deaths due to Premature birth and Low Birth Weight, birth asphyxia, birth trauma, sepsis and infection

** Neoplasm includes both benign and malignant

***Cardiovascular deaths do not include deaths due to strokes and hypertension

Morbidity

The area has some specific prevalent illnesses such as malaria and rickets. Chakaria is a malaria endemic area. The Social Assistance and Rehabilitation for the Physically Vulnerable (SARV), an NGO, identified a high prevalence of leg deformities in this area after the cyclone of 1991. The prevalence of rickets deformities in the Cox's bazaar district was about 0.9% in 1999 (Karim, Chowdhury and Gani, 2003). It is unusual to find rickets in a country like Bangladesh as the sunlight helps to produce vitamin D in the human body. Lack of calcium in vegetables, consumption of big fish instead of small fish, and low consumption of milk are considered to be the main causes of rickets in Chakaria.

Selected Demographic and Health Indicators

Fertility

The fertility level in Chakaria has been declining but still remains higher than the national level. The crude birth rate was 22.9 per 1,000 population in 2009. Total fertility rates per woman showed a downward trend during 1999-2009, reaching a value of 2.8 in 2009 which is slightly higher than the 2007 estimate of total fertility rate of 2.7 for the country (NIPORT, Mitra and Associates and MEASURE DHS Macro International, 2007). The age-specific fertility pattern is similar to the pattern typical of Bangladesh (figure 2.3) (NIPORT, Mitra and Associates and ORC Macro, 2005). Socioeconomic inequality exists in fertility (table 2.3).

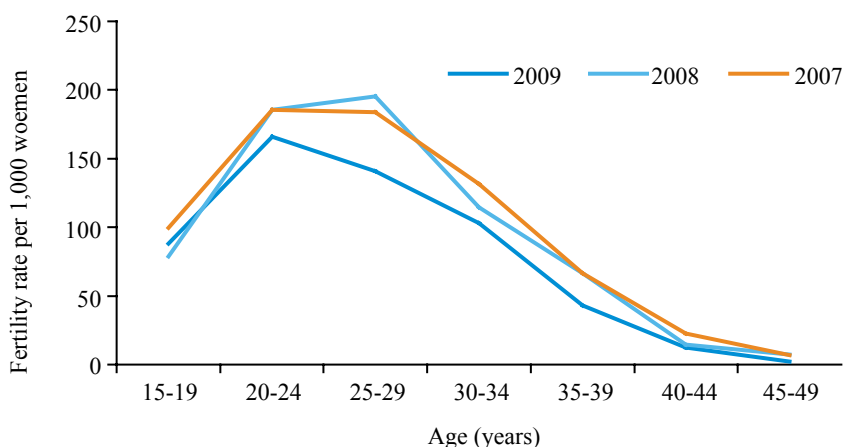


Figure 2.3 Age-specific fertility rate, Chakaria HDSS area, 2007-09

Table 2.3 Crude birth rates per 1,000 people by asset quintile, Chakaria HDSS, 2007-09

Asset quintile	2007	2008	2009
Lowest	26.0	26.6	26.0
Second	31.0	22.8	18.0
Medium	23.4	24.9	23.7
Fourth	24.9	28.0	25.2
Highest	27.9	26.5	25.9
All	26.6	25.8	23.6

Child Nutrition

Malnutrition is a major cause of death and debility in children in Bangladesh as roughly two thirds of under-five deaths are attributed to malnutrition and 75% are associated with mild and moderate malnutrition (WHO, 2007). In Bangladesh, the prevalence of malnutrition among children is high with 30% children aged less than five years malnourished. The proportion of moderate malnutrition in terms of percentage of underweight children is 46.3 which is considered very high (UNDP, 2007; GoB, 2007; Bhuiya *et al.*, 2007). Data on nutritional status in Chakaria is quite limited. Mid-upper arm circumference (MUAC) of children was collected in the HDSS area in 1994 and 1999 only. The proportion of severely malnourished children (MUAC <12.5 cm) in Chakaria has decreased from 32.3% in 1994 to 24.0% in 1999 (table 2.4).

Table 2.4 Distribution of MUAC of children aged 6-23 month, Chakaria, 1994 and 1999

MUAC (cm)	Year	
	1994 (%)	1999 (%)
<12.5	32.3	24.0
12.5 - 13.4	26.0	37.5
13.5 +	41.7	38.5
Mean (SD)	13.1 (1.5)	13.2 (1.2)
Total number (N)	2,116	6,707

Findings from the census of 1999 by ICDDR,B in the Chakaria HDSS area showed that the proportion of severely malnourished children was higher among girls compared to boys. Data also indicated that a child's nutritional status in Chakaria was inversely related to the child's household economic status. The proportion of malnourished children decreased with increase in economic status of the household (figure 2.5).

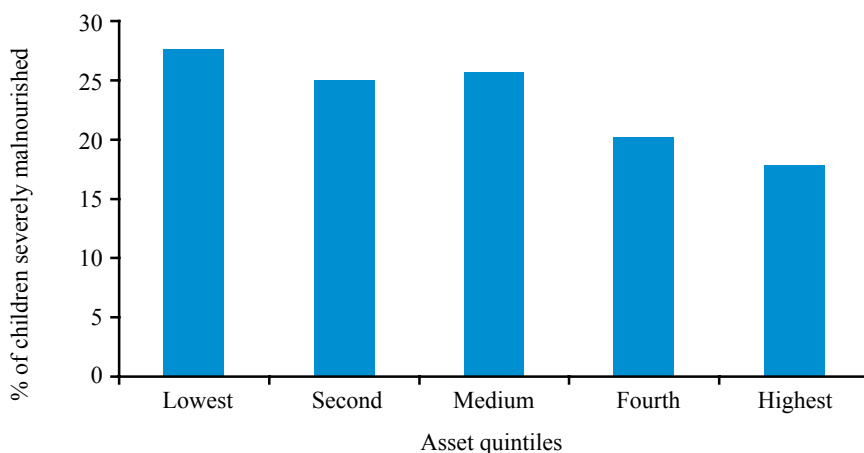


Figure 2.5 Proportion of children aged 6-23 months who were severely malnourished (MUAC<12.5 cm) by asset quintiles, Chakaria HDSS area, 1999

Informal healthcare providers of Chakaria

In a recent nation-wide survey it was observed that informal health care providers were the dominant group of health care providers for the rural population in Bangladesh (Bangladesh Health Watch, 2008). The sheer number of informal providers and the extent of their use by the villagers make them major actors in the healthcare system at the primary level. In comparison public sector facilities constitute an insignificant share of the healthcare market, especially for services that do not require in-patient care. These findings were confirmed by an exploratory study carried out in Chakaria in 2007 (Bhuiya, 2009). The proportion of formally trained healthcare providers in Chakaria *upazila* was only 4% (Bhuiya, 2009). The informal sector includes a large number of private practitioners such as VDs practising modern medicine, homeopaths, and traditional healers (Ahmed, 2005; Cockcroft *et al.*, 2004). In Bangladesh, the dominant type of informal providers are the VDs, who work outside a formal or regulated sector, and are less than fully qualified or unqualified non-physician practitioners and vendors of modern (allopathic) medicine. A formative research carried out in Chakaria in 2007 to understand the practice pattern of the VDs provided insights about the informal healthcare market. Among 328 VDs studied and only 26 were employed in the public and NGO sector, while the rest provided services on their own. In Chakaria, the VDs were mostly male (94.5%). The majority (89.3%) of the VDs included were educated in the secular educational system, only 6.7% of them attended *Madrassa* (religious schools with some modern subjects), and approximately 4% were educated in both systems. The majority of the VDs (66%) had at least 12 years of schooling.

It was observed that two thirds of people who had sought care for their illness had visited a VD as their first contact (Mahmood *et al.*, 2009). Findings suggested that VDs were widely sought after and quite popular in the community due to their greater

accessibility, friendly attitude and villagers’ lack of access to formal health care. The VDs were also perceived as the cheaper option for healthcare as people did not have to travel far for their service, thus saving time and travel costs (Wahed *et al.*, 2009). Furthermore, they were known to make adjustments in payments on the basis of ability to pay and prescribe or provide a partial dose of a drug. Interviews with community members in Chakaria revealed the VDs were well-respected members of their communities. However, qualitative analysis revealed that the villagers preferred to consult qualified practitioners for diseases perceived as severe or life threatening such as pneumonia in children and VDs for treating common illnesses (Sharmin *et al.*, 2009).

The healthcare provider survey in Chakaria (Bhuiya, 2009) documented that the medical qualification and type of training the VDs possess vary widely in type and duration. The majority of VDs did not have the proper accreditation or medical qualification required to provide healthcare services. Only 4% of VDs had government accredited training, 5.3% were trained as paramedics or para-professionals by Gonoshasthaya Kendra and ICDDR,B and 2.6% had some type of training in pharmacy while the majority (88%) had training without accreditation or had attended training courses of short duration on specific health topics such as diarrhoea, malaria, Acute Respiratory Infection (ARI), Integrated Management of Childhood Illness (IMCI), AIDs, tuberculosis and safe motherhood.

The majority of the VDs had become healthcare providers by being a salesman in a drug store, a trainee or assistant in a doctor’s chamber or of a VD or by attending short training courses (table 2.5). The VDs who had become healthcare providers through on-the-job experience thought that their exposure had provided them the opportunity to copy the prescribing practices of established healthcare providers.

Table 2.5 Distribution of Village Doctors by the process of becoming a healthcare provider

Process	%
Attending trainings	42.4
Trainee in pharmacy	21.6
Assistant in doctor’s chamber	20.8
Assistant of Village Doctor	9.7
Family tradition	4.3
Self / through practice	0.4
Selling medicine	0.4
Government job	0.4
Total	100.0
N	302

The majority (95%) of the VDs recommend diagnostic tests such as radiology and laboratory tests for the patients. However, as only a minority (4.6%) of the VDs had

shares or were owners of diagnostic facilities, they did not have any direct financial motives for recommending diagnostic tests for patients (Bhuiya, 2009).

Findings revealed that the majority of the VDs sell medicine (81.5%) and own one or more drug stores (Bhuiya, 2009). Thus, it is reasonable to assume that most of the VDs have financial motives in dispensing, prescribing, or over-prescribing medicine. However, it has been mentioned that when a patient is unable to pay for the medicine prescribed, which according to VDs happens quite frequently, the majority (79.1%) of VDs provided the medicine on credit. As VDs don't usually charge for consultations, so the medicines are their source of income.

Observations revealed that the majority of the VDs provided services from clinical settings that lacked proper water and sanitary facilities (Bhuiya, 2009). Furthermore, observation revealed that in the majority of cases, patients could be seen or heard from outside. The presence of other people or patients in the chamber during examinations compromises patient confidentiality and privacy. However, most of the VD offices had the common equipment needed to examine patients such as examination table, stethoscope, blood pressure machine, artery forceps and scissors.

Survey findings revealed that the VDs treated all sorts of diseases including hypertension, female reproductive health problems, pregnancy related problems, goitre, diabetes and tuberculosis (table 2.6). Around 90% of these VDs treated diarrhoea, dysentery, the common cold and fever, pneumonia and accident cases.

Table 2.6 Proportion (%) of Village Doctors treating various types of diseases

Diseases	%
Diarrhoea	98.7
Amoebic Dysentery	98.0
Viral Fever	97.4
Blood Dysentery	97.0
Pneumonia	95.4
Accident Patient	89.1
Hypertension	71.5
Reproductive Health Disease	62.9
ANC/PNC/Delivery	51.3
Drowning Patient	41.7
Goitre	27.2
Diabetes	22.9
Tuberculosis	13.3
Ricketts	12.3
N	302

Note: multiple responses recorded

The information gathered from exit interviews of the 236 patients was examined to evaluate the treatment practices of the VDs for diarrhoea, pneumonia, and the

common cold and fever. The findings showed that there were significant deficiencies in the treatment practices of the VDs which included over prescription of drugs which were mostly inappropriate and sometimes quite harmful (table 2.7; figure 2.6).

Table 2.7 Prescription of drugs for treating pneumonia, cold and fever and diarrhoea by appropriateness

Type of drug	Pneumonia N (%)	Cold and fever N (%)	Diarrhoea N (%)	Total N (%)
Appropriate	11 (40.7)	17 (15.0)	8 (14.3)	36(18.4)
Inappropriate				
Harmful	4 (14.8)	7 (6.2)	3 (5.3)	14 (7.1)
Not harmful	12 (44.5)	89 (78.8)	45 (80.4)	146 (74.5)
Total drugs prescribed (n)	27	113	56	196
Total cases (n)	9	58	22	89
Total patients receiving harmful drugs(n)	4	6	3	-
N				236

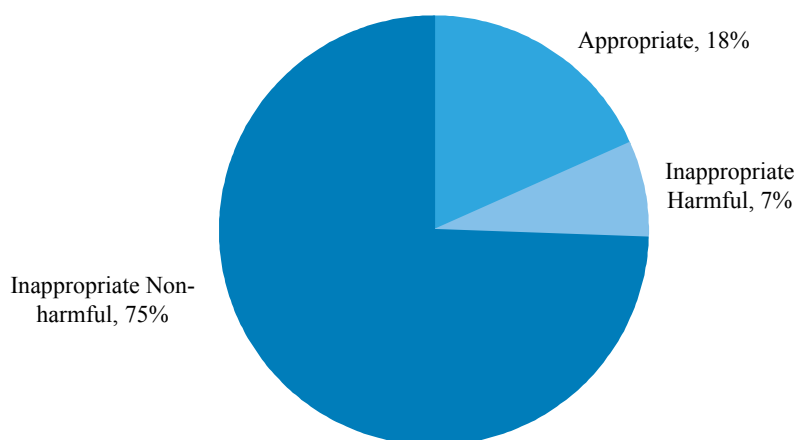


Figure 2.6 Appropriateness of treatment practices by Village Doctors

A review of 89 cases of patients suffering from the common cold and fever, pneumonia or diarrhoea revealed that 40.7% drugs prescribed for pneumonia, 15% prescribed for cold and fever and 14.3% drugs prescribed for diarrhoea were appropriate choices of drugs as recommended by the treatment guidelines (WHO, 2003). Appropriate use of drugs for pneumonia includes prescription of appropriate antibiotics (e.g. erythromycin, azythromycin, amoxicillin, cotrimoxazole, penicillin, etc). The use of oxygen, saline nasal drops and paracetamol were within recommended guidelines for treatment. However, amongst the various medicines, prescribed use of dexamethasone, non-steroidal anti-inflammatory drug (NSAID), prednisolone, and pseudoephedrine

were unnecessary and harmful for the treatment of pneumonia in accordance with the guidelines. According to the guidelines, the prescription of acetaminophen and/or paracetamol is the only appropriate choice of drug for patients diagnosed with the common cold and fever, and ORS, intravenous cholera saline and Zinc Sulphate were the recommended choice of treatment for diarrhoea.

Findings indicated that overall for all three common conditions or diseases, 74.5% of the drugs prescribed were found to be inappropriate but not harmful, 18.4% were considered appropriate and 7.1% were harmful according to the treatment guidelines mentioned above (Bhuiya, 2009). Furthermore, evidence derived from the survey revealed that four (44.4%) of the nine patients with pneumonia, six (10.4%) of the 58 patients diagnosed with cold and fever and three out of the 22 patients with diarrhoea received drugs that were categorized as harmful for the conditions according to the recommendations of the guidelines. In addition, it was evident that none of the patients suffering from pneumonia, diarrhoea or the common cold and fever were prescribed with only the appropriate choice of drugs. These drugs were prescribed in conjunction with other drugs classified as inappropriate. Thus, none of the patients were treated in complete compliance with the standard treatment guidelines.

The excessive number of drugs prescribed for the different ailments indicated that over-prescription of unnecessary and inappropriate drugs is prevalent among the VDs. The adverse consequences of inappropriate drugs used could be serious and may result in increasing microbial resistance, adverse drug reactions and spread of cases of hepatitis.

The study conducted by Bhuiya colleagues (2009) indicated significant deficiencies in the treatment practices of the VDs. As the VDs are a widely consulted and significant source of care amongst the rural population, the above study findings have important policy implications. Irrespective of policy direction, the popularity of the VDs is an established fact. Thus, the establishment of effective regulatory arrangements or appropriate strategies or interventions to improve the performance of these providers is crucial for improvements in the quality of services provided by the VDs. It will be pragmatic to incorporate them with necessary formal training within the healthcare system to avoid harmful practices and promote safe, effective and higher quality care.

This chapter helped catalogue the various issues related to VDs and the context in which these VDs operate. An intervention was designed subsequently which involved training of VDs, the formation of a social franchise called the *ShasthyaSena* network and engagement of local government and leaders to increase accountability of the VDs in the community, as well as to improve the knowledge with which the VDs perform. The detail of the intervention and its impact is provided in subsequent chapters of this book.



Morning walk in Chakaria streets

Source: Andrew Jajja

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CHAPTER

3



Village Doctor in a pharmacy, Chakaria

Source: Andrew Jajja

The *ShasthyaSena* Intervention: An Experiment in Social Franchising

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Abstract

A pilot social franchise, the ShasthyaSena (health soldier) intervention, was implemented in Chakaria with the aim of reducing harmful and inappropriate practices of the village doctors. The ShasthyaSena (SS) intervention was a combination of three component strategies. First, to improve the knowledge and skills of the Village Doctors (VDs), training was provided on appropriate treatment practices and effective use of drug. Second, to increase accountability of the VDs in the community, the local government and leaders were involved in monitoring/overseeing the healthcare related activities of the providers. Third, a network of the VDs named SasthyaSenas, was set up to ensure a minimum standard in treatment and to reduce inappropriate and potentially dangerous use of drugs. All of the 157 VDs practising in the intervention areas/unions of Chakaria HDSS area were invited to participate in the free training. The types of diseases included in the training session were pneumonia, severe and very severe pneumonia, diarrhoea, hepatitis, malaria, tuberculosis, viral fever, and various complications related to labour and delivery. A small booklet with information on what to do and what not to do for eleven common illnesses was distributed as a source of future reference. Around twenty training sessions on treatment guidelines for the relevant common illnesses were offered to eligible VDs. 117 VDs qualified through written examinations as ShasthyaSenas. As members of the SS network, the VDs who qualified as ShasthyaSenas were awarded a crest and were provided stickers/badges containing the SS logo. As members of the SS network, the ShasthyaSenas were expected to gain beneficial spin-off effects such as increased customer volume and improved reputation due to brand affiliation. To promote accountability of the ShasthyaSena within the community, a governing committee was established consisting of 33 members representing various groups of stakeholders, namely the ShasthyaSena, local government, local elites, religious leaders, beneficiaries, civil society, school teachers, health experts and ICDDR,B representatives. The committee was responsible for promoting the ShasthyaSenas within the community, motivating and supporting the them, monitoring their activities and providing feedback on their performance.

Background

This chapter describes the *ShasthyaSena* (health soldier) intervention, a pilot social franchise, designed and implemented in Chakaria with the aim of reducing harmful and inappropriate practices of the village doctors (VDs). The *ShasthyaSena* (SS) intervention involved i) a contractual arrangement implemented with the aim of ensuring established standards in treatment practices of VDs, ii) training of the VDs to improve knowledge of the providers about appropriate treatment practices, and iii) monitoring of health care practices of the VDs by local government and leaders to increase accountability of the providers in the community.

The inadequacies of the formal sector have resulted in a widespread increase of informal providers as an alternative source of care providing basic and essential outpatient health services to millions of poor people in the rural areas (Bhuiya *et al.*, 2009; Oshiname and Brieger, 1992). Evidence from the study in Chakaria confirms that VDs, who work outside a formal or regulated legal framework, are an integral source of healthcare especially in the rural areas (Bhuiya *et al.*, 2009). Close proximity to clients, availability to the community through day and night, sympathetic behaviour, strong established relations within the community, and flexible payment methods have made the VDs a popular source of care (Iqbal *et al.*, 2009; Wahed *et al.*, 2009, Bangladesh Health Watch, 2007; Bloom, 2009). However, study findings confirmed that the VDs provide care of questionable quality with considerable over-prescription of drugs and the prescription of drugs that are mostly inappropriate and at times quite harmful. Regardless of their inappropriate and at times harmful practices, the widespread existence of VDs and their significance as a major contributor of healthcare within the rural communities necessitates the need for an effective regulatory arrangement that improves practice and ensures a minimum standard in the quality of services provided by these practitioners. Without adequate and well functioning alternatives, attempts to remove the VDs from the health market will fail, and millions of poor people will be deprived of their most significant source of healthcare (Bloom, 2009). In this context, a regulatory strategy using a social franchise model with the aim of improving the knowledge of the providers as well as influencing the quality of care provided, was formulated and enacted under the scope of the SS intervention in Chakaria.

A review of informal providers by Cross and McGregor (2009) documents that the existing range of interventions to improve the quality of care offered by informal providers focus around three areas. (1) knowledge: improving the knowledge or information with which VDs treat patients with the aim of increasing the appropriateness of the drugs informal providers dispense; (2) performance and safety: increasing access to the goods and services that the informal providers provide, bettering the safety and affordability of their practices; and (3) accountability: formation of social mechanisms with the intent to regulate the activities of the providers (Travis and Cassels, 2006). An example of a regulatory mechanism would be social franchises which essentially use a reward mechanism for compliance with minimum standards of diagnostic procedure, disease classification, treatment regimens, referral, recording and reporting procedures.

There have been different efforts over the years to train informal healthcare providers to increase service utilization or provide better services. Training VDs to increase their capacity and mainstreaming them into the formal health care programmes through the Tuberculosis programme in Bangladesh resulted in an improvement to 90% treatment rate. This result was achieved without financial incentives (Salim *et al.*, 2006) although VDs were used as DOTs providers. In Vietnam (Chalker, 2003), when private pharmacy personnel were trained and regulatory mechanisms as well as peer influence were used to ensure a secure drug supply, fewer antibiotics and steroids were sold without prescription and more advice was offered to the clients in the intervention group.

Goodman *et al.* (2007) reviewed 16 interventions undertaken to improve malaria-related practices which involved a mixture of training/capacity building, demand generation, quality assurance and facilitation of an enabling environment with medicine sellers. Although evidence was insufficient to show which approaches are superior, these interventions were found to increase rates of appropriate treatment, and medicine sellers were willing to participate. Features of successful interventions included a comprehensive situation analysis of the legal and market environment; buy-in from medicine sellers, community members and government; use of a combination of approaches; and maintenance of training and supervision (Goodman *et al.*, 2007).

Though literature on social franchising is sparse (Koehlmoos, 2009), results indicate that social franchising can “*rapidly expand health coverage to the poor, capture economies of scale and reduce the information asymmetries that often adversely affect quality of care*” (World Bank, 2003). Whilst further studies, especially those of an experimental nature are needed in order to fully understand the effects of social franchising on access to and quality of health care, the current literature indicates the possibility of a quick spread of health services through social franchising to developing countries and a growing interest in social franchising as a “*model for engaging the non-state sector in the provision of health services in developing countries*” (Koehlmoos, 2009).

Social franchising and health

Franchising is a relatively new concept in the social sector. The first generation of social franchise programmes was implemented and funded by USAID to expand markets for clinical family planning services during the early nineties (Montagu, 2002). In general, a social franchise is defined as “*...a franchise system, usually run by a non-governmental organization, which uses the structure of a commercial franchise to achieve social goals*” (Montagu, 2002). Thus social franchising, in contrast to commercial franchising, is aimed towards obtaining social goals rather than profit making.

Social franchising is a contractual relationship between an organization, the franchiser (in most cases non-government organizations) and individual operators, the franchisees. The franchisees agree to provide selected services according to an

overall blueprint devised by the franchiser. By joining the network, the franchisees gain a number of advantages such as professional training, use of the franchiser brand name, subsidized supplies, support services and access to professional advice (Koehlmoos, 2009). Brand affiliation benefits members by increasing consumer volume and improving their reputation (Montagu, 2002). In return, franchisees must maintain a standard quality of services according to franchiser guidelines, subject their activities to monitoring and supervision and, occasionally, pay fixed or profit-share fees (Montagu, 2002; Prata, 2005). North (1990) has emphasized the importance of agreed and enforced rules and associated expectations and behavioural norms in facilitating the effective performance of markets.

Most of the documented social franchises have been implemented in the health sector. Here, franchisees are often existing health practitioners that are recruited for the franchise network. In such instances, the format of the franchise is often a fractional franchise. Fractional franchises are franchised outlets where only some of the goods or services provided by the outlets are part of the branded group (Montagu, 2002). An example of this is the *Surya Clinics* franchised by the *Janani* group in India, where family planning services are provided on a franchised basis at the offices of existing urban doctors (Gopalakrishnan *et al.*, 2000). Social franchising has been used to deliver a wide range of services including DOTS tuberculosis treatment (Lonroth, 2007), sexually transmitted infection management (Peters 2004; WHO and USAID, 2007), primary care, and HIV/AIDS treatment (Perrot, 2006; Montagu *et al.*, 2003).

A recent review by Shah and colleagues of the evidence on the impact of interventions to improve the performance of informal providers emphasizes the important influences of local context and complexity in the types of strategies used and health conditions addressed (Shah N *et al.*, 2009). Although training of informal providers was the most common intervention, in line with the arguments of Elliot *et al.*, (2008) and Cross and MacGregor (2009), there was a general agreement that strategies that had more components to address different dimensions of the health market tended to do better than strategies with a single component.

In line with the arguments presented above, a regulatory strategy, namely the SS intervention using a social franchise model with the aim of improving and influencing the performances of the VDs, was formulated and enacted in Chakaria under the purview of the intervention. The main purpose of the SS intervention was to reduce harmful practices and inappropriate prescription of drugs by the VDs. The intent was to address the poor service quality and lack of accountability of the VDs, and to establish referral linkages facilitating better integration of the VDs into the formal healthcare system. The rationale behind the SS intervention was primarily to influence a large and indigenous group of providers positively through an effective but simple regulatory effort or a well placed intervention.

ShasthyaSena in Chakaria

To reduce the harmful practices of the VDs, the SS intervention was designed and implemented using a combination of three component strategies. The first

was to improve the knowledge and skills of the partially qualified or unqualified providers through training on appropriate treatment practices and effective use of drugs. The second was to increase accountability of the VDs in the community, the local government and involve leaders in monitoring/overseeing the healthcare related activities of the providers. The third was to create a network of the VDs (*ShasthyaSenas*) and establish a regulatory arrangement to ensure a minimum standard in treatment and to reduce inappropriate and potentially dangerous use of drugs. The conceptual framework of the SS intervention is represented in the following diagram:

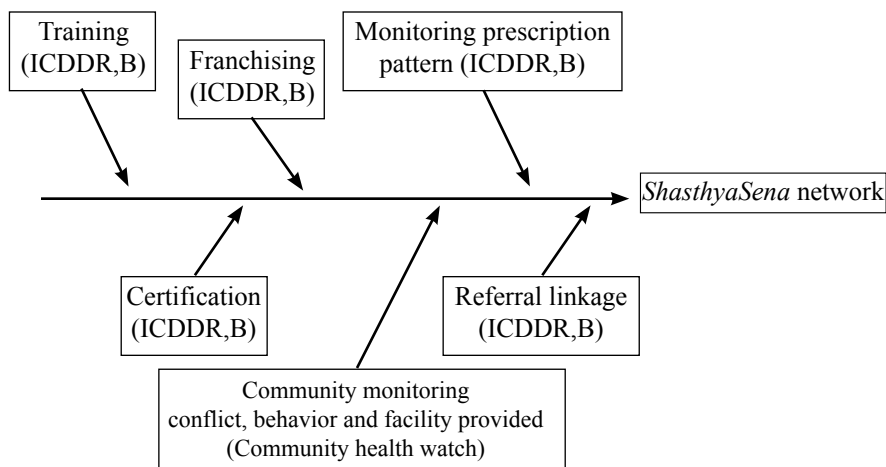


Figure 3.1 *ShasthyaSena* intervention components

The SS intervention was implemented, in January 2009, by ICDDR,B an international health research centre in Dhaka, in collaboration with partners from academic and research institutions throughout the world. The programme was financially supported by the U.K. Department for International Development (DFID) (through Johns Hopkins University, United States) and the Swedish International Development Cooperation Agency's Department for Research Cooperation.

The objective of SS intervention was to test a strategy to engage with the VDs in a social franchise that reduces their harmful medical practices and improves their overall performance. The VDs were effectively linked to the system by utilizing a three-pronged approach aimed to address the poor service quality through training of VDs; to address lack of accountability by establishing a monitoring system for technical and non-technical aspects of service; and to address the quality and standard of services provided by certification and formation of a social franchise network. The SS network pilot programme was launched in 2008 in eight unions of Chakaria *upazila*.

The project met the criteria of a fractional franchise programme, in that the franchiser, ICDDR,B, controlled certain aspects of the network, such as provision of training to

members, management of referrals in case of emergencies, accreditation of the VDs through branding as *ShasthyaSenas*, and assistance in monitoring and supervision of treatment services. However, it did not control the supply or pricing of the drugs or location of treatment or provide any other training except those related to the do's and don'ts regarding a particular list of common illnesses.

Stages of programme implementation

Training

Through a mapping exercise, a comprehensive list of healthcare providers practising allopathic medicine in Chakaria was compiled in 2008. Of the 294 VDs, 157 were practising in the Chakaria HDSS area and 137 in the Chakaria non-HDSS area (table 1.2). All VDs practising in the intervention areas/unions of Chakaria HDSS area were invited to participate in the SS intervention. The VDs who volunteered to partake in the intervention to form the *ShasthyaSena*, were organized and trained with relevant information and motivated in the use of correct know-how on disease treatment and management. In order to join the network, the VDs were required to undergo free training on the DO's and DONTs pertaining to eleven common illnesses. The VDs who attended two or more training sessions and were able to prove their competence by passing the training performance test were branded as *ShasthyaSenas*.

Two qualified physicians from ICDDR,B were involved in the training of VDs, mainly explaining what to do and what not to do when treating patients for eleven common diseases and how to manage referrals of serious cases (name and location of facilities, mode and cost of transport, estimated cost of treatment, estimated duration, telephone directory of contacts were provided). A small booklet, prepared by the ICDDR,B physicians was distributed, as a source of future reference, among the participating VDs. The types of diseases included in the training session were pneumonia, severe and very severe pneumonia, diarrhoea, hepatitis, malaria, tuberculosis, viral fever, and various complications related to labour and delivery. The treatment guidelines had been prepared in complete compliance with the standard treatment guidelines of WHO, UNICEF, and the IMCI guidelines of the government of Bangladesh. A brief description of the treatment guidelines offered in the training programme for the eleven common illnesses and conditions is provided (table 3.2). Refresher trainings were provided every two months, and a phone service with a qualified doctor was set up. In the opinion of the physicians involved in the training of DVs, the majority of the VDs were able to retain a substantial amount of information provided in the training but were unwilling to apply the information as adherence to guidelines would certainly lead to curtailed or reduced income. The VDs were quite keen on acquiring information about new drugs, mainly for the possibilities of enhanced income and financial gains.

Table 3.1 Prescription algorithms for the informal healthcare providers

Symptoms	Disease	Do's	Do's Non-pharmaceutical	Don't's	Refer: where to-
Fever, cough, rapid breathing,	Pneumonia	Give any one of the following:- Amoxicillin Penicillin Azithromycin Erythromycin	1. Keep the baby warm.	Steroid pseudo- ephedrine Anthi- tamine NSAID	Refer: where to-
			2. Sponge the baby with warm water if temperature is above 101°F		
Fever, cough, rapid breathing, chest indrawing (Age <5years)	Severe Pneumonia	Refer	3. Give Paracetamol if temperature is still above 101°F	Steroid pseudo- ephedrine Anthi- tamine NSAID	<i>Upazila</i> Health complex
			4. Give the baby enough food and drink		
Above plus, severe malnutrition Stridor Inability to eat and drink Convulsion Loss of consciousness	Very Severe Disease Pneumonia	Refer	1. Keep the baby warm.	Steroid pseudo- ephedrine Anthi- tamine NSAID	<i>Upazila</i> Health complex
			2. Sponge the baby with warm water if temperature is above 101°F		
			3.		
			4. Give Paracetamol if temperature is still above 101°F		

Table 3.1 Prescription algorithms for the informal healthcare providers (Contd.)

Symptoms	Disease	Do's	Do's Non -pharmaceutical	Don'ts	Refer: where to-
Diarrhoea (more than 3 times in a day or large volume at a time)	Diarrhoea	ORS Zinc Give Intravenous saline if severe dehydration	Increase frequency of breast feeding Drink plenty of water Continue normal diet Coconut water, flattened rice (cheera) water, fluids Safe disposal of watery stool of children	Metronidazole Antibacterial agent Loperamide	<i>Upazila</i> Health complex if severe dehydration
Yellowish eyes tongue, palm, urine	Hepatitis	None	Give enough food and drink	Paracetamol Steroid NSAID	
Fever with marked shivering and intense perspiration, remission relapse of fever at a regular interval	Malaria	Chloroquine + Primaquine If due to vivax Or, Quinine+ Fensidar If due to falciparum	1. Sponge the body with warm water if temperature is above 101°F 2. Give Paracetamol if temperature is still above 101°F Refer to <i>Upazila</i> Health Complex if fever persists even after completion of a full course of medicine, loss of consciousness, and convulsions occur	Steroid NSAID	<i>Upazila</i> Health complex if severe Malaria

Table 3.1 Prescription algorithms for the informal healthcare providers (Contd.)

Symptoms	Disease	Do's	Do's Non -pharmaceutical	Don'ts	Refer: where to-
Long-term fever in the afternoon with coughing for more than 3 weeks, blood in cough, weight loss, swollen lymph nodes	Tuber-culosis	Refer	Give Paracetamol if temperature is still above 101°F	Steroid NSAID	Upazila Health complex or BRAC DOTs center
Sudden fever, cough with many people suffering	Viral Fever	Give Paracetamol if temperature is still above 101°F	1. Sponge the body with warm water if temperature is above 101°F 2. Give Paracetamol if temperature is still above 101°F		
Fulltime pregnancy, labour pain for 12 hours or more without delivery	Obstructed Labour	Refer	Ask for help from local Community SBA	Oxytocin	District Hospital or MCWC or Medical College Hospital
Fulltime pregnancy, bleeding with or without pain	Ante partum Hemorrhage	Refer	Ask for help from local Community SBA	Oxytocin Ergo-metrine	District Hospital or MCWC or Medical College Hospital
Baby delivered, placenta in or out, bleeding 500 cc or more	Post partum Hemorrhage	Refer	1. Ask for help from local Community SBA 2. Give Oxytocin or Misoprostrol 3. Give Intravenous saline	Ergo-metrine	District Hospital or MCWC or Medical College Hospital

Around twenty training sessions on treatment guidelines for the relevant common illnesses was offered to all eligible VDs of the intervention area. Out of the 125 who participated in the initial training, 85 qualified in the evaluation and were awarded a crest as well as other benefits of the SS network. The pass mark for the qualifying examination was 70% and most VDs were successful in achieving at least 80% marks in the qualifying examination. The accreditation of peers encouraged those participants who had not qualified, to once again participate seriously in the training programme for re-evaluation. During the second training an additional 32 participants passed the evaluation process. As members of the SS network, the village doctors who qualified as SS were awarded a crest and were provided stickers/badges containing the SS logo. They were allowed to have signboards and visiting cards indicating their membership of the SS network. Thus a regulatory arrangement involving a pilot social franchise was established through the formation of a cadre of knowledgeable VDs known as *ShasthyaSenas*. No membership fees were charged for the certified SS. A memorandum of understanding outlining the responsibilities and objectives of SS was signed between each joining member and the network. The membership was valid for two years. The SS network members who did not follow the “do’s and don’ts” were considered as non-compliant.

Branding, Promotion and Marketing

As members of the SS network, the VDs who qualified as *ShasthyaSenas* were expected to gain beneficial spin-off effects such as increased consumer volume and improved reputation due to brand affiliation.

The brand “*ShasthyaSena*” was not transferrable or for sale. Only designated persons enlisted by the committee were allowed to use the brand with permission from the chair of the committee. A VDs was branded as a “*ShasthyaSena*”, only after fulfilling the membership criteria. A single member of the committee was not allowed to brand anyone. Members of SS network were not allowed to conduct negative campaigns against other VDs who were not *ShasthyaSena*.

Marketing the SS logo was the responsibility of both ICDDR,B and the governing committee. After the VDs were trained and qualified for membership, their inclusion in the SS network was announced at the *union parishad* (local administrative level of the government) through open meetings where they received the crest. It was envisaged that the SS members will use the crest, logo and their affiliation with ICDDR,B to strengthen their reputation and increase their patient volume. By promoting this brand, members placed themselves apart from non-members by having the necessary formal training to avoid harmful medical practices and promote safe, effective and higher quality care.

Monitoring and evaluation

To promote accountability of the *ShasthyaSena* within the community, a governing committee was established, consisting of 33 members representing various

groups, namely the *ShasthyaSena*, local government, local elites, religious leaders, beneficiaries, civil society, school teachers, health experts and ICDDR,B representatives. The committee was responsible for promoting the *ShasthyaSenas* within the community, motivating and supporting the SS network members, preventing misuse of the SS logo, monitoring the activities of the *ShasthyaSena* and providing feedback on the performance of *ShasthyaSenas*. Based on reports of the committee, the SS network members either retained or lost their membership, thus endorsing accountability/ responsibility of the *ShasthyaSenas* for their actions.

The committee held meetings in the initial phase of the research to discuss the aims of the network, the prerequisites and conditions of joining the network, maintenance of membership, and potential benefits of membership. A document was prepared, outlining these terms, in consultation with the interested health care providers and other stakeholders. During the timeframe of the intervention, 81 focus group discussions (FGDs) at the ward level and 9 FGDs at the union level were organized by the committee members to increase awareness in the community about the SS programme. The committee members have also provided support to the VDs through regular visits, assisting them with issues related to outstanding or pending payments from the community. Feedback from the committee members revealed that the majority of the Union committee members found the task of remembering the numerous trade names for each generic drug quite difficult and complicated; thus, monitoring the performance, particularly the treatment practices of VDs, was limited in nature. The committee members interacted with the community through regular visits and FGDs and were mainly involved in raising awareness of harmful drugs within the community and dealing with issues related to complaints about VDs' attitude and service provision.

The ICDDR,B staff were responsible for conducting FGDs with various stakeholders, conducting surveys at different stages of the project, analyzing the monitoring data and presenting the findings to the *Upazila* Committee. Pre-post surveys were used to assess the impact of the intervention on reduction of harmful medical practices. Regular monitoring of the practices of the members of SS was carried out in the form of exit interviews of patients.

Benefit to patients and community

The intervention was initiated with the expectation that accreditation and training will help the SS network members to prescribe appropriate drugs and refrain from prescribing harmful drugs. A corollary objective was to reduce the associated unnecessary costs to the rural patients of inappropriate prescriptions. Another expectation of the intervention was that the training would lead the *ShasthyaSenas* to increased awareness and recognition of complicated cases and an increase in referrals of complicated cases to the formal health care providers, resulting in better and timely management of complications. To facilitate identification of complicated cases and referrals a qualified ICDDR,B physician served as the referral point over a mobile phone link.

From the community perspective it was envisioned that direct observations of the *ShasthyaSena* treatment practices and regular liaison with the *ShasthyaSena* and the other members of the SS network would result in improved awareness within the community of harmful practices and monitoring of the VDs. In addition, the physicians of ICDDR,B provided consultations over mobile phones in cases of emergencies to all SS members. Therefore, instead of travelling to distant places to contact a qualified practitioner, the people in the community would use the services of the qualified provider via telecommunications when necessary.

Status of the programme

The SS intervention came to an end in June 2010. The impact of the SS pilot programme was assessed using both qualitative and quantitative approaches. The impact of the social franchise on the performance of the VDs has been analysed and the findings are presented in the following chapters, along with the findings from in-depth discussions on the usefulness and acceptability of the intervention from the perspective of different stake holders.

Conclusions

VDs are an important stakeholder in the rural health system of Bangladesh, as they provide care to a large section of the population and cover a wide spectrum of medical conditions. The previous exploratory research carried out in Chakaria highlighted the importance of VDs as a major source of health care. The existence and utilization of the VDs led to the realization that there is a need for exploring pathways of improvement for this alternative source of care.

Concerns about the quality of care provided by VDs has provided the rationale for the *ShasthyaSena* intervention implemented in Chakaria, which organized the informal private practitioners into a cohesive network through a social franchise framework. The aim of the health franchise was to regulate, monitor and enforce adherence to treatment guidelines and improve the quality of care on a wider scale. Regulating quality in the private sector is a challenge for developing countries as the necessary human and financial resources to enforce adequate regulations are not always available. Such health franchises offer promise in expanding access to priority health services by ensuring improvements in the quality of healthcare and protecting the population from fraudulent or harmful practices. The SS intervention utilized the regulatory framework of a social franchise to promote better outcomes of healthcare with a vision of improvements in quality. By improving the performance of the most significant source of care, the VDs, the SS intervention aspired to establish adequate standards of healthcare for the entire rural population of Bangladesh.



Chronic disease club meeting in Chakaria

Source: Andrew Jajja

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CHAPTER

4



Rickshaw ride by the river *Matamuhuri*, Chakaria

Source: Andrew Jajja

Impact of *ShasthyaSena* Intervention

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Abstract

The impact of the ShasthyaSena (SS) intervention was examined from quantitative data collected from intervention and control areas during baseline and endline of the project period..

Data were collected through exit interviews from patients who were seeking care from a random sample of 50 ShasthyaSenas practising in the intervention area in Chakaria. In addition, exit interviews were collected from patients who had sought care from a random sample of 28 VDs outside the unions in Chakaria where the intervention was implemented. The baseline data were collected in 2008 and in the concluding phase of the intervention in 2010. The data were analyzed for three conditions: pneumonia for children <5 years old, diarrhoea and common cold and fever. The data on prescribed drugs were grouped into four categories: i) harmful ii) inappropriate iii) appropriate and iv) a combination of appropriate with inappropriate choice of drugs representing treatment practices containing prescription of unnecessary drugs.

A significant change in the use of appropriate drugs by VDs was observed in the intervention area. There was an increase in appropriate treatment practices in the comparison area as well. An increase in the prescription of harmful drugs was observed in both the intervention and comparison group. However, the increase was smaller for the intervention group. Interestingly, there has been a decline in inappropriate drug choices or prescribing patterns for both areas. Prescriptions containing appropriate choices of drugs in combination with unnecessary or inappropriate drugs decreased in both areas. The proportion of prescriptions containing harmful and inappropriate choices of drugs, either in combination with appropriate drugs or alone, for the selected illnesses decreased from 94.3% to 87.2% in the intervention group and from 92.8% to 89.9% in the control group in the final phase of the intervention.

The increase in harmful practices in both the areas was not an anticipated consequence of the intervention and may be explained by financial as well as other motives. In the future different incentives to prescribe harmful and unnecessary drugs need to be addressed for greater impact.

Introduction

In Bangladesh the state and the formal health sector have failed to adequately meet the health care needs of the people. This allowed the spread of non-professional informal providers as a significant source of health care. Evidence derived from the exploratory baseline survey of 2007 in Chakaria confirms that Village Doctors (VD), are a major source of healthcare in the rural areas, are often providing care of poor quality with considerable over prescription of drugs, and their choice of drugs for treatment are often inappropriate and at times potentially dangerous. The *ShasthyaSena* (SS) intervention was designed to address the problem of lack of knowledge and inappropriate prescribing behaviour among VDs.

Intervention

To reduce the harmful practices of the VDs, the SS intervention used a combination of three strategies: i) to improve the knowledge and skills of the unqualified providers through training; ii) to increase accountability of the VDs through involvement of local leaders in monitoring their healthcare related activities, and iii) to ensure adherence to established standards of treatment and reduce inappropriate and potentially dangerous use of drugs by forming a social franchise of the VDs.

A comprehensive list of healthcare providers practising allopathic medicine in Chakaria was compiled in 2008. Of the 294 VDs, 157 were practising in the Chakaria HDSS area and 137 VDs were practising in the non-HDSS area. The intervention was implemented in the Chakaria HDSS area and all VDs from the intervention area were invited to participate in the SS training programme. VDs who volunteered to participate in the intervention were organized and trained with the relevant information and motivated in the use of correct know-how of disease treatment and management. In order to join the network, the VDs were required to attend a free training on the do's and don'ts pertaining to eleven common illnesses prevailing in the community and to pass the qualifying tests to ensure adequacy in knowledge after the training. The VDs who attended two or more training sessions and were able to prove their competence by passing the training performance test were branded as *ShasthyaSenas*. The VDs from the Chakaria HDSS area formed the intervention group while VDs from non-HDSS areas were the control group (table 4.1).

Table 4.1 Number of village doctors by area

Village doctor characteristics	Group	
	Intervention	Control
Listed in 2008	157	137
Attended one or more training sessions	157	-
Joined SS network	117	-

Methodology

Data from exit interviews from two time periods: a baseline survey in the initial phase of the SS intervention in 2008, and in the final phase of the programme in 2010, were analysed to assess the impact of the intervention on healthcare service provision, performance and trends in practices of the VDs.

Exit interview data were collected from patients who were seeking care from a random sample of 50 *ShasthyaSenas* from the eight unions of the Chakaria HDSS area in which the intervention was implemented. In addition, exit interviews were collected from patients of VDs outside the intervention unions which was called the comparison area. Data were collected for five and seven days for baseline and endline surveys. During the exit interviews of patients, interviewers collected information on the type of ailment and symptoms, and on medicine prescribed with the dosage and the duration for which the medicine was prescribed. Information on the healthcare providers' practices in determining the illness of the patient, documentation of the illness and drugs prescribed, advice given to patients and referral information given were recorded. Data on the duration of illness, the time of patient recovery, and the time when treatment was sought were also collected from follow up surveys.

Data analysis

The data collected in the exit interview questionnaires included the treatment practice of VDs for any illness reported by the respondent. The training provided during the intervention period to the VDs was focused on improving the treatment practices for eleven commonly occurring illnesses in Chakaria including pneumonia, severe pneumonia, diarrhoea, hepatitis, malaria, tuberculosis, viral fever, obstructed labour, blood loss before labour, and blood loss after labour. The data were analyzed for three conditions, pneumonia for children <5 years old, diarrhoea and common cold and fever. For the other diseases: hepatitis, malaria, tuberculosis, obstructed labour, blood loss before labour, and blood loss after labour, the number of patients were too few in numbers for analysis. The data on prescribed drugs were grouped into four categories: i) harmful ii) inappropriate iii) appropriate and iv) appropriate combined with inappropriate choices of drugs, representing treatment practices containing prescription of unnecessary drugs. The harmful category comprised of any prescription that contained harmful drugs irrespective of whether it was combined with appropriate or inappropriate choices of drugs. The data were analysed to show the prevalence of the four categories of prescribing behaviour from the prescriptions provided by the VDs for control and intervention areas at the beginning and end of the intervention.

The category of appropriate drugs was defined as those drugs recommended in the treatment guidelines of WHO, UNICEF and the Government of Bangladesh (Government of Bangladesh, UNICEF and WHO 2003). Appropriate use of drugs for pneumonia includes prescription of appropriate antibiotics (e.g. erythromycin, azithromycin, amoxicillin, cotrimoxazole, penicillin, etc). The use of oxygen, saline nasal drops and paracetamol were within recommended guidelines for treatment. However, among the various medicines, prescribed use of dexamethasone, non-steroidal anti-inflammatory drug (NSAID), prednisolone, and pseudoephedrine were categorized as unnecessary and harmful for the treatment of pneumonia in accordance with the guidelines. The prescription of acetaminophen and/or paracetamol were the only appropriate choices of drugs for patients diagnosed with the common cold and fever, and Oral Rehydration Solution (ORS), intravenous cholera saline and zinc sulphate were the recommended choice of treatment for diarrhoea according to the guideline. Examples of drugs that were categorised as appropriate, inappropriate and harmful choices for the three different health conditions included in the analysis are given below (table 4.2).

Table 4.2 Drugs in the different categories for three different health condition

Drugs	Diseases	Example of Drugs
Appropriate	Cold and viral fever	Analgesics, Acetaminophen
	Pneumonia	Antibiotics, saline nasal drops, analgesics, Acetaminophen
	Diarrhoea	ORS, intravenous saline, zinc sulphate
Inappropriate	Cold and viral fever	Antibiotics
	Pneumonia	Pseudo-ephedrine nasal drops, cough syrup
	Diarrhoea	Antibiotics
Harmful	Cold and viral fever	NSAIDs, Aspirin, steroids,
	Pneumonia	Pseudo-ephedrine, steroids
	Diarrhoea	Loperamide, steroids

Findings

The data revealed that the mean number of drugs prescribed by the *ShasthyaSenas* in the intervention group was quite similar to the providers in the comparison area during baseline and endline. However, there was small decline in the mean number drugs prescribed during endline compared to baseline by the *ShasthyaSenas* (table 4.3). The evidence suggests that there was no significant effect of the intervention on the volume of drugs prescribed. The discrepancy in the total number of prescriptions between pre and post intervention seen in the table is due to both the difference in number of days observation and daily patient load of the selected VDs.

Table 4.3 Drugs prescribed by village doctors for pneumonia (children aged less than 5 years), diarrhoea (all ages), and cold and fever (all ages)

Number of drugs	Intervention group		Control group	
	Pre-Inter-vention	Post-Inter-vention	Pre-Inter-vention	Post-Inter-vention
Mean (SD)	2.8 (1.0)	2.7 (0.9)	2.8 (0.9)	3.0 (1.1)
Minimum	1	1	1	1
Max	6	7	6	9
Total prescriptions (n)	491	1098	167	840
Total days of observation per VD	5	7	5	7
Total VDs	50	50	28	28

We observed an increasing trend of prescribing appropriate drugs in both intervention and control areas (table 4.4). There was a decrease in prescribing inappropriate drugs in both areas. Provision of a mix of inappropriate and appropriate drugs in the same prescription also decreased in both areas. However, proportion of prescriptions with harmful drugs increased in both areas over time although the increase was smaller in the intervention area.

Table 4.4 Prescription pattern by groups, 2008 and 2010

Type of prescription	<i>ShasthyaSena</i>		Non- <i>ShasthyaSena</i>	
	Baseline (2008)	Endline (2010)	Baseline (2008)	Endline (2010)
Appropriate	5.7	12.8	7.2	10.1
Inappropriate	10.0	7.8	11.9	7.4
Harmful	13.4	16.0	13.8	24.5
Appropriate and inappropriate	70.9	63.4	67.1	58.0
Total	100.0	100.0	100.0	100.0
Total prescriptions (n)	491	1098	167	840

When we aggregated three categories of inappropriate prescriptions (inappropriate, harmful, and appropriate and inappropriate) and compared the levels between baseline and endline in intervention and control areas we found that there was a statistically significant decline in the prescription of inappropriate and harmful drugs in the intervention area (figure 4.1). However, such decline was not significant in the control area.

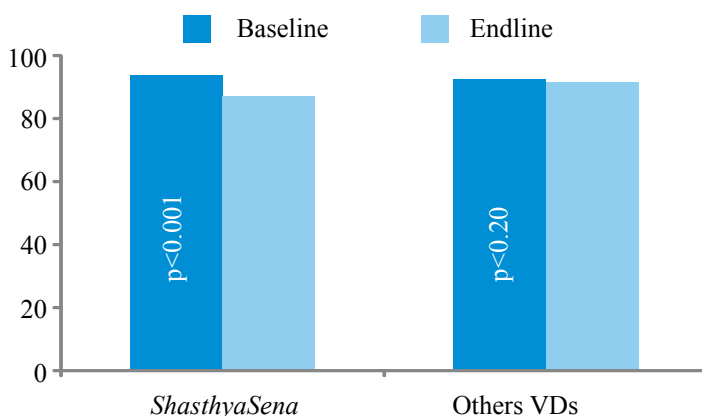


Figure 4.1 Proportion of prescriptions containing inappropriate or harmful drugs by *ShasthyaSenas* and non-*ShasthyaSenas*

Discussion

The finding that the prescription of appropriate choices of drugs has increased among the *ShasthyaSenas* after training is encouraging. On the other hand, a significant decline in prescription of harmful and inappropriate drugs among the *ShasthyaSenas* is also important to note. The increase in appropriate practices was also observed in the comparison group of VDs which might have been the consequences of spill over effects of the intervention. However, the increase in harmful practices in both the areas indicates that the intervention was not able to counter the fact that the livelihoods of VDs depend on the profit from the medicine they are able to sell.

Refraining from prescribing or selling harmful drugs, which are known to have higher mark-up, represents a financial loss for the VDs in the study. The reasons why harmful drugs are prescribed may be explained by the VD's choices to maximise their earning potential. However, if they had been convinced that adhering to treatment guidelines would increase their clientele and therefore, the possibility of earning more than when they prescribe harmful drugs, the impact on the prescription of harmful drugs might have been different.

The incentives to prescribe harmful drugs are also reinforced by the pharmaceutical agents or drug wholesalers, more so for drugs in the harmful category such as steroids, for prescribing drugs from companies that they represent. It is also quite possible that some VDs were not totally convinced or did not realise the consequences of prescribing drugs that are harmful. Others probably did not care about the harmful effects, and were only interested in making a living from the sale of these drugs. We found that the prescription of inappropriate drugs for an illness by the VDs who had participated in the intervention as well as those in the control group had decreased. There may be several reasons for the change in behaviour. The majority of the drugs prescribed in the inappropriate category may not represent a large share of the profits earned by VDs. In other words, the prescription of inappropriate drugs may not have as large a financial incentive as that attached to harmful drugs. However, prescribing a greater number of drugs could have enhanced the reputation of VDs as patients were happier to get more drugs. As a result the prescription of inappropriate drugs continued. It is also possible that some VDs believed that patients will benefit from taking vitamins and other supplements which were counted as inappropriate drug in our study.

A recent review by Shah *et al.* (2009) of the evidence on the impact of interventions to improve the performance of informal providers, demonstrates the important influences of local context and complexity in the types of strategies used and health conditions addressed. Although training of informal providers was the most common intervention in line with the arguments of Elliott *et al.* (2008) and Cross and McGregor (2009), such interventions were relatively ineffective on their own, and worked best when combined with strategies that changed the institutional relationships or incentives for informal providers. There was a general agreement that strategies that had more components to address different dimensions of the health market system tended to do better than strategies with a single component. Thus, the intervention that had been designed to reduce harmful practices of VDs would have fared better if the context within which the VDs practise and earn their living had been addressed, and financial incentives were made a component of the intervention.

Conclusion

Training and franchising the VDs had resulted in a small positive change in their prescription patterns. However, it is important to figure out how to bring about greater and more sustainable changes in the health care delivery through VDs for such interventions to be attractive for wide replication.

To understand the different dimensions of the local context within which the VDs practise and the reasons why the outcome or impact of the intervention was not as anticipated, further information was collected from the VDs, villagers and members of the local union level administration committee. This provides important insights on the reasons for inadequate adherence to the treatment guidelines offered through the training sessions and is discussed in detail in the next chapter.

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CHAPTER

5



Drying of tobacco leaves, Chakaria

Source: Andrew Jajja

Perceptions of *ShasthyaSena*: Talking to VDs, Villagers and Community Leaders

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Abstract

Interviews and Focus Group Discussions with Village Doctors (VDs) revealed that the initiation of the ShasthyaSenas in the community was appreciated as a means of endorsement of their legitimacy as providers of healthcare. The opportunity to benefit from a reputation of adequate skills, fostering trust and confidence in the capabilities of VDs to provide safe and effective care was appreciated by VDs. The VDs thought that the ShasthyaSena (SS) training programme was a good and reliable alternative source of information to that of the drug wholesalers, to learn more about appropriate and effective drugs for various diseases. The feedback from discussions with VDs provides important insights into fundamental issues that dissuade VDs from adhering to treatment guidelines of the training sessions. Most VDs justified the use of certain harmful drugs by mentioning the demand that exists for drugs known as “miracle cures” within the community. Some VDs were apprehensive that refusal to prescribe these drugs, would decrease their popularity within the community. The perceived effect on patient volume because of adherence to guidelines in terms of not providing harmful drugs was mixed. However, most VDs mentioned that to maintain a stable clientele, the VDs do provide the unnecessary and harmful drugs to the people. It is hard for VDs to charge fees for consultations because of the close relationship they share with community members, thus the VDs tend to make a living from selling medicine especially those that have higher profit margins. The existing financial incentives to prescribe unnecessary medicine or over-prescribe certain types of medicine with larger profit margins such as steroids and antibiotics, was identified as one of the major reasons for more frequent as well as inappropriate use and over prescription of the drugs. The union committee members and other community members strongly believed that monitoring should be strengthened and possibility of legal action against VDs should be initiated when harmful drugs are prescribed to ensure proper adherence to guidelines.

This chapter narrates findings from in-depth interviews (IDIs) and focus group discussions (FGDs) carried out with the village doctors (VDs), villagers and the members of the local union-level administration committee (UC) to provide evidence

on the usefulness, relevance and acceptability of the intervention. This covered the training of VDs on the appropriate use of drugs and effective management of eleven common diseases, the network of VDs known as *ShasthyaSenas*, and the involvement of the UC members in monitoring the performance of VDs. The feedback from the interviews/discussions with the different stakeholders provides important insights on the reasons for inadequate adherence to treatment guidelines provided in the training sessions, why the impact of the intervention was not as anticipated, and ways to improve the intervention, and health care practices of the VDs.

The SS intervention was an attempt to rectify the poor quality of services of the VDs through the initiation and establishment of a social franchise, ensuring safety and efficacy of healthcare provision through the guarantee of minimum standard of ethics and expertise of the VDs. However, evidence of the measurable impact of the SS intervention derived from quantitative data indicate that adherence to treatment guidelines provided in the intervention did not meet expectation. Findings from the exit interviews identified three categories of problems with treatment practices of the VDs: i) over prescription of unnecessary drugs, ii) harmful or dangerous practices, and iii) inappropriate choices of drugs. Hence, the rural population were exposed to substantial risks from widespread problems of poor quality, inappropriate, and unnecessarily costly as well as potentially dangerous medical care. IDIs and FGDs with the different stakeholders provide an understanding of the context within which the VDs perform and insights on the usefulness of the intervention as well as the reasons for the uneven impact.

Methodology

Three phases of IDIs and FGDs were carried out with the VDs, villagers and the members of the local union level committee during the time frame of the intervention. In the initial assessment phase of the intervention, a team of 16 researchers visited Chakaria, the intervention area, in January, 2009, to assess the the training sessions. The team consisted of four groups, and each group was responsible for collecting information from two unions of the intervention area through IDIs of at least 4-5 VDs, 4-5 villagers and FGDs with the leaders and members of at least two union level committees.

In August 2009, when the SS intervention was well advanced, the second phase of assessment was carried out by a team of four researchers specialized in qualitative methodology to evaluate the issues related to the SS intervention through IDIs and a FGD with a group of VDs and villagers. ID of 15 *ShasthyaSenas* were collected from three unions of the intervention area. The issues emphasized during IDIs and FGDs conducted in the initial phase and during the intervention were similar.

In September, 2010 a team of four researchers visited three unions within the intervention area of Chakaria to evaluate the impact of the intervention in its final phase. Four FGDs with community members and different stakeholders and six FGDs with the local level administrative committee were undertaken to explore the

views of the different stakeholders on possible explanations for the inadequacy in impact as well as issues related to the intervention.

Village doctors' view of the *ShasthyaSena* intervention

Training

An important factor that influences the outcome of an intervention is the response to or acceptability of the intervention within the targeted population. It was evident from the IDIs that the VDs were quite enthusiastic about the training sessions on treatment guidelines for common illnesses. The initiation of the *ShasthyaSena* (SS) network in the community was embraced by the VDs as a means of endorsement of their legitimacy as providers of healthcare. The opportunity to benefit from a reputation of adequate skills fostering trust and confidence in the capabilities of VDs to provide safe and effective care was also cited by most VDs. The VDs were aware that the level of knowledge with which they provide healthcare services is quite inadequate and limited in scope. They were keen to learn more about appropriate methods of treating different types of illnesses and the SS training programme was accepted as an extremely beneficial opportunity for the VDs. In the words of a VD,

“The people in the community accept me as a doctor and come to me for treatment. With my level of education I would not have been able to get a good job. That is why I decided to become a doctor. Twelve years ago I attended a training given by ICDDR,B. Since then I have been treating people I know. However, I would like to know more and am definitely interested in participating in the training programme. What I do not know now, I can learn from the training programme. I believe my credibility as a doctor will increase.”

A positive attitude towards the programme was observed amongst most VDs based on the common belief that the community, especially the poor, would benefit through the intervention which essentially endorses appropriate treatment practices. As mentioned by a VD,

“The people in this community suffer due to the lack of appropriate healthcare; if we can learn to treat diseases effectively and appropriately, the community will benefit.”

In Bangladesh the health regulatory system of the state or the professional providers' association neither recognises the legitimacy of the VDs nor oversees their performance (Bloom, 2009). As mentioned by a VD:

“similar programmes from the government or other NGO sources do not exist for village doctors. This programme will help us to establish ourselves as proper caregivers within the community”.

There was a common consensus amongst the VDs that the training programme is an unique effort of ICDDR,B.

From the IDIs of VDs it was obvious that the certificate from ICDDR,B for participation in the training programme was a desired object for them. It was thought to be useful for the VDs for endorsement as providers of healthcare. In Bangladesh the informal providers are legally required to have some certification to provide healthcare services in the community. If the VDs are unable to provide any documentation of some level of expertise or training, they often face harassment by local regulatory authorities. As most VDs practise without any proper certification, it was mentioned that the certificate of participation provided by ICDDR,B would be useful as evidence of training. Interestingly, a VD noted:

“A few days back, the police had come to check whether I had any certification which allows me to provide healthcare services to the community. Fortunately, I was able to show him a certificate for a course I had completed on veterinary healthcare. However, the next time it might not be so easy and if I can show the certificate [from ICDDR,B] it will help me. I have participated in the training programme but have not given the examination; as such I do not have the certificate. The patients do not want to see the certificate, the regulatory authorities do. What I learn from the ShasthyaSena training programme will help me to treat patients appropriately and the training certificate can be used for documentation.”

Community recognition of the training

It was mentioned by the VDs that most members of the community are unable to differentiate or assess the type and appropriateness of the qualification of a VD. As reported by a VD,

“the villagers do not know what type of qualifications we have as doctors but opt to choose a provider on the basis of the reputation s/he has in the community of providing proper treatment”.

In the second phase of the survey, as well as in the final survey, some of the VDs said that training as *ShasthyaSenas* has not given them recognition as para-professionals and the value of the training is not commonly understood by the people. It was suggested by VDs that the *ShasthyaSena* concept should be popularized amongst community members through lobby groups promoting safety, reliability and efficacy of *ShasthyaSenas*.

Need for a reliable source of information and training

One of the major sources of information on new drugs is the agents of drug wholesalers who visit the VDs of Chakaria District on a regular basis (Rahman, 2009). The VDs rely on the information provided by these agents on the safety, efficacy and use of drugs. As the drug representatives have a financial interest in persuading the VDs into

prescribing the drugs, the information they provide on safety and appropriateness or efficacy of use of the drug is generally inaccurate or misconstrued for financial gain. The VDs showed interest in the SS training programme as an alternative but reliable source of information to learn more about appropriate and effective drugs that can be prescribed for various diseases.

A VD commented:

“The market is flooded with many different types of drugs of which many are supplied by bad companies. But how are we to know the good from the bad? The medical representatives usually inform us about the efficacy of the drugs. They advise us about the type of illness for which the medicine can be used and also inform us about the drugs that have higher demand and larger profit margins.”

Why harmful drugs are still prescribed

The feedback from discussions with VDs provides important insights into fundamental issues that dissuade VDs from adhering to treatment guidelines offered in the training sessions.

The VDs were able to recall some of the practices identified as harmful such as use of steroids and antihistamine for the treatment of pneumonia and the few appropriate guidelines that they were able to remember were: patients with pneumonia should be referred to proper facilities, medicine is not required to treat jaundice, patients with symptoms of tuberculosis should be advised to have the diagnostic tests done and should refrain from smoking, diarrhoea should be treated with oral rehydration solution (ORS) and severe cases should be treated with intravenous saline. Most VDs were unable to produce the handbook that was given for future reference of treatment guidelines, although they claimed to have it at home. Despite the repeated trainings provided on harmful practices and the fact that VDs were able to recall some of the practices identified as harmful, the VDs were inclined to prescribe drugs that were categorised as harmful such as use of steroids and NSAID. It was evident from the interviews that the most common types of drugs prescribed by the VDs were ranitidine, salbutamol, paracetamol, diclofenac (NSAID), steroids, and antibiotics such as azithromycin, erythromycin, amoxicillin, ciprofloxacin, cephradine, metronidazole.

Most VDs justified the use of certain harmful drugs by mentioning the demand that exists for these drugs within the community. It was suggested that some drugs are perceived to be ‘miracle cures’ by the people of the community, capable of providing instant relief; for example steroids for rapid fever reduction,. *“What can we do? They ask for the medicine.”* was the most common answer given to rationalise the provision of these harmful drugs.

“Patients ask for ‘Nice’ specifically, a drug which provides rapid relief from headaches. The Doctors (ICDDR,B) have mentioned repeatedly that

Nice is harmful for patients. But patients want the drug. What can I do when patients ask for the drug specifically? I usually give him the drug s/he requests for.”

In the village community there are many more examples of demand for unnecessary drugs. The VDs disclosed that a demand for steroids exist in the community especially among women who take steroids with the intention to alter their physical appearance by increasing their body weight, as in the rural areas overweight is considered a positive attribute.

“Most women ask for steroids to become plumper and to look more beautiful. They ask for Decason and Piractin. When they ask for the drug, I usually give them the harmful medicine.”

Another example of inappropriate practice includes the infusions of glucose saline and vitamin B complex provided by the VDs to the men and women who work in tobacco fields and who usually come to the VDs with the common belief that infusions will help reduce the increase in body temperature that they experience from working in the fields. In addition, a common belief prevails in the villages that vitamin injections are useful in reducing aches and pain.

Other than for unwarranted demand, the VDs were observed to over-prescribe in addition to prescribe certain drugs unnecessarily. During the interviews with VDs, the researchers observed many examples of inappropriate treatment practices, for example, an infant with fever was prescribed with antibiotics (amoxicillin), vitamins and salbutamol, although there were no signs of respiratory distress.

Some VDs were apprehensive that if they adhere to guidelines and refuse to prescribe the drugs that are considered as ‘miracle cures’, the strong competition among VDs will drive them out of the market as some others might actually provide the preferred drugs. The VDs were afraid that refusal to provide the drugs considered to provide instant cures would decrease their popularity within the community. A VD said:

“When patients come to us they expect some sort of treatment which has to do with prescribing medicine. If we give advice alone as treatment we will lose our reputation within the community as an effective practitioner.”

A few VDs were not willing to accept that prescribing drugs unnecessarily is harmful, they argument they put forth in favour of prescribing harmful drugs was “*qualified MBBS doctors prescribe these drugs, so how can it be that harmful?*”

Another VD commented:

“I usually abide by the instructions regarding the do’s and don’ts. However, patients are impatient and quite often demand quick recovery. When they have fever they ask for steroids. If I do not comply, they are

annoyed and eventually get it from other providers. So why should I lose my customer?"

The perceived effect on patient volume because of adherence to guidelines in terms of not providing harmful drugs was mixed. A few VDs stated that as patients have greater confidence in them as care providers their refusal to provide the harmful drugs has not affected their patient volume negatively. Some VDs have said that the refusal to provide the steroids have harmed their practice as patients search for alternative sources of care. However, some have mentioned that if the harmful effects are explained adequately, the villagers usually accept their word and are able to maintain their practice because of the confidence that people have in them.

In the final round of IDIs and FGDs the majority of the VDs have mentioned with confidence that they do not prescribe harmful drugs and that they abide by the treatment guidelines provided in the training. However, they confirmed that some patients were only interested in instant cures and a demand for harmful drugs exists within the community. A few VDs mentioned that although patients demand steroids for instant relief and are extremely annoyed when the drugs are not provided, some patients do understand when an explanation is given about the harm involved. However, most VDs said that to maintain a stable clientele, they do provide the unnecessary and harmful drugs to the people.

Difficulties in introducing fees and financial incentives to over-prescribe

Informal providers and drug sellers should be viewed as people managing a small business at the fringes of the organized sector. VDs are generally people who have lived in the community for most of their lives. The close relationship that they share with community members makes it hard for them to ask for fees for the treatment they provide. As VDs are unable to charge for consultations they tend to make a living from selling medicine especially those that have higher profit margins. As mentioned by a VD:

"I usually buy all medicine from a pharmacy in Chakaria municipality area. I generally keep a profit margin of 2-3 taka per medicine; for instance I buy each bottle of 'moxacil' for 42 taka and I usually sell it for 45 taka. As a village doctor, I cannot charge fees for the service I am providing. If people are unable to pay, I allow them to pay later.... People generally ask for medicine manufactured by reputable companies but also complain if the prices are high."

The existing financial incentive to prescribe unnecessary medicine or over-prescribe certain types of medicine with larger profit margins such as steroids and antibiotics was identified as one of the major reasons for more frequent as well as inappropriate use and over-prescription of the drugs. One VD confirmed that:

"Selling steroids is even more profitable than selling antibiotics. The profit margin for these drugs is more, almost double of what it costs. My livelihood depends on the profit I make from selling medicine."

Thus, interventions that impinge on the very means of subsistence of VDs are highly unlikely to have the desired or intended outcome. It is highly unlikely that the VDs will follow advice that results in substantial losses of income (Bloom, 2009). The priority for these providers is to maintain their market position and their livelihood, thus, if they feel that their reputation or market share is at stake or in any way compromised because of a change in their prescribing pattern, they will resist complying to the regulations of the social franchise. On the other hand, if they believe that adhering to guidelines will help them to establish themselves as safer or more effective providers in the eyes of the people they may refrain from prescribing dangerous and unnecessary drugs for the sake of a better reputation and gains from an increased volume of patients. Awareness of dangerous practices and good quality services within the community may appease the qualms of the VDs about losing their market share. Interventions that intend to improve the performance of VDs should take into account the context within which the VDs act. The financial factor is a significant component affecting the outcome of an intervention and should be included in the design of strategies to reduce harm and improve treatment practices in Bangladesh.

Most VDs have confirmed that it would be difficult for them to introduce fees for the services they provide as an alternative means of income thus negating the need for prescribing unnecessary and sometimes harmful drugs. They held a common belief that asking for consultation fees from people with whom they have lived for most of their lives would be unacceptable. The VDs are a part of the community, which makes it difficult for them to ask for fees as they share quite close relationships with most of their patients. They are afraid that if they charge fees the members of the community would find it highly inappropriate which will have a detrimental effect on their image or reputation. As a VD commented:

“If I could have charged fees, I could have charged less for the medicine I sell. I have lived in the community for so long that the patients who come to me are all quite well known to me, so how can I ask for payment of fees? People will think badly of me and they are not going to pay me for treating them. They will pay the paramedic who comes from outside the village but will not pay me. What other option do I have than to make a profit from selling medicine?”

However, as another VD mentioned,

“If we all decide to introduce a fee and fix an amount to charge, we might be able to establish a system of payment for our services, but then each and every one of us has to stick to the decision. If some charge and some do not then it becomes a problem.”

In this context the VDs have mentioned that if through a common agreement they could have charged user fees for services then the financial gain from selling harmful drugs would have lost its appeal to most VDs. The VDs emphasized the importance of

strengthening the collective influence of the *ShasthyaSenas* within an organizational structure of an association reinforcing their ‘voice’ or bargaining power within the community. The VDs were interested in establishing a local association of VDs as it would help them to initiate user fees, ensure continuation/sustainability of the *ShasthyaSenas* in the community and provide protection against rent seeking by local government officials and manipulation of the medical representatives of the pharmaceutical companies.

Complexities of financial incentives

The VDs mentioned that although their main earning comes from the sale of medicine, the majority of patients are unable to pay for the medicine and in most cases are allowed to defer payment. For instance a woman who had come to a VD without money was given the required medicine and was told to send her husband. However, the husband did not come to pay for the medicine. As mentioned by the VDs an alternative source of their income was the commission that pharmaceutical companies are known to provide for prescribing their drugs. One of the major problems corrupting the system as identified by the VDs themselves was the higher financial incentives that the less reputable pharmaceutical companies are known to provide to the VDs for prescribing their medicine. A VD mentioned that the pharmaceutical companies sometimes give them as much as 10% of the price of drugs they are able to sell as incentive. As mentioned by a VD,

“Most of the MBBS doctors in Chakaria receive about Taka 2000-5000 (US\$ 22 -50) per month from the pharmaceutical companies.”

The companies are also known to have given televisions, refrigerators and other similar incentives to the VDs for prescribing their medicine. It was also mentioned that they are invited to meetings annually where they receive free gifts.

“The people from the company (pharmaceutical company) come from Chakaria with the medicine. They give us advice on which medicine to prescribe, which has the most demand and also the most profit. For example, if we sell Ranitidine, the profit is high and we are able to sell quite a lot of the medicine.”

Findings from the interviews confirm that VDs generally do not refer complicated cases to higher public facilities. Whether it is to protect their market share or because the villagers are actually unable to afford the expenses required for public healthcare facilities cannot be determined from the current research. However, most VDs have mentioned lack of financial resources of patients as the main reason for not referring patients to public facilities. A VD from Paschim Konakhali, a union where most of the people are poor and landless farmers/ agricultural workers, said:

“Eighty percent of the patients are poor. The Thana Health Complex is quite a distance from here. It takes two hours by rickshaw (pull-cart) to reach the THC. In addition, the physicians are not available most of the

time at the public facilities. Qualified physicians do not practise in this area. So where should I refer patients to? Most of the villagers are landless and poor daily wage earners who earn 150 taka per day. The landowners and the rich live in a different area. People are able to get treatment from a village doctor for approximately 100 taka, but if they had gone to Chakaria for treatment, the approximate expense would have been 500 taka, involving travelling expenses and the cost of the medicine.”

However, the accessibility of public facilities is not the same for all areas of Chakaria. In Morongona, a village in Konakhali, approximately 18 VDs, practise side by side in the same area. There are no qualified MBBS doctors in the area. Access to the THC, which is approximately nine kilometres from the village, is not that difficult as it takes about Taka 20-25 to travel to the THC in the pickup vans and other forms of transport (*Chaader Gari*) that are readily available.

In the second and final survey, the VDs were found to be especially appreciative about the referral linkages that have been established through the SS intervention with the formal providers of ICDDR,B via cell phone. In the second survey, after the intervention was well underway, the VDs said:

“the fact that we are able to contact the physicians at ICDDR,B via cell-phones is very helpful for the treatment of difficult cases. The easier access to qualified physicians has helped us to provide appropriate treatment, necessary referral linkage and has also increased our reliability as effective providers.”

Suggestions from VDs for improvement of the training programme

In the initial phase quite a few VDs have voiced a strong need for more frequent training sessions. The VDs thought that training should be provided more frequently, and should be more comprehensive, i.e. include a wider range of diseases to increase its usefulness. A VD said:

“If the training sessions are more frequent, regular discussions with the instructor of the training session would help us to get treatment advice on diseases that are not included in the training material on a timely manner. For instance, a woman had come to me earlier with skin lesions, but as I am not aware of the treatment required I was not able to help her. As the training sessions are not too frequent, I was not able to consult a trainer for advice and provide the necessary treatment at that time.”

To improve the accessibility of the training sessions, it was suggested that the sessions be held at the union level, the time for the training sessions (11am -3pm) should not coincide with the time during which the patients usually visit the VDs (before 10 am and after 3 pm). It was suggested that the training should be provided to smaller groups on separate days.

An interesting suggestion based on the comments of the VDs should be noted here, it was proposed that a network be established in which each VD is linked to a qualified physician. Instead of travelling to distant places to contact a qualified practitioner, the people in the community can contact the VDs who in turn can contact a qualified physician for advice (via telecommunications) when necessary. The VDs can act as reliable referral points thus, increasing the chances of provision of appropriate treatment. If the villagers provide fees for the consultation received, which should be less than the actual fees and travelling costs incurred, the money can be split between the VD for being an intermediary and the qualified practitioner for providing the advice. The financial incentive for VDs to prescribe unnecessary drugs will be curtailed. In addition the VDs will still be able to retain their business of selling drugs, however in this case, only necessary and appropriate medicine will be prescribed for the villagers.

The VDs were apprehensive of the involvement of the union committee members in monitoring their treatment practices. However, it was mentioned that the formation of *ShasthyaSenas* will strengthen their voice collectively and give them necessary bargaining power within the community. As a group they will have the authority to reinforce their rights, establish fees as well as promote themselves as crucial actors in the healthcare sector.

Views of the elected representatives

The initial phase of FGDs with the UC members revealed a consensus amongst the committee members that the VDs are known to provide inappropriate treatment which at times is harmful for patients. In the discussion the members emphasised the need for monitoring the treatment practices of the VDs.

“We need a monitoring committee in every ward. The committee will watch over village doctors and supervise whether they are providing proper treatment, whether they are over-prescribing or prescribing harmful drugs.”

The members of the committee did not feel that the added responsibility of monitoring VDs will be too much of a burden as the community will benefit from the process. They suggested that the VDs should maintain records of the treatment that they provide to the patients and it was suggested that if maintained properly this would be a helpful monitoring tool. However, the union committee members felt that they did not have the knowledge on how to judge appropriateness of treatment and as such they should also be made aware of harmful, inappropriate, and appropriate treatment practices.

The members suggested that the VDs should be rewarded, with bonuses, or recognition for adherence to the treatment guidelines and providing appropriate treatment. The UC members recognised the importance of rewarding the VDs who adhered to guidelines in the presence of community members as a means of encouragement as well as a process of eliminating harmful practices amongst VDs. However, the

union committee members showed interest in paying for the services of qualified SBAs, physicians and paramedics who would provide contractual services to the community on a regular basis. The chairman of a *Union Parishad* said:

“We cannot depend on village doctors alone. We need qualified MBBS doctors for the community.”

In this context the members mentioned that the government had allotted some funds at the union level and the committee members showed willingness to accept guidance for proper utilization of the funds.

The union committee members were very supportive of the programme and were extremely willing to participate in the process of developing a conscientious committee that would work vigilantly to increase awareness in the community and also ensure a certain standard in treatment practices. The members suggested that the inclusion of the influential people such as teachers of schools, *Madrasas* (religious school) and the *Imams* of the mosques will be beneficial and helpful in the effective dissemination of knowledge of disease conditions as well as appropriate measures to be taken in the community.

The UC members mentioned that the VDs are known to sell medicine after the expiration dates which threaten the well being of the people in the community. In addition, many of VDs promote the sale of low quality drugs because of the financial incentives provided by pharmaceutical companies which are not so reputable or trustworthy. The UC members suggested that direct observation of the VDs treatment practices, and regular liaison with the VDs as well as the other members of the SS network will facilitate effective awareness within the community of harmful practices and monitoring of the VDs. The UC members also mentioned that awareness of the harmful effects of certain drugs should be raised amongst the community members, especially the less educated people.

In the final phase of the intervention, FGDs with the local monitoring committee, revealed that some members believed that

“the village doctors who were not a part of the ShasthyaSena network were more inclined to prescribe harmful drugs than the ShasthyaSenas themselves. The village doctors who are not ShasthyaSenas are able to amass a lot of profit from prescribing unnecessary antibiotics and prescribing low quality drugs of less reputable pharmaceutical companies. Conversely, we have heard that the ShasthyaSenas are unable to earn as much as the other village doctors”.

However, one UC member noted that:

“There are some ShasthyaSenas who by virtue of the training programme have come to know about more drugs and are able to prescribe many more drugs than they did before.”

The UC members and the other stakeholders strongly believe that monitoring should be strengthened and if necessary the power to take legal action when harmful drugs are prescribed against VDs would ensure adherence to guidelines.

The UC members confirmed that demand for instant cures and immediate relief existed in the community, however it was also mentioned that,

“most rural people are uneducated and do not have the ability to judge the appropriateness of drugs.”

As mentioned by a member,

“when the village doctors prescribe inappropriate or harmful drugs, we are unable to reprimand the village doctors as they are a part of the community and we have a very close relationship with them.”

Another member believed that *“None of the interventions will work unless the authorities are involved and regulatory or legal actions are taken when the village doctors digress from appropriate practices.”* Some members held the opinion that the VDs are there to make money from treating patients and are not really concerned about treating patients properly, *“The village doctors scare patients into believing that they need all the drugs prescribed, which are mostly unnecessary, for very common and simple ailments.”*

Views of the community members

From the discussions with the people of the community, it was evident that most villagers felt that they had limited access to qualified physicians. The costs incurred in seeking care from a qualified doctor, especially the travel expenses, were reported to be quite substantial. Some members of the rural community were aware that the VDs provide inappropriate treatment and also overprescribe because of their financial motives to do so and are not exactly the most reliable source of treatment. However, they seek treatment from the VDs as they are more accessible. The VD is a member of the community and is therefore, one of them. The community members are usually not aware of the type of qualifications that the VDs have. They generally seek treatment advice from VDs who have been recommended by friends, relatives or neighbours.

In the final phase of the intervention the FGDs were informative and provided useful feedback on the impact of the intervention. However, the acceptance and views within the community members about the *ShasthyaSenas* was found to be a mixture of appreciation as well as dejection. A member of the community said:

“I believe that village doctors have improved a lot through the training programme as they do not prescribe high powered drugs as frequently as before. After the training they think before they prescribe drugs.”

Another member provided positive feedback on the *ShasthyaSenas*:

“When I see the ShasthyaSena crest in a village doctors chamber, I trust them as more competent practitioners as they have gone through a training programme and have earned the crest by qualifying for it and are, therefore, more able to provide primary care for some diseases.”

However some thought the training of VDs is a futile attempt as most VDs continue to prescribe harmful drugs.

“The people in the community have not benefited as the village doctors are more inclined to look after their financial gains, they are not interested in serving the community.”

A villager mentioned that the extent to which VDs are interested in their financial gains is sometimes quite disheartening:

“village doctors prescribe unnecessary and at times harmful drugs promoted by bad companies for simple diseases but charge as much as it would have cost for drugs of better companies.”

Another member from the community said:

“I have seen that ICDDR,B has provided training to a village doctor and I have also attended an inaugural ceremony of the ShasthyaSenas, but in reality I have not seen much change in the practices of the VD.”

The village community strongly believed that to ensure adherence to guidelines and refrain from prescribing harmful drugs, the local authority and the police should if necessary take legal action against those VDs who prescribe inappropriately. They should not be allowed to keep in their stores prescription drugs that should be dispensed by practitioners with proper accreditation. *“Antibiotics and steroids should be dispensed by registered doctors alone.”* The village community suggested that there should be rules to regulate the type of drugs that the VDs are allowed to keep and they should be denied access to or prohibited from keeping harmful drugs on their shelves. The community felt strongly about strengthening the Thana Health Complex, Family Welfare Centre and other government facilities at the local level.

The Committee members and local authorities should have more power vested in them to regulate the treatment practices of the VDs. In addition, the community should be made more aware of the consequences of harmful drugs usually prescribed by the VDs through announcements made at the mosques after Friday prayers as well as discussion sessions held at the community level. The VDs should also be encouraged to provide services that meet the needs of the community.

Discussion

In Chakaria, as in most other rural areas of Bangladesh, there are shortages of qualified healthcare providers. The VDs are thus the alternative source for healthcare sought

by the people of the community. It was evident that people were aware that the VDs provide care that is not always optimal or the appropriate choice of care (Sharmin et al 2009). However, as most rural people are poor, the financial constraints of seeking appropriate care are at times difficult to overcome. Furthermore the distance and time needed to travel to public health facilities are additional challenges that the rural poor face. In terms of accessibility VDs are always there around the corner, the medicine that they prescribe is usually tailored to the need as well as availability of resources of the patient. A villager perceives a VD as a provider who understands the limitations of the people in the community, who does not charge any fees and is able to prescribe medicine that is affordable, and if necessary prescribes partial doses of the medicine needed.

However, the VD has to make a living from the whole process of providing healthcare to the people. The livelihood of the VD has to be an economically viable option. As a person from the community the VD has concerns about charging fees for the services they provide. Ingeniously they have created an in-built mechanism through which they are able to earn their living through the sale of medicine. Thus, financial incentives exist for over-prescription and inappropriate use of certain drugs. Furthermore to justify their harmful practices, the informal providers claim that demand for certain harmful drugs which are known as “miracle cures” prevails within the community. Apparently, the profit made from the sale of these harmful drugs is quite significant. Thus, training the VDs, who are unable to charge fees for the treatment they provide, and instructing them not to prescribe drugs that have a higher mark-up but long term harmful effects is probably not going to be a successful endeavour unless the financial context within which the VDs perform is addressed and the earnings of the VDs are ensured.

Most VDs have mentioned in the interviews and discussions that demand for harmful drugs exists within the community. VDs have put forward the arguments that demand for certain drugs prevail in the community to justify prescriptions of harmful drugs. Informal providers repeatedly inform researchers that the demands of their customers determine their sales practice but researchers warn that vendors often choose to blame consumers for their own profit maximising behaviour (Cross *et al.*, 2009). However, specific instances were cited for which unnecessary or harmful drugs were demanded by the people of the community. Patients are often impatient seeking quick recovery which triggers demand for harmful drugs or “miracle cures”. Furthermore, one of the major sources of information on new drugs is the agents of drug wholesalers who visit the VDs of Chakaria District on a regular basis (Rahman, 2009). The VDs rely on the information provided by representatives of pharmaceutical companies on the safety, efficacy and use of drugs. However, as the drug representatives have conflicting interests or financial gain in persuading the VDs into prescribing the drugs that they represent, the information they provide on safety and appropriateness or efficacy of use of the drug is generally inaccurate or misconstrued for financial gain. Furthermore, the drug companies provide financial incentives to the VDs, encouraging the prescription of drugs that give a higher profit margin but are not necessarily appropriate, resulting in further inappropriate and harmful use of drugs.



Road by the river bank, Chakaria

Source: Andrew Jajja

It was also apparent that the awareness of the consequences of harmful drugs was not adequate within the community. It is strongly believed that informational inputs or awareness raising initiatives in the community can act as a corrective measure, redressing erroneous beliefs as well as asymmetries in information between the provider and the consumer. Furthermore, to guarantee competence of VDs in providing safe and appropriate healthcare, it has been suggested that accountability of the VDs should be ensured through legal or social mechanisms that aim to regulate their activities. It was suggested that higher authorities from the *upazila* level as well as local regulatory authorities, should be involved in monitoring, and if necessary, legal action should be taken to ensure appropriate treatment practices.

Evidence suggests that the SS training led to increased referrals for complicated cases through referral linkages established with formal healthcare providers of ICDDR,B. Physicians at ICDDR,B provided consultations over the phone in case of emergencies to all SS members. In other words, a network was established where the VDs were linked to a qualified physician of ICDDR,B. Instead of travelling to distant places to contact a qualified practitioner, the people in the community contacted the VDs who, in turn, got in touch with a qualified physician for advice via telecommunications when necessary. Through this referral linkage, the chances of provision of appropriate treatment increased. The basic role of ICDDR,B was to provide training, motivate VDs to refrain from harmful and inappropriate practices, and act as a referral point serving the community by providing useful information for complicated cases. It was evident that through this linkage network, the community had greater access to qualified physicians and chances of receiving adequate treatment in addition to other factors such as accessibility, behaviour and lower costs. The established referral linkage of the VDs with the formal practitioners of ICDDR,B is a positive outcome of the research and it provides an example of a network that should be explored on a larger scale basis.

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CHAPTER 6



A typical house in rural Chakaria

Source: Andrew Jajja

Conclusions

Abbas Bhuiya, Sabrina Rasheed and Tania Wahed

The idea of engaging with the village doctors (VDs) arose from the knowledge that VDs were a major health care provider for the rural people specially the poor and that these VDs had little knowledge and training about appropriate prescription for different health conditions that they treated. Previous studies have shown that VDs often provided unnecessary and harmful drugs to their patients. Based on these concerns *ShasthyaSena* (SS) intervention was designed improve the prescription pattern of the VDs. The intervention aimed to a) educate and train the VDs to improve their quality of care for 11 major illnesses; b) enforce minimum standards of treatment practices and referral through the establishment of a social franchise, namely the network of SS; and c) make VDs accountable to the community through a regulatory framework of monitoring their practices by community members which was linked to the renewal of franchise membership.

Although the intervention expected to improve the prescription pattern of the *ShasthyaSenas*, the quantitative evaluation showed limited success in terms of prescribing inappropriate and harmful drugs among those who were trained to be part of the SS network. The qualitative evaluation pointed to some strengths and weaknesses of the programme as well as some important aspects of the problem of that need to be considered in the future interventions if better outcome is to be expected. The programme was successful in engaging with the VDs. The training for appropriate prescription for common illnesses were appreciated by the VDs and the referral linkage to a formal ICDDR,B doctor was very popular. The SS network members were happy with the crests and training certificates that gave them more legitimacy in the eyes of the community than they had before. The SS intervention was also favourably viewed by community members. However, the community group that monitored the SS network members did not feel that they could enforce their judgement on the SS network members. As a result the SS network members did not face the social pressure that was meant to make them accountable to their communities.

There were some important contextual issues that were related to the problem of inappropriate prescription pattern of the VDs but not addressed by the SS intervention. First, as VDs were making a living from selling drugs they were likely to lose a substantial amount of revenue if they provided appropriate drugs. It was evident from

the interviews/discussions with the different stakeholders that financial incentive was one of the main reasons for poor adherence to treatment guidelines. VDs are unable to charge consultation fees and their earnings are dependent on the mark-up they retain from the sale of medicine. The SS intervention did not have any way to compensate the VDs for their lack of earning. Second, it was quite clear from the conversations with the SS network members that some of the expensive and potentially harmful drugs, such as steroids, were in great demand among the community members as they tended to offer quick remission from illnesses. The indiscriminate use of such drugs was the norm for VDs in the community. If the SS network members refrained from using such drugs, the patients were more likely to go the VDs that provided such drugs. The lack of awareness and high demand for drugs among the community members was probably partially responsible for the smaller than expected change in the prescription pattern of the SS network members when compared to the other VDs. The SS intervention did not have any component for raising awareness of community members about the harmful effects of indiscriminate use of drugs that could have helped the SS network members to adhere to treatment guideline.

Based on the experience of implementing the SS intervention there are some important insights for future design of interventions to improve VD prescription patterns. The evidence from the research revealed that an alternative but significant source of information is the agents of drug wholesalers. The VDs rely on the information provided by representatives of the wholesalers on the safety, efficacy and use of drugs. As the drug representatives have a strong financial interest in persuading the VDs to buy the drugs, the information they provide on use of the drug is not necessarily trustworthy. Thus future interventions should include capacity development efforts for the VDs to raise their competence. Efforts should be made to connect the VDs to formal doctors who can be sources of capacity development, referral and oversight for the VDs. The findings from SS intervention showed that both training referral linkage were popular with the VDs.

Special note should be taken of the market mechanisms on both demand and supply side factors that influenced the VD prescription patterns. It is important to learn the way in which the representatives of drug wholesalers are able to influence or manoeuvre the VDs into prescribing drugs that have a higher profit margin. It is also important to learn from other experiences of engaging informal health care providers that had provisions for financial compensation for VDs for the loss incurred due to appropriate prescriptions. It is possible that if the VDs can be effectively linked to formal doctors in a way so that VDs earn some money from appropriate referral, some of the financial disincentives for appropriate prescription maybe removed. Future programmes need to take into account the pressure from users for VDs to prescribe unnecessary and harmful drugs as they are believed by patients to be efficacious. It would be important to create awareness among patients about the harmful effect of inappropriate prescription. Increased patient awareness will create the platform for changing VD's behaviour.

In developing countries, as access to healthcare facilities is constrained, it is important to focus on local solutions to providing competent health care (Hausmann Muela, 2003). The global community often prescribes task shifting to low skilled personnel, lay workers and volunteers and consequently, rapid extension of coverage for the rural areas of the poorest countries (WHO, 2008). In Bangladesh, the dearth of skilled healthcare professionals, chronic absenteeism, shortages of medicine

and equipment, informal fees and neglect and maltreatment of poor patients limit access to public healthcare services (Bangladesh Health Watch, 2008; Chaudhury and Hammer, 2004). The VDs are providers who have established a niche within the healthcare market and are a significant source of healthcare for the Bangladeshi population (Ahmed, 1993; Bangladesh Health Watch, 2008; Bhuiya 2009). In the present scenario, the inclusion of the VDs in an integrated system that ensures a minimum standard of treatment is a rational and imperative choice of action.

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- Upazila Committee Member



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