A CASE STUDY OF THE YESHASVINI HEALTH INSURANCE SCHEME FOR THE RURAL POOR IN INDIA*

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ABSTRACT

This is a case study of the Yeshasvini Health Insurance Scheme for rural farmers and peasants in Karnataka, which has a potential to be a model for developing countries in providing a modicum of health security for their citizens. We describe the origins and functioning of the scheme, analyze its performance to-date, and find support for its transferability to several other states in India. We also identify the institutional conditions that influence success of a scheme of this kind, and discuss some of the critical problems that occurred during the scheme's first year of operations.

INTRODUCTION

This is a case study of the Yeshasvini Health Insurance Scheme introduced throughout rural Karnataka in 2003. In its first year of operation, the scheme covered 1.6 million rural farmers and peasants dispersed throughout Karnataka

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state. For a premium payment of only Rs 5 per month or Rs 60 per year, participants are covered for all surgical interventions, major or minor, and for outpatient services (OPD) at a network of private hospitals. At the end of the first year of operations in June 2004, 9,039 surgeries had been performed, and 35,814 patients had received outpatient consulting services. A significant proportion of total surgeries were classified as "major" (e.g., cardiac surgery) without which the patient would not have survived. The Yeshasvini scheme (hereinafter referred to as "the scheme") is the world's largest health insurance scheme for the rural poor. Given its remarkable success in the first year of operations, the increased number of people covered in its second year (2.2 million), and replications and extensions of the scheme in Gujarat and in other parts of Karnataka, the scheme is already becoming an important model of health insurance for disadvantaged populations within and outside of India.

The aim of this article is to document and analyze the Yeshasvini case. It has not been studied previously. As the scheme breaks new ground on several different fronts in providing health insurance to large rural populations, we will describe the origins of the scheme, the process of its establishment, the rational for decisions taken along the way, the major problems and drawbacks that need to be addressed for the future, and the lessons for transferability to other populations within Karnataka, the rest of India and the world.

The section below briefly highlights the urgent need for health insurance coverage for poor, rural, and informal sectors, and through a brief survey of six selected typical experiments around the world, identifies the key challenges in providing such health care coverage. Thereafter, we discuss various aspects of the Yeshasvini scheme, with specific reference to its origins and how it has overcome many of the challenges that have plagued health insurance schemes in other places. Then, we look at some representative data, and some case studies of individuals and hospitals to get a "feel" for how the scheme operates in practice. Finally, we examine reasons for success and evaluate the potential transferability of this model to other populations within India, and across the world.

THE CRITICAL NEED FOR HEALTH INSURANCE FOR POOR, RURAL, AND INFORMAL SECTOR POPULATIONS

Providing health insurance or health security for poor people continues to be one of the most important unresolved policy issues for the world. Most rural and informal sector workers in the world do not have any form of health insurance. And in most developing countries, the rural and informal sectors constitute the bulk of the population. In India, for example, estimates suggest that 90% of India's families earn their livelihood from the unorganized sector, contributing 40% of the nation's GDP (Jhabvala & Subrahmanya, 2000). However, they are poor, most of them are not in employer-employee relationships, they do not have

any form of insurance or security (e.g., maternity benefits, retirement, health insurance), nor do they have representative organizations that might help them fight for these benefits (Ahmad, Dreeze, Hills, & Sen, 1991 Gumber & Kulkarni, 2000a).

The poor are particularly vulnerable to the lack of health security. Studies show that the poor spend a greater percentage of their budget on health-related expenditures (this varies between 6-8% in various studies, see Shariff, Gumber, Duggal, & Alam, 1999). The burden of treatment is particularly devastating for major health issues, and particularly when they seek "in-patient" care (hospitalization). Further, the high incidence of sickness (morbidity in technical terms) cuts into their budget in two different ways, i.e., they need to spend large amounts of money for treatment and are unable to earn money while under treatment. In fact, healthcare costs are one of the primary reasons for rural indebtedness and poverty (Gumber, 1997). It is estimated that at least 24% of all Indians hospitalized fall below the poverty line because they are hospitalized, and that out-of-pocket spending on hospital care raises by 2% the proportion of the population in poverty (Peters et al., 2001, 2002).

Moreover, there is the issue of accessability . . . given that a majority of poor households reside in remote rural areas where no government or private medical facilities are available. Obtaining treatment at a town or district level hospital involves travel costs, which are not insignificant. Thus for many, simply accessing health care is by itself, an expensive proposition. See for example, Subrahmanya and Jhabvala (2000) and Gumber and Kulkarni (2000a) for a more extensive analysis and documentation of the various studies that highlight health security concerns of a majority of the world's population.

However, a common perception is that the poor are too poor to buy health insurance. While it might be true for the poorest of the poor who struggle for survival every day, it need not be true for those living close to the poverty line (Martin, Hulme, & Rutherford, 1999, Zeller & Sharma, 1998). Moreover, there is substantial evidence that if provided with the opportunity, the poor would be willing to pay for health insurance. A recent study by Gumber and Kulkarni (2000b) suggest that the rural respondents in Gujarat were willing to pay an annual premium of Rs 80 and Rs 95 for coverage for hospitalization, chronic ailment, and specialist consultation and an additional 16% if there was coverage of transport costs, medicine costs, and diagnostic charges. However, a large number of the existing schemes for poor people still involve part or full subsidies by the governments of various countries.

Several obstacles stand in the way of providing health insurance to the rural poor and informal sectors (Van Ginneken, 1999). First, the rural and informal sector is not a homogenous category, so it is difficult to organize them. Second, they are geographically dispersed. Third, there are no employers or it is difficult to identify employers. Fourth, providing health insurance to this section of the population is a daunting task, because rural and unorganized workers often need

employment, income, and social security simultaneously, which is hard to provide. As a result, for example, overall health insurance coverage is low in India (Gumber, 2002). Estimates suggest that less than 10% of people in India have access to health insurance, and a majority of them belong to organized sector (Gumber, 1998, Ellis, Alam, & Gupta, 2000). Obviously, the demand for health care for the rural and unorganized sector has largely been unmet.

Commercial insurance companies so far have shown little interest in providing health insurance for rural farmers and workers in the informal sector because of potentially low profitability and high risk. It is non-government organizations (NGOs) and charitable institutions (not-for-profit) that have played an important role in the delivery of affordable health services to the poor. However, the coverage of these schemes has been very limited, and the record has been mixed. A recent review of 83 NGO-provided health insurance schemes for the informal sector suggest issues of poor design and management, affecting their sustainability (Bennett, Creese, & Monasch, 1998). We reviewed several initiatives and experiments, which, despite the problems, provided us valuable experience and lessons. These include SEWA's comprehensive approach to security for its members (Gumber, 2002; McCord, Isem, & Hashemi, 2001), ACCORD for the tribal people of Gudalur in Tamil Nadu (Devadasan et al., 2004; Eswara Prasad, 1998), and some micro-level schemes including NHHP (McCord, 2000a), UMASIDA (McCord, 2000b; Van Ginneken, 1999), and GRET (McCord, 2001c). In addition, the comprehensive social welfare schemes (which include health insurance) through welfare funds in Kerala (see Kannan, 2002, for a detailed evaluation) has also received research attention. Table 1 provides a comparison.

Since these schemes have been reviewed elsewhere, we only summarize the lessons that we have learned from the various analyses.

Restriction in Scope

Most health insurance schemes for poor people are limited in scope. They cover at best a very small percentage of the targeted population. In many cases, they are restricted to a single defined geographic area, or to a small subset of the population (e.g., ACCORD and the various micro-credit based schemes such as NHHP and GRET) or to a defined small population (e.g., SEWA members). From Table 1, it is clear that the coverage of target population of these schemes differs significantly, ranging from 625 to 29,140 people. Similarly, Gumber's (2002) review of selected NGO-managed health insurance schemes also show a large variation in the population served by the schemes. This ranges from as few as 1,247 persons in the Goalpur cooperative health society in Shantiniketan to the relatively large Raigarh Ambikapur Health Association in Madhya Pradesh which serves 400,000 people. The most studied scheme, that of SEWA in Ahmedabad serves 120,000 people. Even the various highly regarded welfare

fund schemes for unorganized sector workers in Kerala reach less than 29% of the target population.

In general, keeping the scheme small and defined in terms of coverage (geographical or population) facilitates the organization of the scheme, collecting premiums, and providing access to health insurance via clinics and dispensaries (most schemes create their own clinics). Thus, the restricted scope problem is a key issue that needs to be overcome if the goal of health insurance for the masses is to be realized. There are no examples where large sections of the rural population have been mobilized for health insurance purposes. Such mobilization is key to the success of health insurance schemes that purport to cover significant chunks of the target population.

Restrictions in Benefits

The second problem is the relatively restricted scope of the benefits offered. The scope of benefits is limited largely because the premiums for health insurance schemes for poor people have to be limited. Thus, the financing of health insurance is a key constraint. In fact, most schemes for the poor focus heavily on primary health care (e.g., SEWA) or have strict ceilings on hospitalization costs. For example, benefits coverage in the SEWA scheme is for a maximum of Rs 1200 per annum, which covers only 20% of medical costs. In programs like ACCORD, the premium for the tribal people is Rs 60 per annum (for a five person family), and the maximum available for hospitalization is Rs 1,500.

Some commercial schemes may have a higher coverage. For example, Mediclaim, a new insurance introduced by the General Insurance Corporation in India covers only hospitalization up to a maximum of Rs 300,000. But, unfortunately, Mediclaim is quite an urban and upper-class phenomenon. While poorer people are able to take advantage of these commercial schemes for illnesses and sometimes for hospitalization, the schemes are of little use for major health issues. Moreover, the lowest known cost of a cardiac by-pass operation in India is Rs 75,000. No rural or unorganized sector person will be covered by existing schemes for a cardiac operation. And this is the case for other common operations as well. The Kerala Welfare funds for informal sector workers solve this problem partially, because the cost of financing is imposed on the whole industry e.g., beedi workers via access on the total produce of the industry, but they also have ceilings on benefits. Thus the whole issue of financing underlies the key issue to be solved, that of *restricted benefits.* These problems are evident in schemes that operate outside of India as well. For example, the health insurance scheme in GRET, Cambodia only covers basic in-home care, with 15.6% average coverage of medical costs. Although UMASIDA's scheme in Tanzania provides in- and out-patient 100% coverage, there are many significant exclusions and limitations. More important, UMASIDA's scheme is not sustainable even if it has initial donor funding, since there is no plan for self-financing.

Table 1. Selected Typical Health Insurance Schemes
for the Poor in Informal Sector

Name, location, and starting time of the scheme	Principles		Constraints		
	Financial sources	Member's choice	Target population	Infrastructure	Administrative agency
Welfare Funds Kerala, India 1969	From workers, employers and governments	Mandatory	Workers in the informal sector	Local dispensaries and hospitals	Bureaucratic Organization
ACCORD Gudalur, Tamil Nadu, India 1992	Members' contribution and initial funding of ASHWINI	Free	Member tribes of AMS	7 health centers, Gudalur Adivasi Hospital (GAH)	GAH, supported by ASHWINI (NGO)
SEWA Gujarat, India 1992	Members' contribution and assets of SEWA Bank	Free	Members and their husbands	95 health centers, "barefoot doctors" service	NGO (SEWA)
NHHP Kampala, Uganda 1999	Members' contribution and subsidies from DFID	Free, but 60% in a group must join	FINCA clients and their families	Nsambya Hospital (NH)	A semi-autonomous unit of NH
UMASIDA Dar es Salaam, Tanzania 1995	Members' contribution and initial donor funding	Free	Cooperatives and market groups	Private clinics and state run hospitals	NGO (Community based groups)
GRET Cambodia 1998	Members' contributions and subsidies from GRET	Free, but whole family must join	Residents of two rural communities	GRET doctors Local hospitals	NGO (GRET)

Administrative Issues

Reviews of various schemes suggest that the administrative establishments underlying the schemes were generally weak, with relatively little attention to quality of health care or efficient delivery. The administrative agencies in the six schemes in Table 1 varied, including four NGOs, a unit of a hospital, and a

Table 1. (Cont'd.)

Main strategies/ mechanisms	Outcomes			
	Coverage of target population	Annual premium (US $)	Benefits (Ave. coverage of medical cost)	Sustainability (income/total expenses
A tripartite body Collective care agreement	Varied, 5.5%-100%	Varied, 0.2-7.5 (per person)	Reimbursement of a part of the medical treatment	Varied among different funds
Link with an assurance company Link with the community organization program	934 (1994)	0.2 (per person)	Hospitalization (Coverage: US $ 37.5/per year, per family)	Need subsidiaries (NA)
Link with micro-finance activities and a compre-hensive health care program	29,140 (Dec. 31, 2000)	1.65 (per person)	In-patient plus maternity, cataracts, dentures, and hearing aids (22.0%)	Self-sustainable (NA)
Partner with an MFI, but with its own system and staffs	625 (June 30, 2000)	11.68 (per person)	In- and out-patient full coverage (90.7%)	Not sustainable (38%, 10/99-6/00)
Organizing community based groups	6,000 (Approx.)	5.22 (per person)	In- and out-patient full coverage (100%)	Not sustainable (50%, after 6 years)
Link with MF activities, direct provision of primary care	711 (June 30, 2000)	1.58 (per person)	Basic in-home, restricted for critical health risks (15.6%)	Not sustainable (8%, 5/99-4/00)

bureaucratic organization like a government department. The World Bank survey also found that the administrative operations varied dramatically. In some schemes, the provider of health care was also the administrator, while other schemes maintained a separation between administrators and providers. In many cases, the local government was the key administrator and responsible for providing benefits.

Complaints regarding claims administration have been very high in most schemes. Generally, it was found that the restrictive scope of the scheme and the restricted benefits often co-existed with very high administrative costs, especially since many schemes had to focus on establishing their own dispensaries, care facilities, and hospitals. The high cost and *weak administration* was most pronounced in the case of the Kerala Welfare Funds (see Kannan, 2002).

Accessibility and Health Care Infrastructure

Last, but not least, there is the issue of accessibility. Many schemes are small because of the problem of providing access. For a health insurance scheme to cover the large and highly dispersed rural population in large Indian states, an extensive network of hospitals, dispensaries, and care facilities must be built, which is beyond the financial capacity of state and local governments. As we noted, most health insurance schemes like the Kerala welfare funds had their own dispensaries or clinics, some schemes like ACCORD and NHHP even have their own hospitals. Thus, the lack of a HEALTH CARE INFRASTRUCTURE or the expenses involved in creating one has been a factor that has limited the growth of health insurance schemes for the rural poor.

These are not the only problems and issues in creating health insurance for large sections of the rural population, but these are the critical problems. One other criticism that has been levied against most current health insurance schemes for rural and unorganized sector workers has been that they fail to consider the linkage to the broader health care system . . . they tend to be close-ended schemes with little connection to established institutions. Thus, many problems need to be solved to provide adequate health insurance for rural people.

Van Ginneken (1999) concludes after reviewing many schemes around the world that contributory schemes are more likely to be sustaining. Although the schemes in Table 1 have many problems, they do suggest that micro-insurance or community-based health insurance, if properly designed and implemented, can provide an effective mechanism for meeting health care challenges of the poor (also see Jakab & Krishnan, 2001; Preker et al., 2001, for a summary of different case studies on the impact of community-based health insurance schemes). Below, we discuss the Yeshasvini scheme in terms of how it has solved some of these problems through proper design and implementation.

THE YESHASVINI HEALTH INSURANCE SCHEME

Origins of the Yeshasvini Health Insurance Scheme

The scheme originated in the mind of Dr. Devi Shetty, a cardiac surgeon who has pioneered the spread of telemedicine as well as low cost cardiac operations in India. Dr. Shetty has been acutely concerned with problems of access to

sophisticated health care by the rural population. He attempted to solve this problem through tele-medicine, using local providers and doctors in large urban hospitals connected via the Internet. While this is still in the experimental stages in several Indian hospitals, it became clear that the poor were still unable to afford medical care. Hence he turned to insurance.

A pilot study commissioned by his Heart Hospital in Bangalore regarding the potential of introducing health insurance revealed some interesting results. First, and as expected, it revealed critical health issues. It was, for instance, common for aged men to suffer kidney failure for want of a simple prostate operation, or premature blindness that is easily rectifiable by a cataract extraction procedure. Even more important, many middle-aged women suffered from excessive bleeding because of a diseased uterus that could be removed by an inexpensive operation. Many children were dying of appendicitis, another easily curable condition. The study also raised several other issues that have been uncovered in prior research, i.e., the fact that poor households spend a larger percentage of their budget on healthcare, and the fact that the major chunk of the healthcare budget of rural poor goes to earning/male member of the family, followed by children, and only then by women. The study further revealed that the average poor farmer who perhaps owns two acres of land and maybe a cow would exhaust all of his savings just to get a serious problem diagnosed (i.e., including running all diagnostic tests and traveling to a small town). By the time he/she has to go to a larger city hospital for the procedure he/she would already be in debt. This informal survey thus made it clear that the capacity of poor people in rural areas to pay for simple operations constituted the problem needing attention.

The implications were clear: any self-financed health insurance scheme for rural poor would have to be based on low premiums but at the same time provide benefits for surgical procedures and hospitalization expenses, as well as cover all of the costs associated with that procedure. In Dr. Shetty's mind, the only solution to this problem was to create a really large health insurance scheme, where the law of large numbers would overcome the basic financing problem associated with the small schemes of the past. This was the basis for the design of the scheme.

Interestingly this pilot study also revealed that there was no (relative) lack of healthcare infrastructure in terms of hospitals and dispensaries. The average occupancy rates in Karnataka's hospitals, was, on average only 35%. The utilization of operating theaters was even lower. At this point, we do not have comparative data for other Indian states, so we do not know whether Karnataka is an exception or the rule. Thus, supply of doctors and hospitals was not the major issue.

Figure 1 summarizes the unique ways in which the Yeshasvini scheme in solving the four major problems identified previously, i.e., restricted scope, restricted benefits, lack of health care infrastructure, and weak administration. We discuss these in detail in the following sections.
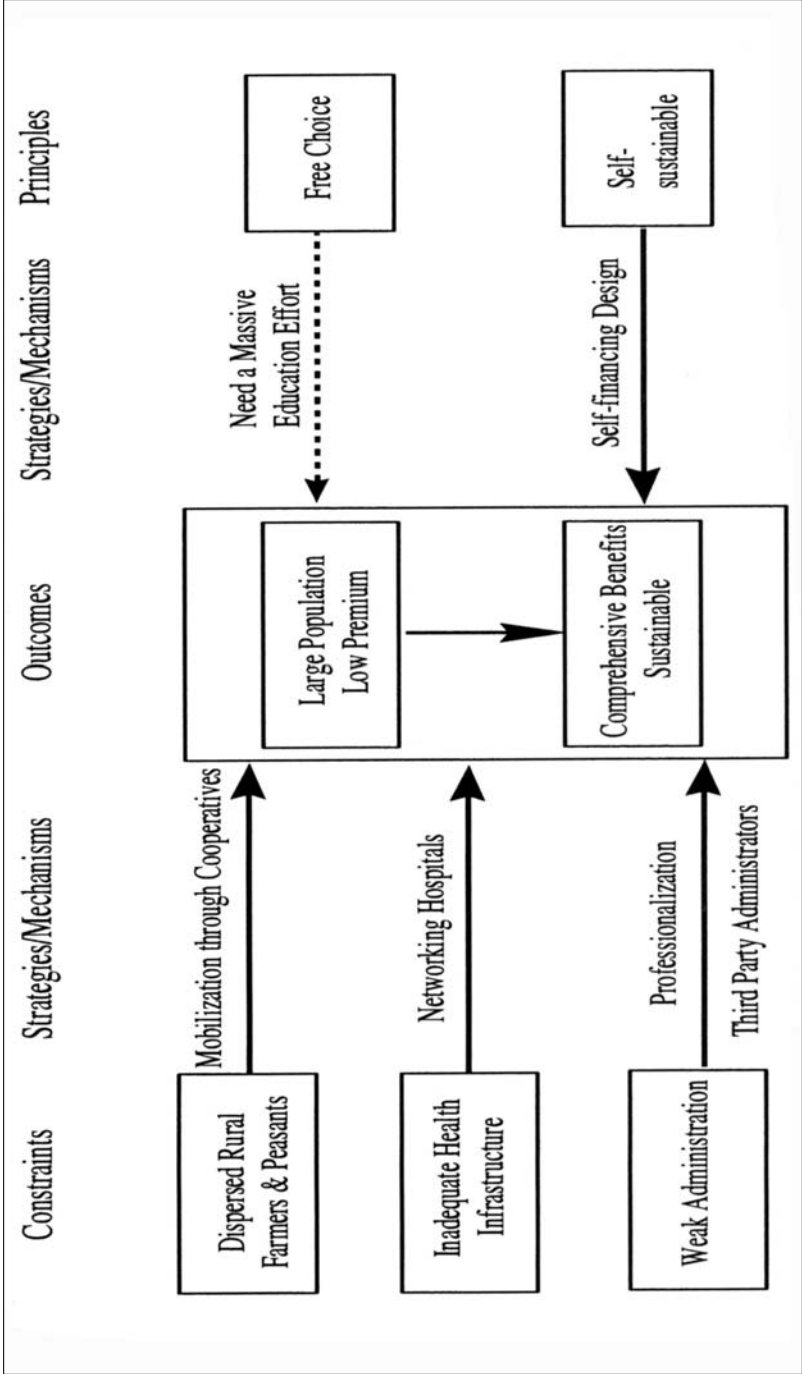
Figure 1. A general model of the Yeshasvini Health Insurance Scheme.

**Solving the Restricted Scope Problem:
Mobilizing a Large Number of Rural Subscribers**

The first step in solving the restricted scope problem was to identify the target population. How does one mobilize a million dispersed rural farmers and informal sector workers in the state of Karnataka (an area of about 191,791 sq km) with a population of 45 million of which 70% work in agriculture? Mobilization implied three major steps, i.e., communicating the scheme to the farmer, creating a system to collect their premiums, and issuing identity cards for participants. It was obvious to Dr. Shetty and his colleagues that they had to find organizations or institutions which connected rural people. And it was important that everyone in that organization or institution became Yeshasvini members. Otherwise only sick people would have joined the scheme, there would be a problem of adverse selection that would limit the subscriber base and therefore bankrupt the scheme.

The only institutions in Karnataka that connected rural farmers and rural peasants were cooperative societies. The cooperative movement has had a long history in Karnataka. The first co-operative society was registered in the year 1905 in Kanaginahal village of Dharward District. Currently over 31,000 co-operative societies have been established. The Co-operative movement encompasses developmental sectors like Textiles, Sericulture, Industries, Animal Husbandry, Fisheries, Sugar, Horticulture, Agriculture Credit, Marketing, etc. Since all cooperatives are required by law to be registered with the Department of Co-operatives, Dr. Shetty initiated discussions with the Principal Secretary of the Department of Cooperatives of Karnataka State. The Principal Secretary was captivated by the novel idea and agreed to cooperate. The Department of Co-operatives oversees the administration and functioning of various co-operative institutions, also assists the societies financially and provides technical guidance.

The interest shown by the Principal Secretary was beneficial in that an administrative machinery was available that would enable education and enrollment of potential members, using existing channels of communication between the various cooperative societies and the government.

The Principal Secretary is assisted by an organization headed by a Registrar of Cooperative Societies, who in turn has available deputy Registrars and district level registrars in each district, each assisted by deputy district registrars. Further, other government officers such as the District Collector (the administrative head of each district), the District Health Officer and the District Surgeon also could be involved through the Department of Cooperatives.

Dr. Shetty and his employees traveled around the state educating the deputy district registrars of cooperative societies about the scheme and the advantages of joining up. He and his colleagues also met with a large number of individual cooperatives, and talked with the secretaries of each society. The process envisaged that the secretary of each cooperative society would convince the

members to join the scheme. Participation in a self-financed insurance scheme must be, perforce voluntary.

However, the government, in its zeal, also got into the mobilization game. The Registrar of Cooperative Societies issued to each of the deputy district registrars a target membership to be recruited. Those deputy district registrars in turn issued each cooperative secretary a target for membership. Initially the department decided to concentrate its attention on cooperatives of farmers.

While there were more than 30,000 cooperatives in the state, the department of cooperatives focused on those with the largest membership, i.e., farmers, milk producers, and sugarcane producers. Given this administrative "fiat" each cooperative society secretary followed his/her own methods of signing up members. In some cases, he/she discussed matters extensively with each individual member and attempted to convince each to sign up. In other cases, the secretary arbitrarily signed up everybody in the society, using their cooperative dues. In yet other cases, all members with outstanding society loans were automatically signed up by the society secretary. In any case, in this way 16 lakh people (1.6 million) signed on to the scheme and paid their annual premium. These 1.6 million people were spread over 27 of Karnataka's 30 districts, although south Karnataka was best represented in terms of membership. Thus, by targeting existing organizations that connected a diverse rural population of farmers, peasants, sugarcane growers, and milk producers, the scheme was able to mobilize the large numbers needed for the success of a self-funded health insurance scheme for the masses.[1]

Several benefits were derived from government participation in the scheme, despite the lack of free choice for some participants. For one, the government provided the access to the cooperative societies, which was the key. Second the department of cooperatives administrative agency provided a vehicle through which the scheme could be popularized, and communicated to rural farmers. Third, despite the communication effort emphasizing that this was private self-financed insurance, since it was popularized by the government it became known as a "govt" scheme. This is a double-edged sword. In many cases rural farmers told us that they distrusted the government's ability to do anything and would not have joined the scheme. Others talked about agreeing to join only because it was a government scheme. Yet others expressed the view that the government ran poor quality hospitals, but the fact that they could go to a private hospital to get treatment via a government backed scheme was very attractive. What remains clear however is that without government involvement via its cooperative societies department, it would have been impossible to sign up 1.6 million members in the scheme's first year of operation.

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[1] There are obvious issues here in the negation of free choice for some of the participants in the scheme. In our evaluations we will re-examine this aspect.

Solving the Restricted Benefits Problem: Designing the Self-Financing Aspects

Given the research results suggesting that rural poor would be willing to pay annual premium ranging from 75-85 Rupees, the premium was fixed at approximately Rs 90 per person per year. Two key assumptions were important. The first assumption was that it would cost Rs 10,000 for a life-saving operation, on average. The second assumption was that only 1-2% of any population would require major surgical procedures during the year, an actuarial assumption that is generally used in the West, but not very well supported in India.

Given the low premium rates, the success of any scheme would depend on generating a large number of rural subscribers. Again, and completely arbitrarily because the size of the target population was unknown (and there was very little information about the health record of the target population), it was decided that a minimum of 1 million members (10 Lakh) would be necessary to launch the scheme.

A central tenet of Dr. Shetty's scheme was that health insurance programs for the masses had to be large, but self-financed. However, during the first year, the collaboration with Karnataka state resulted in a violation of this cardinal principle. The Karnataka government, realizing the political advantages of introducing health insurance of this kind, wanted to subsidize the scheme. This became a contentious issue. It soon became clear to Dr. Shetty that government participation in mobilization was tied to its desire to subsidize the scheme to a certain extent. A compromise was evolved where government financial participation was limited to the first year only. It was decided that the premium would be fixed at Rs 90 per annum (2 dollars per year) and that each subscriber would pay Rs 60 (1.5 dollars approximately) per year, while the government provided Rs 30 per subscriber (about 75 cents). It was also agreed that this government contribution would be a one time event for the first cycle year only.

Incidentally, during the second year, 2.2 million members signed up, so the premium has been retained at the Rs 60 level, largely because the first year experience suggested that this might be sufficient.

Once it became clear that the numbers could be mobilized, it was also possible to think in terms of expanded coverage. Given the fact that poor people could not pay for hospitalization for both major and minor illnesses, it was decided that all charges associated with any surgical procedure would be covered. Thus a person who needed a heart operation would not be asked to pay any charges for the variety of diagnostic tests that are required before the operation. In fact, other than transportation, the patient would not need to incur any expenses at all.

Table 2 lists the surgical procedures that are covered by the scheme and includes the prices for each procedure that it would reimburse the hospitals (we will discuss this reimbursement process aspect later in the article). Over 1,700 different

Table 2. Rate Sheet for Operations

No.	Categories and subcategories	Rate
	OBSTETRICS AND GYNECOLOGY	
1	Hysterectomy	
	I. Abdominal	8000
	ii. B. Vaginal	8000
	iii. C. With Repair	8000
	iv. D. With appendectomy	8000
	v. E. With Salpingo - Oopherectomy	8000
2	LSCS	7500
3	Removal of Ovarian Tumor/Cyst	5500
	GASTROENTEROLOGY	
1	Gastrectomy	
	Oesphago Gastrectomy (Radical)	20000
	Partial	13000
	Total	13000
	Pyleroplasty - for bleeding Ulcer, for Perforation	13000
	GJ with Vagotomy	7000
	Gastrodeuodanactomy	13000
2	Cholecystactomy with Jejunostomy	9000
	With Exploration CBD	9000
	and Laproscopic	13000
3	Appendectomy	
	Acute, Chronic and Abscess	5500
4	Intestine	9000
	For Obstruction	9000
	For Perforation	9000
	For Stomies	9000
	Resection and Anastomosis	11000
	Incissional Hernia	6500
5	Umbilical Hernia	6500
	Coleactomy	
	Total, Right, Left	14000
8	With A. P. Resection	14000
	Removal of Cyst, tumor, and growth/ Excision	
	Biopsy	
	A. Under GA	1200
9	B. Under LA	600
10	Incissional Hernia	6500
	Paraumbilical hernia	6500

Table 2. (Cont'd.)

No.	Categories and subcategories	Rate
	ENDOCRINOLOGY	
1	Thyroidectomy	
	a. Total	9000
	b. Partial	9000
	c. Hemi	9000
	d. Thyroglossal cyst	6000
	ENT	
1	Tonsillectomy with Adenoidectomy	3500
2	Parotoiddectomy	
	a. Simple	3000
	b. Total	6000
3	Mastoidectomy	5000
4	Tympanoplasty	7000
5	Tympanoplasty + Mastoidectomy	7000
6	Foreign body removal - Trachea and Esophagus	1500
7	Polypectomy (Nasal) / Ethmoidal	3500
8	Commando Surgery	15000
9	Submandibular Salivary Calculus	4500
10	Laryngectomy	12000
	EYE	
1	Cataract	2500
6	Spine	
	Disc Prolapse Sry - Disatomy with Laminectomy	12000
	Spinal fusion	12000
	Fractures with internal fixation	16000
	T.B. - Decompression	13000
7	Bone tumors	
	Major	9000
	Minor	4000
	Phalanges	1500
8	Osteomyelitis	7000
9	Bone Graft	
	Major	7000
	Minor	4500
10	Tendon Repair	
	T.A.	5000
	Three Tendon Less than	5000
	Five Tendon More than	5000
	Fracture neck of Femur	12000

Table 2. (Cont'd.)

No.	Categories and subcategories	Rate
	ORTHOPEDIC	
1	Fracture of long bones - Tibia, Humerous, Femur Radius and Ulna	
	Closed Reduction	3500
	Open reduction - Internal / External	12000
2	Arthotomy	
	Major	7000
	Minor	4000
3	Arthodosis	
	Major	9000
	Minor	4000
4	Disarticulations / Amputation	
	Major	7000
	Minor / Small	1000
5	Dislocations	
	Closed Reduction	1500
	Open Reduction	9000
3	Bladder	
	a. C.L.T. (Cysto Litho Tripsy)	7000
	b. Open Cystolithotomy	7000
	c. Cysto Lithopexy	7500
	d. Cystolithotomy	7000
	e. T.U.R.B.T.	10000
4	Prostate	
	a. Open Prostatectomy	10000
	b. T.U.R.P.	9500
5	Penis	
	a. Circumcision (Adult)	1000
	b. Pediatric	1500
	c. Hypospadias	10000
	d. Stricture Urethra	
	Open	10000
	Internal Urethra	7500
	Dialatation of Urethra	1500
	e. Partial Amputation	5000
	f. Total Amputation	7000
7	Scrotum	
	a. Hydorcele	4000
	b. Hydorcele B/L	5000
	c. Varaicocele	5000

Table 2. (Cont'd.)

No.	Categories and subcategories	Rate
	ORTHOPEDIC (Cont'd.)	
	Variocele - B/L	6000
	d. Hernioraphy	5000
	e. Hernia - B/L	6000
11	Manipulation of Joints	2000
12	Bone tumor excision and reconstruction	15000
13	Banrats operation Capsular repair	6000
14	Excision of Bakers Cyst	5000
15	Excision of Tendo Achilis Bursa	4000
16	DHS Surgery of Hip	12000
17	Excision of Exotosis	4500
18	Release of Tennis Elbow	4500
19	Synevectomy	5000
20	Release of Carpal Tunnel	4000
21	Soft Tissue Release	3500
22	Transfer of Nerve	3000
23	Transfer of Tendon	4000
24	Release of Tendon	4000
25	Bi-polar Hemiarthroplasty	8000
26	Arthroscopic and Meniscecctomy	8000
27	Ligament Reconstruction	5000
28	Triple Arthrodesis	5000
29	Plate Removal	4500
30	Nail Removal	4500
31	A C L Reconstruction	8000
32	Non-Union Management (Ilizaror Method)	12000
33	Osteotomy	
	Major	8000
	Minor	6000
34	Removal of Synovialcyst	5000
	GENITO AND UROLOGY	
1	Kidney	
	a. Nephrectomy	
	Simple	13000
	Radical	20000
	b. Nephrolithotomy	15000
	c. P.C.N.L.	14000
	d. Pyeloplasty / Pyelithotomy	14000
2	Ureter	
	a. Ureteroscopic stone removal	9000
	b. Ureterolithotomy	9000

Table 2. (Cont'd.)

No.	Categories and subcategories	Rate
	GENITO AND UROLOGY (Cont'd.)	
	c. Reimplantation of Ureter	14000
	d. Dormia Extraction of Calculas	9000
	e. Cystoscopic Basketing of Ureter	9000
	f. URS with D J Stenting	10000
	g. Lithotripsy	75000
	h. ESWL with D J Stenting	10000
	f. Orchidopexy	5500
	g. Orchidectomy	5000
	h. Orchidectomy B/L	6000
	I. Excision of Epydymian Cyst	5000
	GENERAL SURGERY	
1	Spleenoectomy	9000
2	Panreactomy	20000
3	Lumpectomy - including breast	4000
4	Radical Mastectomy	9000
5	Operations on varicose vein	7000
6	Sympathaactomy	
	a. Lumbar	7500
	b. Cervical	7500
7	Hemorroidectomy	4000
8	Fissurectomy/Fistulectomy	4000
9	Excision of Pilonoidal Sinus	4000
10	Excision of Gynaeomastia	4000

Exclusions: Medical Treatment, Implants including Valves, Grafts Mesh, Stents, Nails, Screws, Joint Replacement surgeries, Transplants, Burn cases, Malignancies–Chemotherapy, Cosmetic surgery, Road Traffic Accidents (RTAs), Medico Legal Cases (MLCs), Angioplasty, Autoimmune diseases, Vaccination, Normal deliveries, Dental surgeries, Incision and Drainage–Local and GA, Skin grafting for wound–Large/Small, Vitamins, Tonic and Sanitary items, Follow-up treatment, Spectacles, Dialysis, Ambulance Services, Food, Artificial Limb, Telephone charges, Biopsies, Deviated Nasal Septum, Kidney Transplants.

operations are covered. However, there are significant exclusions. These include implants including valves, grafts, mesh, stents, nails, screws, and joint replacement surgeries, liver transplants, and dental surgeries. The scheme also does not cover follow-up investigations unless it can be proved that some negligence on the part of the hospital was involved.

Each person is entitled to a maximum coverage of Rs 200,000 per year. Typically, this would include two cardiac by-pass operations (Rs 150,000) and several other smaller operations.

In addition to coverage for surgical procedures, the scheme also covers out-patient consulting at the network of hospitals. This primarily includes doctor's fees. Investigations (diagnostics and X-rays) as part of the outpatient consulting are discounted for Yeshasvini patients, i.e., performed at 70% of the total costs. The scheme does not cover any type of medical treatment for the beneficiaries where surgical intervention is NOT required.

We found that on average each rural person we talked to made use of outpatient services about three times a year. In Mandya district, for example, the average outpatient consultation fee was Rs 20 per visit. Thus, the cost of the premium (Rs 60) would easily be recovered by three outpatient visits alone, apart from free surgery and related costs. This was a significant advantage of the scheme. The typical process of availing treatment is detailed in Figure 2.

In this way the scheme was able to provide very wide coverage for most surgical procedures and outpatient services to a large number of people paying very low premia, and with very large ceilings on maximum coverage (Rs 200,000 per year). No contemporary health insurance scheme for poor/rural people anywhere in the world has such a high rate of coverage with such a low premium . . . the closest was the Mediclaim policy by the GIC in India that covered people for a maximum of Rs 15,000 (with a premium ranging from Rs 175 to Rs 330) to Rs 300,000 (with a premium ranging from Rs 2,825 to Rs 5,770) per year, in a scheme not primarily designed for the rural poor. SEWA only offers a maximum coverage of Rs 1200 per annum.

Solving the Access Problem: Creating a
Health Care Infrastructure through a Network of Hospitals

It was clear that to provide rural people with access to hospitals would require the active participation of the private sector. The Government has a network of hospitals, to be sure, but as is often the case, they are inefficiently run, and most patients have to pay for "free" care at government hospitals. More importantly, they are under-funded and do not always have the required equipment available.

The private hospitals were not easy to convince, however, as they had no means of estimating how much additional revenue participating in the network would bring. Not many hospitals could understand how a system based on individuals paying such low premium levels would work. However, given low capacity utilization rates, about 30-40 hospitals agreed to participate. Once the scheme commenced and the number of patients grew, more hospitals were prepared to come forward. By March 2004, when this evaluation commenced, about 92 hospitals were on board. By June 2004, 118 hospitals were certified to participate.

A formal process was established for evaluating hospitals before they could join the network. The administrator of the Yeshasvini scheme (to be discussed below) established the process shown in Figure 3.
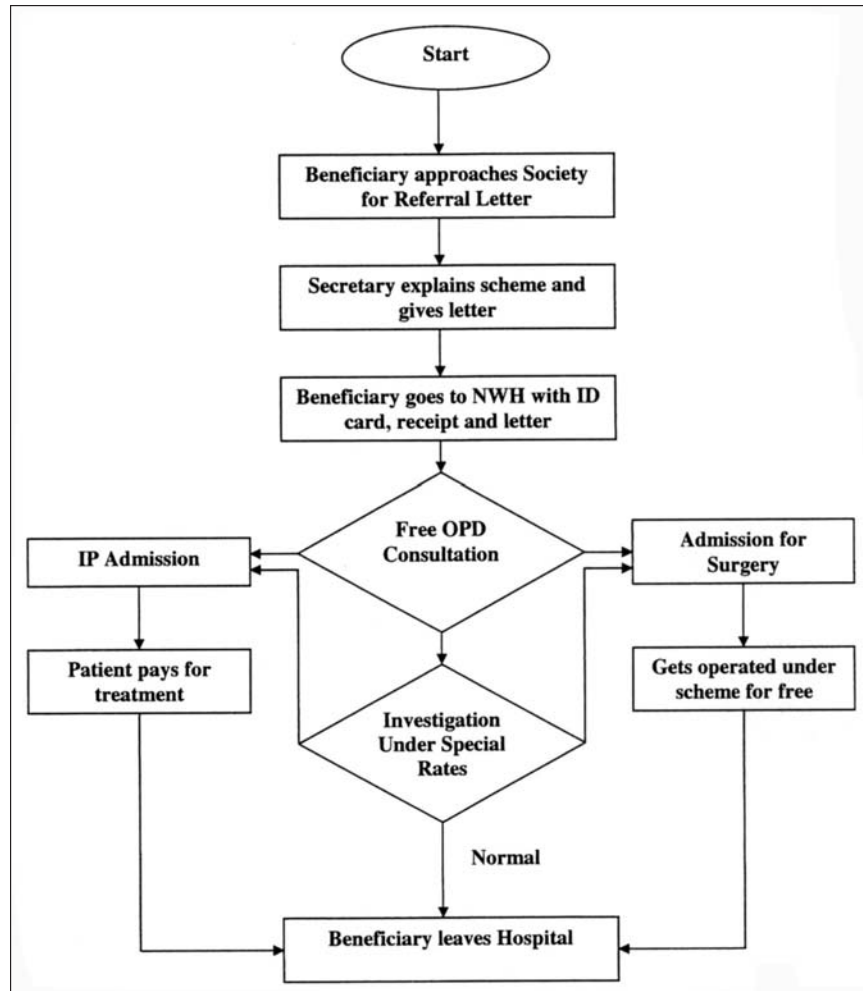
Figure 2. Process of availing treatment.

Essentially, a hospital sends its application to the District Collector, the Chief Administrative Officer of the district. The District Collector, the District Cooperative Registrar, the District Health Officer, and the District Surgeon visit the hospital. They then send a report FHPL. The District FHPL Coordinator visits the hospitals again to examine the quality of care provided at the hospital. Only hospitals with a certain level of infrastructure are allowed to be part of the network. They also obtain the rates charged by that hospital for various operations. Based on a comprehensive survey of rates charged by different hospitals in
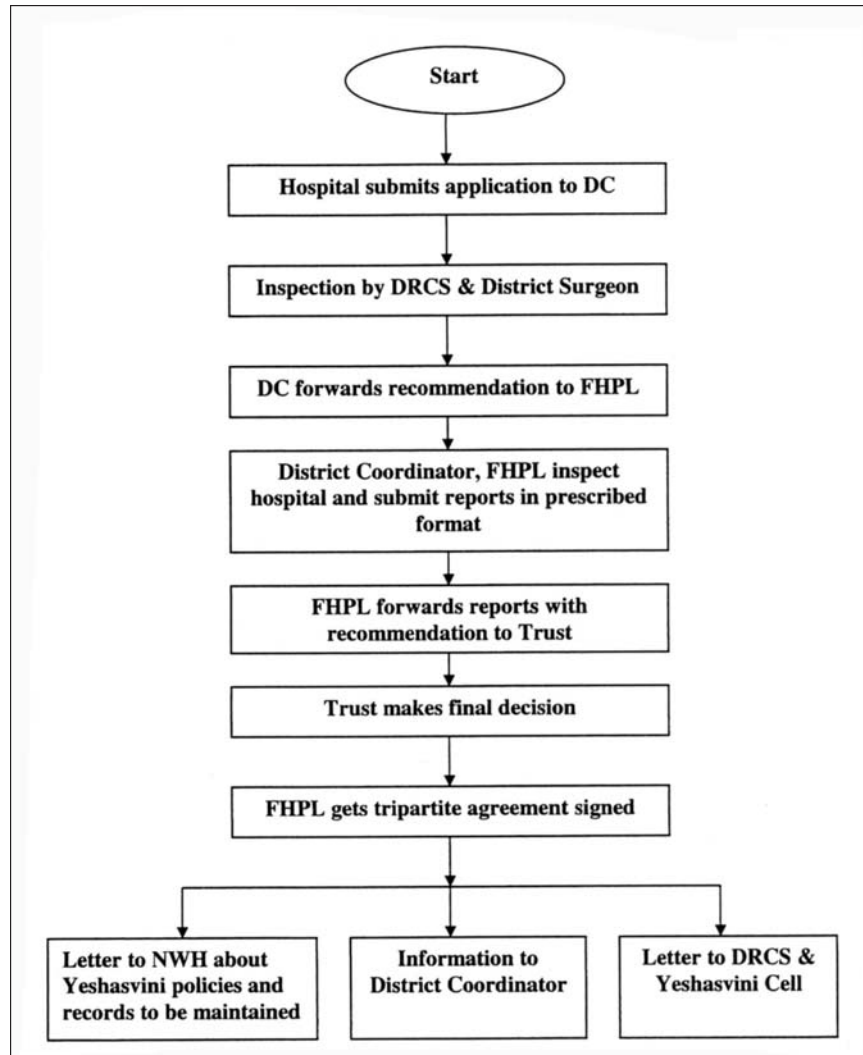
Figure 3. Enrollments of new hospitals.

Karnataka, a rate sheet for various operations and treatments was developed. These rates are listed in Table 2. Tariffs for the most commonly performed diagnostic tests have also been fixed.

As of March 2004, only district level hospitals are part of the system. In terms of access, rural villagers need to travel a maximum of about 100 km to obtain surgical care at a district level hospital. The average distance is 40 kilometres.

Now, taluk (sub-district) level hospitals want to join, but they will have to improve their infrastructure quite dramatically over the next few years to become eligible.

Solving the Administrative Problem: Professional Administration Processes and Third Party Administrators

Administration

The Scheme is administered by the Yeshasvini Trust, which is composed of 11 board members, drawn from the medical community and the Department of Cooperation. Currently, the Principal Secretary of the Department of Cooperatives, the Registrar, the Additional Registrar, the MD of the Apex Bank, the Secretary of the Sugar Cane Commission, the Secretary of the Karnataka Milk Federation, and five doctors who are representatives of the network of participating hospitals, are sitting on the board.

The government of India's Insurance Development Regulatory Authority (IRDA) mandates that insurance schemes must have a Third Party Administrator (TPA) who will handle the schemes and the claims process, but will not be a part of the organization providing medical services. Although the IRDA does not specify such rules for self-financed schemes, the trust decided to appoint a well established private firm—Family Health Plan Limited (FHPL), a division of Apollo Hospital, as the third party administrator. FHPL, with over a decade of experience in administering medical health schemes, is the largest agency in the country in the health insurance scheme administration field. Moreover, FHPL is also the first TPA in India to conceptualize, design, and implement a Self-Funded Scheme (SFS). A representative of the trust sits in the office of FHPL to provide guidance and to ensure adherence to the basic elements of the scheme. It is FHPL who devises procedures and systems for managing the scheme.

The total fees paid to FHPL for managing the scheme is Rs 5,900,000, which translates into roughly 4% of the total subscriptions to the scheme. The total subscriptions (1.6 million subscribers each paying a total of Rs 60, and the state government's contribution of Rs 30 per head) were Rs 144,000,000.

Administrative Procedures

When a doctor at a network hospital determines that a Yeshasvini patient requires surgery, that doctor requests FHPL to authorize the surgery. In order for FHPL to do this, the hospital must send to FHPL a pre-authorization form, along with a copy of the ID card of the patient and society membership card. They can send it by mail or courier. In cases of emergency they can call and send the documents later. FHPL's resident doctor makes a decision to authorize the operation at the prescribed fee. This is communicated to the hospital. Thereafter the hospital may proceed with the surgery. This process is called

Pre-authorization. Once the preauthorization is issued, the network hospital can proceed with the surgery and then submit the claim to FHPL. The process of approving a pre-authorization is shown in Figure 4.

The process is fairly simple. From the patient's point of view, there is very little administrative hassle. From the hospital's point of view as well, it is relatively efficient, and with the Internet a lot can be done electronically. There are some problems however. For instance, it is possible that a patient shops at different hospitals, so that perhaps three pre-authorizations are issued for the same operation. It is also possible that the two hospitals that have not performed the operation could also send in fictitious claims (since they have the pre-authorization). This may not happen often, since the FHPL doctor is there to check, and he may remember having authorized a particular operation for a particular person . . . but a process of canceling existing pre-authorizations once a claim is sent in by one hospital is still required. The process of claims settlement is shown in Figure 5.

RESULTS OF THE FIRST YEAR
OF OPERATIONS

By the end of the first year of operations, a total of 9,039 surgeries had been completed valued at a total of Rs 10.53 crores ($2.3 million US). However the actual number of pre-authorizations was higher at 10,214 (valued at 11.94 crores or 2.65 million US$). The difference between the two numbers occurs because pre-authorization is issued, but the surgery does not take place by the end of the fiscal year.

From an accounting standpoint, the scheme turned a profit. The total premium paid by 1.6 million subscribers was Rs 14.4 crores (3.2 million US$). Subtracting the total number of surgeries (11.94 crores) and the administrative expenses paid to FHPL (Rs 59 Lakhs), the scheme generated a surplus of 1.86 crores, which has been carried forward to the second year of operations. In addition, the number of free outpatient treatments provided at various hospitals was large, a total of 35,814 occasions.

We present below some representative data on the operation of the scheme. These are a snapshot of monthly or weekly activity taken during February of 2004. By March the scheme was into its ninth month of operations. Table 3 lists the pattern of surgeries up to the end of February.

As Table 3 suggests, by the end of February, 7,352 pre-authorizations for surgery had been given. Hysterectomies accounted for the largest percentage of surgeries (24.5%), closely followed by general surgery (23%). Cardiac surgery accounted for 7.35% similar to surgical procedures in cardiology, urology, and orthopedics. What is key however is that 99% of the scheme's participants are poor, and would not have been able to afford the expense of cardiac surgery and its associated costs. On average a cardiac operation and assorted care involves a sum
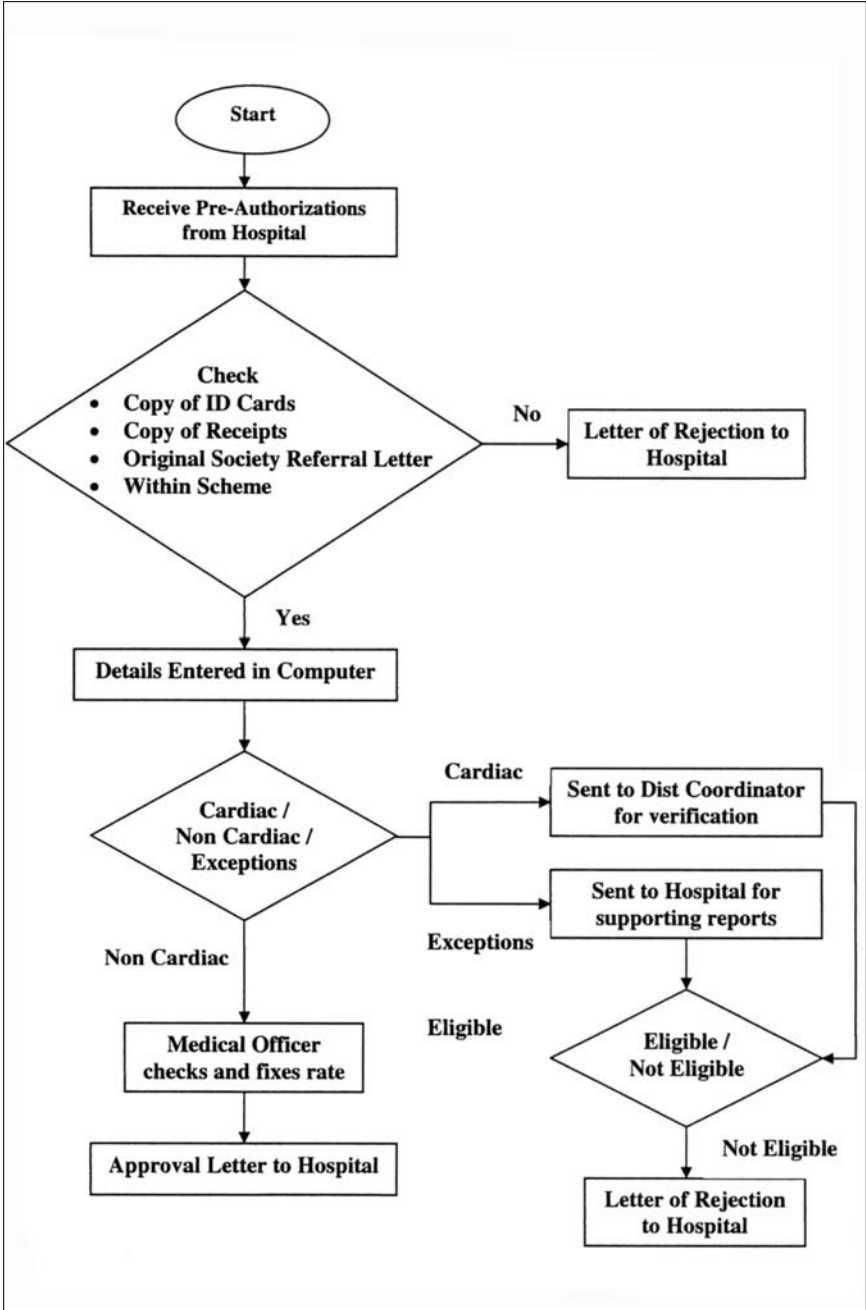
Figure 4. Process of pre-authorization.
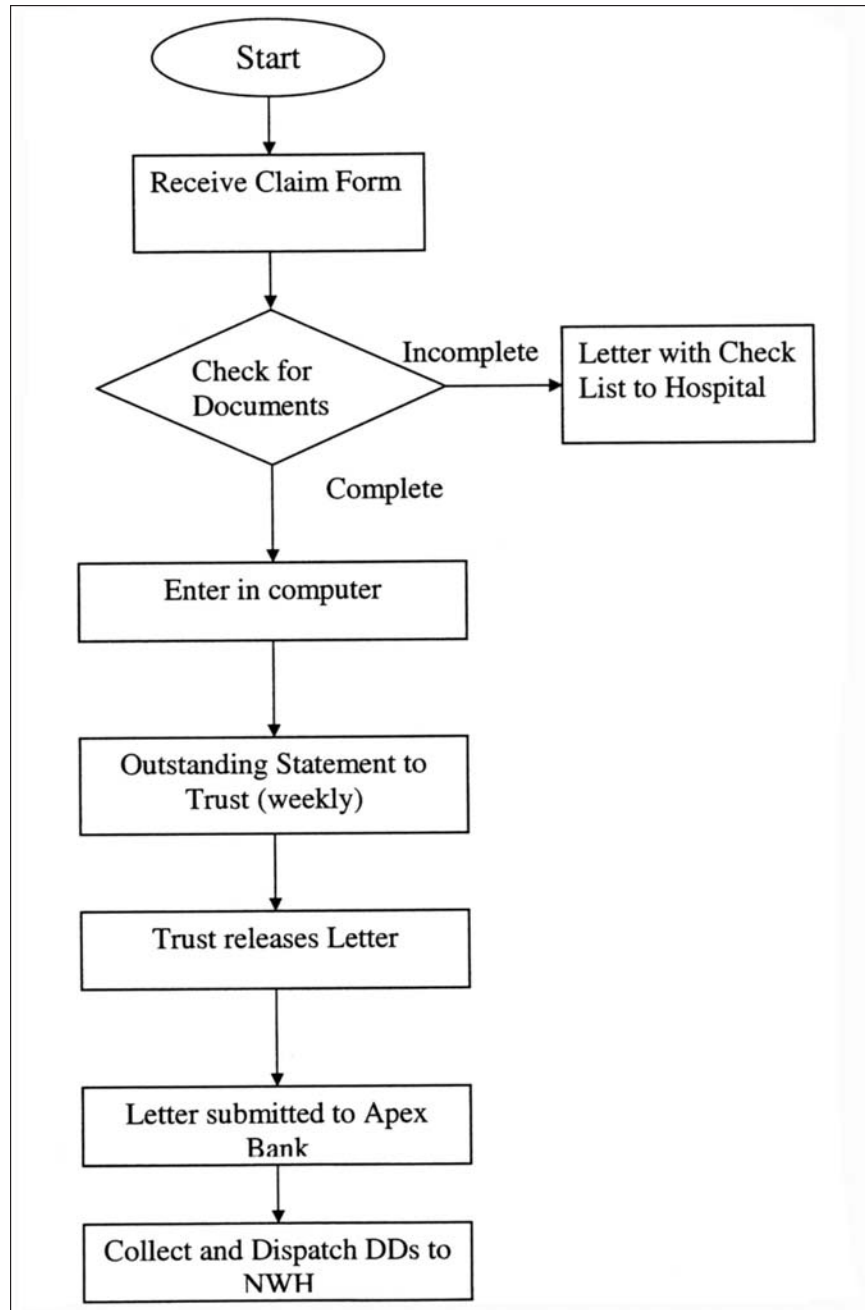
Figure 5. Process of claim settlement.

Table 3. Statement Showing Specialty-Wise Distribution of Cases from Each District
Up to February 29, 2004

SL No.	Districts	No. of cases	Specialty											
			Cardiac surgery No.	Cardiology No.	Endocrinology No.	ENT No.	Gastroenterology No.	Gen. surgery No.	Urology No.	Neuro No.	OB & Gyn. No.	Ophthal. No.	Ortho-pedics No.	Vascular No.
1	Bagalkot	61					2	16	13		17		13	
2	Bangalore	1422	460	519	6	11	26	95	46	5	85	67	95	7
3	Belgaum	418	41	26	3	30	13	74	51	6	32	106	34	2
4	Bellary	82			2	2	11	13	1		31	20	2	
5	Bidar	196			1	2	19	75	26		27	13	33	
6	Bijapur	5				1		1	1			2		
7	Chamarajanagar	14			1		1	3	1					
8	Chikmagalur	91			3		9	26	13		24	5	11	
9	Chitradurga	142				3		44	15		62	7	11	
10	Davangere	592			3	48	21	164	92	4	142	59	53	6
11	Gadag	57			3	2	2	22	4		13	5	6	
12	Gulbarga	33					1	15	3		3	7	4	
13	Hassan	536			5	40	37	137	39	1	180	32	64	1

No	District												
14	Haveri	21				3		8	1		8	1	1
15	Hubli	48				6	3	16	2		5	9	7
16	Kodagu	56			4	4		29			13	2	4
17	Kolar	394			8	23	43	100	15	1	138	9	57
18	Koppal	6					1	2			2	1	
19	Koteshwar	43			2	2	1	16	5		1	7	9
20	Kundapura	326			10	41	12	114	17		78	2	52
21	Mandya	952			13	32	56	258	38		449	57	49
22	Mangalore	198	15	14	9	10	8	56	20		21	12	33
23	Mysore	767	19	26	13	42	51	182	98	5	196	48	87
24	Raichur	89	6	2		3	2	17	7		11	25	16
25	Shimoga	272			2	16	15	81	23	1	112	10	12
26	Tumkur	407			8	30	17	131	48		126	13	34
27	Udupi	124			5	3	9	46	16		21	12	12
	Total Pre-auths given as of February 29, 2004	7352	541	587	101	354	360	1741	595	23	1805	530	699

of Rs 150-200,000. It is thus safe to say that (assuming that cardiac surgery is only done when life is threatened) 99% of the patients having surgery would not have been able to afford it without this insurance scheme. This has been an unqualified success by the criterion of human lives saved.

Table 4 shows OPD statistics for all network hospitals across the state for the week March 22-28, 2004. As is expected, the lead hospitals in major districts (Bangalore, Mysore, Davanagere, and Belgaum) account for the largest number of cases. Table 5 shows the surgery data during March 22-28 and total surgeries up till that date, across all districts.

CASE STUDIES OF PATIENTS
AND HOSPITALS

While the summary tables provide an overall picture of the operations, we decided to report a few case studies of network hospitals and patients. We interviewed the heads of three hospitals and four randomly chosen patients, two of whom were at the hospital and two were residing in their villages in Mandya district. Beyond providing summary data, these patient case studies significantly demonstrate the value of this scheme.

Patients

A. J. Chandrasekhar, Rural Farmer

He is 30 years old and a graduate with a bachelor's degree in agriculture. He has 1.5 hectares of land. He used to grow ragi and bhatta (rice). He has a family of two, and his parents live with him. He has four cows and these provide 8-10 litres of milk per day.

In good times, he could make as much as 30,000 rupees per hectare. However, he has stopped both rice and ragi cultivation because of the lack of water in Mandya district. Thus, he is now living on the income from the sale of milk from his four cows. With this he is able to earn Rs 2,500 per month.

His father and mother are both diabetics. The family spends around Rs 1,000 on food, and another Rs 1,000 (on average) for agricultural and dairy products. (When he used to grow crops he would earn more but also spend roughly 10-15,000 per hectare for sugar and/or 5-6,000 per six month crop of ragi or rice). Another 500 rupees is kept for emergencies and medicine for his parents. He says he spends Rs 17 per month on entertainment and travel.

He lives about 10-12 km from Mandya town. To get to Mandya he needs to walk 2 km to the bus stand to catch the one bus a day to Mandya. Occasionally he can get a ride on a two-wheeler belonging to someone else.

He is in the hospital for an operation on his throat. He was told six years ago that he needed this operation, but could not afford to do it, since the operation would cost between 5,000 and 6,000 Rupees. Originally he was not

Table 4. OPD Statistics
Week: March 22 to March 28, 2004

SI	District	NWH	OPD no. till previous week	OPD during the week	Total OPD till date
1	Bagalkot	Kanti Nursing Home	89	0	89
		Kerudi Hospital	177	2	179
2	Bangalore	CMH	232	2	234
		CSI Hospital	235	0	235
		Hosmat Hospital	153	3	156
		Jayadev Hospital	192	20	212
		Jivas Hospital	8	0	8
		Kims Hospital	190	16	206
		M S Ramaiah Hospital	59	2	61
		Maharaja Agrasen Hospital	115	0	115
		Mallya Hospital	34	0	34
		N U Trust Hospital	51	0	51
		Narayana Hrudayalaya	2489	72	2561
		Narayana Nethralaya	123	8	131
		Vydehi Hospial	50	0	50
3	Belgaum	K L E S Hospital	2067	15	2082
		Kasbekar Metgud Clinic	668	10	678
		Karnataka Health Institute	9	1	10
4	Bellary	Adarsha Nursing Home	202	2	204
		Madhuri Nursing Home	101	9	110
		Sukrutha Nursing Home	52	0	52
5	Bidar	Apex Hospital	153	2	155
		Gurunanak Hospital	46	3	49
		Prayavi Hospital	425	6	431
6	Bijapur	Almeen Hospital	56	5	61
		Sri Krishna Hospital	9	2	11
7	Chamrajanagara	Holy Cross Hospital	110	5	115
8	Chikmagalur	Ashraya Hospital	98	2	100
		Holy Cross Hospital	283	7	290
9	Chitradurga	Krishna Nursing Home	1109	15	1124
		PVS Hospital	192	0	192
10	Davanagere	Ashwini Nursing Home	404	10	414
		City Central Hospital	1281	8	1289
		Ravi Nursing Home	1965	22	1987

Table 4. (Cont'd.)

SI	District	NWH	OPD no. till previous week	OPD during the week	Total OPD till date
11	Gadag	K H Patil Hospital	56	0	56
		Sanjeevini Hospital	459	0	459
12	Gulbarga	Basaveshwara Hospital	211	4	215
13	Hassan	Bharathi Nursing Home	215	10	225
		CSI Redfern Hospital	164	3	167
		Hemavathi Hospital	150	0	150
		Janatha Nursing Home	14	0	14
		Mangala Hospital	274	3	277
		Rajeev Nursing Home	130	0	130
		Sanjeevini. Co. Hospital	35	2	37
14	Haveri	Dr. Lodaya Hospital	44	4	48
		Handral Nursing Home	224	6	230
15	Hubli	K H Jituri Hospital	62	0	62
		Shakunthala Mem. Hospital	136	6	142
		Sushrutha Hospital	46	0	46
16	Karwar	Gurukrupa Nursing Home	182	4	186
		Colaco Hospital	1	0	1
		St. Ignitius Hospital	5	1	6
17	Kolar	New Kolar Nursing Home	422	15	437
		Srinivasa Nursing Home	52	44	96
		R L Jalappa Hospital	1613	20	1633
		Suguna Nursing Home	29	1	30
18	Koppal	Chiranjeevi Hospital	9	0	9
		Patil Nursing Home	26	22	48
19	Kundapura	Adarsha Hospital	224	2	226
		Chinmayi Hospital	54	1	55
		N R Acharya Mem. Hospital	55	3	58
		Ramakrishna Hospital	13	0	13
		Vijayashree Hospital	64	0	64
		Vinaya Hospital	236	3	239
20	Madikeri	Jedi Hospital	305	15	320
21	Mandya	Adichunchanagiri Hospital	150	6	156
		Archana Hospital	385	25	410
		Kaveri Nursing Home	1616	15	1631

Table 4. (Cont'd.)

SI	District	NWH	OPD no. till previous week	OPD during the week	Total OPD till date
		Krishna Raja Co. Hospital[a]	140	0	140
		New Praghathi Nursing Home	606	8	614
		Suraksha Nursing Home	850	10	860
22	Mangalore	A J Hospital	299	6	305
		F R Muller Medical College	312	0	312
23	Mysore	Basappa Memorial Hospital	110	4	114
		Gopala Gowda Hospital	1513	18	1531
		J S S Medical Hospital	465	23	488
		N J Hospital	1255	35	1290
		BGS Apollo Hospital	0	0	0
		Vikram Hospital	112	5	117
24	Raichur	M K Bhandari Hospital	95	1	96
		Navodaya Medical College	102	3	105
		Rajiv Gandhi Hospital	210	56	266
25	Shimoga	City Hospital	106	0	106
		Ushra Nursing Home	433	6	439
		Ravi Poly Clinic	41	5	46
26	Tumkur	Kasturba Hospital	830	11	841
		Siddartha Medical College	315	0	315
		Sridevi Hospital	529	0	529
		Bharathi Hospital	10	1	11
		Vijaya Hospital	10	1	11
27	Udupi	City Hospital	272	1	273
		Hi-Tech Medicare Hospital	88	0	88
		Mitra Hospital	291	3	294
		Total	**30267**	**661**	**30928**

convinced about Yeshasvini when the local secretary of his cooperative society explained the scheme. However, when he heard about the benefits and assumed that it was run by the government, he took a chance and signed up. That was very good, because his condition got rapidly worse and he needed the operation right away. Now he thinks that it is a really good scheme, and if he can afford it he would sign up all members of his family, especially his diabetic parents.

Table 5. Surgery Statistics
Week: March 22 to March 28, 2004

Sl	District	NWH	Surgeries till end of previous week		Surgeries for week		Total surgeries till date	
			No.	Value	No.	Value	No.	Value
1	Bagalkot	Kanti Nursing Home	8	72500	0	0	8	72500
		Kerudi Hospital	44	342700	0	0	44	342700
		Subtotal	**52**	**415200**	**0**	**0**	**52**	**415200**
2	Bangalore	CMH	52	328500	0	0	52	328500
		CSI Hospital	51	386000	0	0	51	386000
		Hosmat Hospital	65	893500	0	0	65	893500
		Jayadeva Hospital	72	1329500	3	8400	75	1413500
		Jivas Hospital	3	67000	1	4000	4	71000
		Kims Hospital	116	884900	4	28000	120	912900
		M S Ramaiah Hospital	17	244000	0	0	17	244000
		Maharaja Agrasen Hospital	21	170500	0	0	21	170500
		Mallya Hospital	4	57000	0	0	4	57000
		N U Trust Hospital	10	120500	0	0	10	120500
		Narayana Hrudayalaya	883	27560500	22	1086000	905	28646500
		Narayana Nethralaya	62	157500	0	0	62	157500
		Vydehi Hospital	18	129500	0	0	18	129500
		Subtotal	**1374**	**32328900**	**30**	**1202000**	**1404**	**33530900**
3	Belgaum	K L E S Hospital	297	4423000	9	99700	306	45227000
		Kasbekar Metgud Clinic	93	429700	3	13500	96	443200
		Karnataka Health Institute	0	0	0	0	0	0
		Subtotal	**390**	**4852700**	**12**	**113200**	**402**	**4965900**

	District	Hospital						
4	Bellary	Adarsha Nursing Home	40	280200	0	0	40	280200
		Madhuri Nursing Home	21	68500	4	15500	25	84000
		Sukrutha Nursing Home	10	70000	1	14000	11	84000
		Subtotal	**71**	**418700**	**5**	**29500**	**76**	**448200**
5	Bidar	Apex Hospital	37	255500	3	22000	40	277500
		Gurunanak Hospital	18	132000	0	0	18	132000
		Prayavi Hospital	143	1110500	5	48500	148	1159000
		Subtotal	**198**	**1498000**	**8**	**70500**	**206**	**1568500**
6	Bijapur	Al-Ameen Hospital	4	18000	0	0	4	18000
		Sri Krishna Hospital	2	17500	0	0	2	17500
		Subtotal	**6**	**35500**	**0**	**0**	**6**	**35500**
7	Chamrajanagara	Holy Cross Hospital	15	109200	0	0	15	109200
		Subtotal	**15**	**109200**	**0**	**0**	**15**	**109200**
8	Chikmagalur	Ashraya Hospital	37	248500	2	5500	39	254000
		Holy Cross Hospital	57	431500	3	24000	60	455500
		Subtotal	**94**	**680000**	**5**	**29500**	**99**	**709500**
9	Chitradurga	Krishna Nursing Home	78	565000	2	16000	80	581000
		PVS Hospital	53	362500	1	8000	54	370500
		Subtotal	**131**	**927500**	**3**	**24000**	**134**	**951500**
10	Davanagere	Ashwini Nursing Home	83	551000	2	10500	85	561500
		City Central Hospital	218	1710600	9	105000	227	1815600
		Ravi Nursing Home	235	1660700	4	35000	239	1695700
		Subtotal	**536**	**3922300**	**15**	**150500**	**551**	**4072800**
11	Gadag	K H Patil Hospital	7	40000	0	0	7	40000
		Sanjeevini Hospital	46	311500	0	0	46	311500
		Subtotal	**53**	**351500**	**0**	**0**	**53**	**351500**

Table 5. (Cont'd.)

Sl	District	NWH	Surgeries till end of previous week		Surgeries for week		Total surgeries till date	
			No.	Value	No.	Value	No.	Value
12	Gulbarga	Basaveshwara Hospital	31	176500	0	0	31	176500
		Subtotal	**31**	**176500**	**0**	**0**	**31**	**176500**
13	Hassan	Bharathi Nursing Home	111	824200	9	84000	120	908200
		CSI Redfern Hospital	36	176000	1	2500	37	178500
		Hemavathi Hospital	92	591000	6	48000	98	639000
		Janatha Nursing Home	4	32000	0	0	4	32000
		Mangala Hospital	246	1800400	7	52500	253	1852900
		Rajeev Nursing Home	40	239200	2	16000	42	255200
		Sanjeevini. Co. Hospital	20	151700	3	16000	23	167700
		Subtotal	**549**	**3814500**	**28**	**219000**	**577**	**4033500**
14	Haveri	Dr. Lodaya Hospital	4	26500	0	0	4	26500
		Handral Nursing Home	19	123000	2	13000	21	136000
		Subtotal	**23**	**149500**	**2**	**13000**	**25**	**162500**
15	Hubli	K H Jituri Hospital	3	23000	0	0	3	23000
		Shakunthala Mem. Hospital	47	299200	1	12000	48	311200
		Sushrutha Hospital	0	0	0	0	0	0
		Subtotal	**50**	**322200**	**1**	**12000**	**51**	**334200**
16	Karwar	Gurukrupa Nursing Home	19	129500	0	0	19	129500
		Colaco Hospital	0	0	0	0	0	0
		St. Ignitius Hospital	0	0	0	0	0	0
		Subtotal	**19**	**1299500**	**0**	**0**	**19**	**129500**

No.	District	Hospital						
17	Kolar	New Kolar Nursing Home	115	733900	2	16000	117	749900
		R L Jalappa Hospital	196	1496100	22	186000	218	1682100
		Suguna Nursing Home	8	58500	0	0	8	58500
		Srinivasa Nursing Home	21	156000	3	24000	24	180000
		Subtotal	**340**	**2444500**	**27**	**226000**	**367**	**2670500**
18	Koppal	Chiranjeevi Hospital	2	18000	0	0	2	18000
		Patil Nursing Home	4	24000	3	17500	7	41500
		Subtotal	**6**	**42000**	**3**	**17500**	**9**	**59500**
19	Kundapura	Adarsha Hospital	60	363400	0	0	60	363400
		Chinmayi Hospital	44	302500	0	0	44	302500
		N R Acharya Mem. Hospital	16	102700	0	0	16	102700
		Ramakrishna Hospital	4	30000	0	0	4	30000
		Vijayashree Hospital	32	277700	1	3500	33	281200
		Vinaya Hospital	188	1282100	1	8000	189	1290100
		Subtotal	**344**	**2358400**	**2**	**11500**	**346**	**2369900**
20	Madikeri	Jedi Hospital	54	326100	0	0	54	326100
		Subtotal	**54**	**326100**	**0**	**0**	**54**	**326100**
21	Mandya	Adichunchanagiri Hospital	36	259500	0	0	36	259500
		Archana Hospital	118	660700	6	55000	124	715700
		Kaveri Nursing Home	360	2426700	7	59000	367	2485700
		Krishna Raja Co. Hospital	18	100700	0	0	18	100700
		New Pragathi Nursing Home	183	1295800	3	24000	186	1319800
		Sukaksha Nursing Home	206	1382100	3	25500	209	1407600
		Subtotal	**921**	**6125500**	**19**	**163500**	**940**	**6289000**
22	Mangalore	A J Hospital	106	1712500	3	97000	109	1809500
		F R Muller Medical College	70	584500	3	25500	73	610000
		Subtotal	**176**	**2297000**	**6**	**122500**	**182**	**2419500**

Table 5. (Cont'd.)

SI	District	NWH	Surgeries till end of previous week		Surgeries for week		Total surgeries till date	
			No.	Value	No.	Value	No.	Value
23	Mysore	Basappa Memorial Hospital	42	311200	5	34500	47	345700
		Gopala Gowda Hospital	342	2543000	6	58000	348	2601000
		J S S Medical Hospital	175	1304500	3	24000	178	1328500
		N J Hospital	63	464500	3	16000	66	480500
		BGS Apollo Hospital	0	0	0	0	0	0
		Vikram Hospital	57	1290000	3	84000	60	1374000
		Subtotal	**679**	**5913200**	**20**	**216500**	**699**	**6129700**
24	Raichur	M K Bhandari Hospital	41	221000	2	5000	43	226000
		Navodaya Medical College	2	20000	0	0	2	20000
		Rajiv Gandhi Hospital	55	790500	2	16000	57	806500
		Subtotal	**98**	**1031500**	**4**	**21000**	**102**	**1052500**
25	Shimoga	City Hospital	67	471200	2	8500	69	479700
		Nanjappa Hospital	27	227000	0	0	27	227000
		Ravi Poly Clinic	17	109500	0	0	17	109500
		Usha Nursing Home	145	998900	4	32000	149	1030900
		Subtotal	**256**	**1806600**	**6**	**40500**	**262**	**1847100**
26	Tumkur	Kasturba Hospital	215	1509900	6	54000	221	1563900
		Siddartha Medical College	66	467500	2	16000	68	483500
		Sridevi Hospital	85	563700	0	0	85	563700
		Bharathi Hospital	8	56000	2	9000	10	65000
		Vijaya Hospital	5	34000	1	5500	6	39500
		Subtotal	**379**	**2631100**	**11**	**84500**	**390**	**2715600**

27	Udupi							
		City Hospital	23	180000	1	2500	24	182500
		Hi-Tech Medicare Hospital	42	369400	0	0	42	369400
		Mitra Hospital	46	284500	1	2500	47	287000
		Subtotal	**111**	**833900**	**2**	**5000**	**113**	**838900**
		Total	**6938**	**76122200**	**209**	**2771700**	**7147**	**78893900**

Saroja

Diagnosed with supra-renal gland tumor (adrenal failure). She is 38 years old and has three children, ages 13, 14, and 17. She does not have a spouse. She works as a coolie. She lives 6 kilometres from Mandya and travels into the city by bus. Her monthly earnings as a coolie are 600-700 rupees. She has been aware of her medical problem for two years now, but was unable to get treatment because she could not afford it.

She had no idea about the Yeshasvini health scheme, but was told about it by the secretary of the cooperative society when he signed her up without consulting her. Once her illness worsened, he told her to go the hospital for free treatment. She is grateful for the free operations, but argues that she cannot sign up the scheme for the following year because she still cannot afford to. She also feels that now that she has had the operation, she most likely will not need another operation for the next three years.

Deviamma and Shivanna

Deviamma is 38 years of age and the wife of Shivanna, from Degnahally, Tippur Post, KR Nagar Taluk, Mysore. This is located about 70 km from Mysore city. They have three children, all teenagers. They own 3/4th of an acre of land, on which they used to cultivate ragi and paddy (rice) but have not done so for some time given that the Cauvery river has dried up. When they were cultivating, they used to earn a profit of Rs 4,000 per year.

For the last three years Shivanna has been working as a coffee picker on a coffee estate. He gets paid 50 rupees per day and works for 20 days per month, resulting in monthly earnings of 1,000 rupees. His wife also works as a casual laborer in the coffee plantation, although her work is occasional.

His monthly expenses include Rs 1,000 for food, about Rs 100 for entertainment and travel, and for the last year, Rs 900 per month for a job-related course for his eldest son. He has to cut down on the food budget in order to ensure that his son can complete his eight-month course.

He and his wife are both enrolled in Yeshasvini. He was not planning to join the scheme because he did not believe it . . . it sounded too good to be true. However, he had taken a loan from his cooperative society and the secretary just deducted the subscription fee from his interest payment amount. He was pleasantly surprised when he found out that his operation and all the expenses associated with it were free. He is determined to enroll in the scheme for the next year for both himself and his wife, but not his children . . . he does not think that they will get sick.

However, while his wife is in hospital, Shivanna is incurring Rs 100 per day in expenses. These expenses are connected with his travel to his village and back, and the food along the way, plus some extra nourishment for his wife. In order to finance this, he has taken a loan of Rs 5,000. He has leased his land

for two years for this purpose. He would like to pay back the loan in two years if possible so that he can begin to cultivate the land, provided the water problem has been resolved.

Yashodhamma

Yashodhamma is 58 years old and lives in Sandkoppaly, KR Nagar Taluk, which is about 70 km from Mysore. Her husband is Srinivas, a farmer. They have four children: three daughters and one son. They have 2 acres of land on which they grow rice. They also have one cow.

Their cow gives 6 litres of milk per day and they earn about 8,000 rupees per year from the cow. They also earn about Rs 20,000 a year from the rice cultivation. Thus, annual income is 28,000 rupees per year, which is about 2,200 rupees per month.

They are both diabetic. They spend 300-400 rupees per month on medical expenses (medicines) and they also employ a coolie to work on the property for 100 rupees per day for 20 days (which is 2,000 rupees per month). Thus, their household budget is in deficit.

She is in the hospital for a by-pass operation. She went to her local doctor in KR Nagar. After examination (and fees!), he sent her to Dr. Basappa in Mysore. She was admitted into his clinic with low BP and he kept her under observation for 12 days in the ICU. He also called her folks to tell them that she was near death. But she survived and was then referred to Vikram Hospital. Before coming to Vikram hospital, she has already spent 8,000 rupees, pawning her family jewels for this purpose.

She has survived only because of her participation in Yeshasvini. Vikram Hospital charges Rs 105,000 for a by-pass operation. She is getting it free. And all of her expenses incurred in the process of testing will also be reimbursed. Given their age, she and her husband are definitely likely to enroll in Yeshasvini for the following year.

Hospitals

Hospital in Mandya

This is a small hospital with a capacity of 60 beds. The regular OPD patients are around 100 per day. Average surgeries before Yeshasvini were about two to three per day. Mandya is the district in Karnataka with the highest number of nursing homes per capita. They have 45 nursing homes for a voting population of 8 lakhs and a total population of 13 lakhs.

Mandya was also one of the richest districts in Karnataka . . . largely because of sugarcane cultivation. However, now it is one of the poorest. This is because of the lack of water . . . there is a long running dispute between Karnataka and Tamil Nadu regarding how to share the waters of the Cauvery River, and Tamilnadu is

getting the lion's share so there is no water for the sugarcane growers in Mandya. With the decline in income, there is a sharp increase in poverty levels.

Although the doctor was skeptical about the potential of Yeshasvini to bring in new patients, he is now an enthusiastic supporter. On average, his surgical load has increased by 30-40% while his OPD has increased by 32-34%. By and large the largest number are gynecological related . . . hysterectomy.

There is a government hospital in Mandya. Treatment is notionally free there. In his hospital OPD is free but treatment and investigations are not free, unless a surgical intervention is required. Yet, people prefer to come here. This is largely because the quality of care is seen as superior, but also because the government hospital is not really free . . . one has to bribe everyone there for treatment. There is very little personal care in the government hospital. For example, before Yeshasvini started in Mandya, the government hospital used to do about 100 hysterectomies per month. However, after the four or five Yeshasvini recognized hospitals started, that number has come down to about 25 per month.

This doctor thinks that in the next year signing up people will be no problem. There is a target of 3 lakh people in Mandya for the next year. This doctor feels that he can sign them all up by himself. He lives in the village and is a great propagator.

Incidentally, this doctor also specified the other way of selling Yeshasvini. When faced with the question that many people think that they will not need surgery . . . so that is one reason why they may not sign up, his response was that even so, they might need medical care. The argument is that typically a consultation fee in Mandya is 20 rupees. With your premium of 60 rupees, you can get three free consultations. That alone ought to be sufficient for more people to sign up!

From the doctor's (nursing home owner's) point of view, being part of Yeshasvini has not only increased revenues, but also has social benefits . . . it has increased "name and fame." Note also that his hospital benefits from the increased number of patients in other ways. Although OPD is free, at least 30% of the OPD's will get admitted for some other ailment that does not require surgical intervention. They will have to pay for that. So Yeshasvini guarantees an increase in patients, and increase in revenue and fame. In addition, the pre-authorization that they receive is like cash in the bank.

GG Hospital Mysore
(Gopal Gowda Shantaveri Memorial Hospital)

This is a 300 bed hospital with a 30 bed operating theater. It's a medium size hospital. It was started as a trust in 1995 but is now expanding into a nursing school, and perhaps a medical college. The owner is closely tied to the political establishment.

While the owner would not necessarily admit that participation in Yeshasvini did not increase the number of patients, he agreed that participation was more like

a social responsibility. They do six to eight operations per day and average 150-200 outpatients per day.

In fact they think that participating in Yeshasvini creates a loss . . . they provide the example of hysterectomies, where they charge about Rs 8,000, but Yeshasvini only provides Rs 5,600. According to them, a typical hysterectomy costs about Rs 8,000 for the operation, Rs 2,000 for drugs, and 1,400 for care. Yet they continue to participate. The administrator declines to answer why they did so.

Vikram Hospital

This is a 2-year-old, 65 bed hospital, a super specialty hospital for heart care and kidneys. They average about 25 surgeries per month, and about 45 inpatients. OPD's come to about 70/80 per day. They get about one or two Yeshasvini patients per day. However, since last year they have had about 64 patients from Yeshasvini for bypass and urological problems. They are enthusiastic supporters of Yeshasvini.

*   *   *   *

All three hospitals talked about the various problems in dealing with Yeshasvini patients. Specifically, patients do not know what is covered by the scheme and what is not covered. They also pointed out that a small percentage of the patients were not poor people, i.e., some rich people are also benefiting from the scheme.

DISCUSSION AND EVALUATION

What have we learned after an examination of the first year of operations of the Yeshasvini Health Insurance Scheme in Karnataka? There are a number of issues to consider in terms of criteria by which one can judge its success.

From the perspective of providing coverage for life-saving operations for people who would not have been able to afford the operations, the scheme clearly successful. It covers a significant percentage of the target population, and has the potential to cover more. The rate of coverage is also very high (Rs 200,000 per person per year) and the highest compared to any similar schemes for this type of target population anywhere in the world. A clear indicator of success is the number of people benefited in terms of operations.

However, a drawback of the scheme is that it does not cover the poor farmer for all health related issues, but only for outpatient care and all expenses connected with surgery. The things that are not covered (diagnostic tests, and medicines) continue to be a heavy burden on poor rural families, many of which will continue to cause indebtedness. Whether the scheme can cover in future what is not covered now remains an open question. To answer this question, we would need better information regarding the health status of the target population, or at least enough data to develop an accurate actuarial assumption.

A second problem with the scheme is that although designed to be self-financed, the government of Karnataka is providing a subsidy of Rs 2.50 per participant per month during the scheme's first year. We see government participation as being necessary in the first year but not in the future.

A third and very important criticism is the fact that not all of the subscribers exercised free choice in joining the scheme. This raises a number of issues that must be addressed in subsequent years of operation. Clearly, there needs to be a massive education effort of the rural population (an extremely difficult task) but the government cooperation department also needs to be educated about the importance of communication strategies. Simply giving the secretaries of cooperatives target enrollment figures is not the solution. This is a self-financed health insurance scheme which owes its long-term success only to the fact that individuals freely chose to join. Our interviews with patients suggest that some of them would not have joined, despite the benefits, had they known the financial commitment. On the other hand, many learned that they were enrolled only when they went for operations and were grateful.

We did not find any support (based on our interviews) for the oft-repeated paternalistic argument that poor peasants do not know what is good for them and do not know how to evaluate such insurance schemes (a justification offered for the lack of free choice). Each of the farmers and peasants we talked with were very clear about the costs and benefits of enrolling in the scheme.

Although we talked with the secretaries of many cooperatives, we are unable to estimate the number of people who may not have exercised free choice in joining the Yeshasvini scheme. Of the patients we interviewed, two deliberately signed up while two did not know that they were members. We also received differing estimates from Yeshasvini Trust members as well as FHPL administrators.

There are some reasons to expect that this may not be as big a problem in future years. First, knowledge of the scheme is spreading in rural areas through word of mouth from existing patients and through the network of district hospitals. Second, the Department of Cooperation and the Yeshasvini Trust are both intending to explore new ways of patient and subscriber education. Given the surplus in the fund after the first year of operations, this issue can and must be addressed. However, there is some indication that word is getting out. For the second year of operations, 2.2 million people have signed up, and for a three-year period at least 1.1 million were repeat enrollees. Not all of the increased numbers can be attributed to better education and awareness though, as the Department of Cooperation has been continuing to issue targets for its officers. However, the element of free choice will be a defining variable in the longer term success of self-financed health insurance schemes for the poor.

The problem of free choice does not seem to be an issue in the two other areas where Yeshasvini is trying to extend its operations. For the last year, Yeshasvini

has been trying to provide health insurance to teachers in state schools, informal workers employed by the municipal corporation of Bangalore, and the entire rural population of Anekal Taluk. In all of these cases, the mobilization of potential subscribers to the scheme is taking a lot of time, as they have to go through an education process to convince people to join, thus the progress is slow. However those involved have been very successful in organizing the population in Anekal Taluk. These new extensions overcome many of the problems in the basic Yeshasvini scheme discussed in this article. Not only is the absence of free choice problem eliminated, but there is relatively no government involvement in the scheme. And there is no subsidy.

The fourth drawback is the lack of education among the subscribers about what exactly is covered and what is not. In addition, there are a number of small administrative problems pertaining to administration, the use of identity cards, and the need to have people enroll permanently or at least for a three-year period, instead of an annual enrollment process. But these are "teething" issues.

A number of features are responsible for the introduction and success of the scheme. First, the role of the government was key in getting the scheme launched. Not all government departments would have been as responsive as this department in the Karnataka state. Second, the ability to obtain buy-in from state government and private sector hospitals is clearly related to the reputation of Dr. Devi Shetty, whose credibility is great given his record as a cardiac surgeon, philanthropist, educator, telemedicine innovator, and for establishing a state-of-the-art general hospital in Karnataka. Without prodding from him, this scheme would not have gotten off the ground. Van Ginneken (1999) suggests that the dependence on the input and charisma of one person or a group of people has been an important factor in the success of several health insurance schemes around the world. That seems to be true in this case as well.

The third important feature is the relatively extensive network of hospitals in Karnataka. We do not have data (at the moment) on the number and distribution of hospitals across and within states, so we do not know whether Karnataka's network is out of the ordinary. It certainly has a more extensive network than West Bengal. Karnataka also has a large number of private medical colleges. Each medical college must have a hospital that meets certain standards, else the college will not be given a license to operate. Although we do not have enough data, some evidence suggests that the number of medical colleges per unit of population is higher in Karnataka than in many other states.

In sum, key individuals like Dr. Shetty, a responsive state department, the identification of organizations that unite widely dispersed rural populations, the network of private hospitals, and department of cooperatives' energy were key aspects in establishing a scheme of this magnitude. The issue of free choice and whether more comprehensive coverage can be provided are the two major issues to be considered for the future.

CONCLUSIONS AND IMPLICATIONS

Stepping back, the key story in this model is the law of large numbers being effectively used to provide a high degree of health security to the poorest populations of the world. This is not a new story, to be sure. The key innovative aspect is the success in mobilizing these large numbers who are geographically dispersed. The lesson here is that existing organizations that connect people must be drafted as a means through which health security can be introduced. The transferability of schemes like this depends almost entirely on such organizations existing among the target population, and the existence of a reasonable health care infrastructure.

The second key lesson is that there needs to be a methodology by which the subscriptions can be collected from poor people from dispersed rural and informal sectors, i.e., we need a system to collect their contributions (which research shows they are more than willing to pay), and to enroll people in the system. Essentially, what is required in each state is a "Health Care Backbone," a system that attracts patients and provides hospitals. One suggestion made by Dr. Shetty is to link the education and collection of premiums to the post offices, perhaps the most decentralized government institution in India.

What we learn from this case is that providing health security to large sections of the population in developing countries depends less on the resources, but more on mobilizing capacity and organization. To be sure a health care infrastructure is a necessary condition, but it is not a sufficient one. And, given a large enough subscriber base, that infrastructure can be built. This is an instance where India's large population, normally seen as a negative, can be a valuable resource increasing social health. Further, given that 70% of the world's population does not have any health security, schemes like this break valuable new ground in providing health security where it is sorely needed. Future research needs to continue to study variants of this scheme that have been introduced in both Karnataka and Gujarat.

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