UTILIZATION PATTERNS IN HEALTH INSURANCE SCHEMES FOR WOMEN AND CHILDREN

A study of Yeshasvini and Vajpayee Aarogyashri Schemes in Karnataka

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INTRODUCTION

Health financing in India has traditionally been through out of pocket expenses and in a country where 21.9 % of the population has been classified as poor or below poverty line, this leads to inaffordability of health care. Since the advent of the private sector in the 1980s, health care has improved but has resulted in high costs. The public health care system has been riddled with problems of shortage of funds, resources and personnel. Due to this, the poor have been forced to seek treatment from private facilities, often at huge personal costs. Expenditure on health care has been seen as one of the three major reasons due to which families have been pushed to poverty. Poor households traditionally lack savings and cutting back expenditure on their already meagre earnings is not always possible, pushing them further into poverty and debt. This leaves the family vulnerable and prevents them from taking care of their most vulnerable, the children and the elderly. 13.5% of Karnataka's population consists of children who are 0-6 years old. Children are the most vulnerable at this age and require extra care to enable them to lead strong, healthy lives as adults. Women of all ages serve as care-givers for these children as sisters, mothers and grand-mothers. In order to give children a healthy start in life it is not only sufficient to provide their families financial stability, it's also important to provide the women in their lives access to health care. Women have traditionally lagged behind men in seeking health care for themselves. The most common reasons women cite for not seeking care is the cost, inability to travel alone/ or long distances to seek care as well as the lack of someone else who will do the household chores when they go out. In this situation, the commonest cause for which women seek care has been child birth. India's health programs' focus on women's health has mainly been on her reproductive needs and not for others like that for breast and cervical cancer or chronic diseases like diabetes and hypertension that lead to high mortality rates in women as well. The answers to improving access to health care for women and children are being sought by provision of health finance schemes.

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In Karnataka the Yeshasvini scheme has been in existence since 2003. This scheme is run by an independent trust called the Yeshasvini Trust under the Department of Co-operative Societies in Karnataka. Members of all co-operative societies can be enrolled in the scheme. Each member pays Rs. 210 and is covered for up to Rs. 2 lakhs treatment cost at empanelled private and public hospitals. Currently all members of the extended family of the member of the cooperative society are eligible to enrol in the scheme. The age limit for enrolment is 75 years. The scheme mainly covers tertiary care and includes about 803 surgical procedures spread over 16 systemic categories. In 2006, it included medical emergencies like Bull Gore, snake bite, dog bite, which are due to agricultural causes etc., along with childbirth and neonatal care. It does not cover medico-legal cases like burns or accidents. The Department of Co-operatives has been instrumental in generating high enrolment. However recent rises in membership fees may have led to reductions or stagnation in enrolment as beneficiaries feel that the scheme is too expensive and chance of them undergoing a surgical procedure is rare. Table 1 shows the number of people enrolled every year along with the total member contributions and government contributions for each year. The amount collected from members each year increased from Rs. 60 in 2003-04 to the current Rs. 210 in 2013-14[1]. Although the enrolment appears to have

[1] *The amount collected does not match the number of members enrolled as 15% discount is given to members who enrolled at least 5 people from their families.*

Table 1: Enrolment and Expenditures in Yeshasvini Scheme

Scheme Year	Members enrolled under the scheme	Amount collected	Amount released from the Govt. (Rs. in Lakhs)	No. of O.P.D.	No. of surgeries done	Amount spent on surgeries (Rs. in Lakhs)
2003-04	16,00,000	969.09	450.00	35.814	9,047	1065.35
2004-05	20,21,661	1197.00	357.88	50,174	15,236	1847.23
2005-06	14,73,576	1634.00	1100.00	52,892	19,682	2616.94
2006-07	18,53,966	2156.00	1985.00	2,06,977	39,602	3851.00
2007-08	23,18,000	2775.00	2500.00	1,55,572	60,668	5409.00
2008-09	30,47,000	3610.00	3000.00	1,91,109	75,053	6103.00
2009-10	30,69,000	4136.00	3000.00	1,34,534	66,796	5308.00
2010-11	30,47,000	4168.00	3000.00	1,57,480	73,963	5723.00
2011-12	30,70,000	4508.00	3000.00	1,16,690	77,526	6000.00
2012-13	30,36,000	5888.00	3500.00	1,10,842	80,401	7412.00
2013-14	37,51,000	5272.00	4500.00	1,23,205	86,359	8456.00

***Source**: http://sahakara.kar.gov.in/Yashasivini.html, accessed on 24.02.15*

moved very less from 2008-09 to 2012-13, the number of surgeries performed and expenditure on the number of surgeries each year has consistently increased except in the year 2009-10. Yeshasvini trust does not compensate hospitals for the free OPDs (Out Patient Department) and from the year 2014-15, the trust has allowed hospitals to charge for each OPD consultation.

Another parallel scheme run by the Department of Health is the Vajpayee Aarogyashri Scheme (VAS) since 2010. The VAS was launched in 7 districts of Karnataka in 2009 and has been expanded to the whole state in 2012. It covers only the BPL (Below Poverty Line) population and enrolment is free. Five members of a family can be enrolled on a family floater basis with no

Table 2: Distribution of Medically Certified Deaths - Eight Leading Cause Groups for males, females and total (2011)

Cause of Death	Male	Female	Total
Diseases of the Circulatory System	30.25	29.49	29.97
Injury, Poisoning and Certain other consequences of external causes	11.29	11.05	11.20
Certain infectious and parasitic diseases	10.80	10.49	10.68
Certain conditions originating in the perinatal period	9.03	9.87	9.33
Diseases of the respiratory system	8.22	7.34	7.90
Diseases of the digestive system	8.24	3.60	6.55
Endocrine, Nutritional and metabolic diseases	5.86	7.24	6.36
Neoplasm (cancer)	5.56	7.19	6.15
Other groups	10.77	13.74	11.85
Total	100	100	100

***Source**: Report on Medical Certification of Cause of Death 2011, Directorate of Economics and Statistics, Government of Karnataka, 2013*

age limit. The scheme covers only tertiary care and currently covers 467 procedures under 7 main systemic categories. VAS does not cover OPDs. Since its inauguration in 2010, the number of beneficiaries utilizing VAS has increased from 4,095 in 2010-11 to 12,834 in 2012-13, which also coincides with the expansion of the scheme to cover the entire state.

There have been studies on both Yeshasvini and Vajpayee Aarogyashri Schemes that provide evidence of decrease in catastrophic expenditure for those families who have utilized these schemes. A study of over 31,000 households eligible for the VAS showed a 64% reduction on out of pocket expenditures on procedures in tertiary care facilities as compared to 28,000+ households where the scheme was not implemented(Wagner, Nagpal, & Mullen, 2014). Studies on Yeshasvini have also shown a reduction in out-of pocket expenses where one study showed that total borrowings for undergoing surgical procedures decreased by 30% for the Yeshasvini group as compared to the control. The out of pocket (excluding borrowings/asset sale) expenditure was also less by 46% as compared to the control groups (Aggarwal, 2009). The study also points to the fact that this reduction in expenditure was seen only in the case of surgical related hospitalizations and not for medical hospitalizations or maternity care. Similarly another study showed that only 23% of the total health expenditure was reimbursed by Yeshasvini (Rajasekhar & Manjula, 2012).

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Protecting women and children from morbidity and therefore mortality, requires access to quality health care and provision of financial means to access them. The health financing schemes hope to do just that by removing the burden of out of pocket expenditure for the vulnerable. It remains to be seen if these translate to increase in utilization by women and children.

AIM

The study aims to examine the utilization patterns by women and children (between 0-18 years of age) for Yeshasvini and Vajpayee Aarogyashri Scheme in the state of Karnataka, India.

METHODS

Claims data from Yeshasvini Trust and Suvarna Arogya Suraksha Trust was obtained for Yeshasvini & Vajpayee Aarogyashri Schemes respectively.

Yeshasvini Dataset: This dataset included data for the years 2009-2013. Analysis included only data for the years 2011-12 and 2012-13 as data for 2009-10 and 2010-11 were incomplete and did not include details on packages. The data included details on pre-authorization number, age, gender, caste, patient district, hospital district, dates of admission and discharge, package (divided in 16 systemic categories), package code (procedure code within each package), surgery/procedure performed, amount claimed by the hospital and status of the claims. Only those patients whose date of admission fell within the policy term period for that year i.e. 1st June to 31st May, were included. There were 14,000+ files that did not belong to the year 2012-13, 8,900 of these files belonged to 2011-12 and were moved to that year. The remaining was excluded from analysis. Also, only claims that were settled were considered. Duplicates if any were deleted. Thus there were, 86,000 cases for 2011-12 and 69,000 for 2012-13. All age values were converted into years; ages less than 1 year were converted to '0' years and the remaining were rounded up to completed years e.g. 18 months was converted to 1 year.

VAS Dataset: This dataset included data from 2011-2013. We included 2010-11, 2011-12, and 2012-13 for analysis. The data included details on BPL No, pre-authorization number, age, gender, caste, patient district, hospital district, dates of admission and discharge, package name (divided in 7 systemic categories), package code (procedure code within each package), surgery/procedure performed, net amount paid to the hospital, and the type of hospital. SPSS version 20 was used for data analysis.

RESULTS

A total of 1.5 lakh people have utilized Yeshasvini in the years 2011-13 and more than 24,000 people have utilized VAS in 2010-13. Distribution of Yeshasvini users shows that more women (53.4%) have utilized the scheme as compared to men (46.6%) from 2011-2013. This is not seen in VAS where more men (58.8%) have used it compared to women (41.2%) from 2010-2013. Members constituting the reproductive age-group of 19-36 years are the highest users of Yeshasvini (34.2%) closely followed by the elderly (55-75 years) at 33.2% (Tables 3 & 4). This is in contrast to VAS, where the 37- 54 year olds are the highest users (35%). The percentage of children (0-18 years) using the scheme is more in VAS (21.9%) as compared to Yeshasvini (7.4%). When we look at scheme usage by age and gender, it is seen that in both schemes women lag behind men in all age categories except in the reproductive age group of 19-36 years (Tables 5 & 6).

Caste-wise distribution of Yeshasvini showed that the majority of the users belonged to the general/other category (84.4%), followed by the OBC

Table 3: Distribution of Yeshasvini users by age (2011-2013)

Age	2011-12		2012-13		Total	
	Frequency	Percent	Frequency	Percent	Frequency	Percent
0-18 years	6385	7.4	3854	6.8	10239	7.2
19-36 years	29745	34.5	19017	33.7	48762	34.2
37-54 years	22012	25.5	14283	25.3	36295	25.5
55-75 years	28024	32.5	19270	34.1	47294	33.2
> 75 years	1	.0	8	.0	9	.0
Total	**86167**	**100**	**56432**	**100**	**142599**	**100**

Table 4: Age-wise Distribution of Gender of Yeshasvini Users (2011-13)

Age	Female		Male		Total	
	Frequency	Percent	Frequency	Percent	Frequency	Percent
0-18 years	3943	38.9	6203	61.1	10146	100
19-36 years	38350	78.7	10400	21.3	48750	100
37-54 years	17810	49.1	18464	50.9	36274	100
55-75 years	15940	33.7	31295	66.3	47235	100
> 75 years	3	33.3	6	66.7	9	100
Total	**76046**	**53.4**	**66368**	**46.6**	**142414**	**100**

Table 5: Distribution of VAS users by Age (2010-2013)

Age	2010-11		2011-12		2012-13		Total	
	Frequency	Percent	Frequency	Percent	Frequency	Percent	Frequency	Percent
0-18 years	1122	27.5	1947	25.7	2298	17.9	5367	21.9
19-36 years	1129	27.6	1899	25.1	2778	21.6	5806	23.7
37-54 years	1200	29.4	2439	32.2	4919	38.3	8558	35.0
55-75 years	619	15.1	1254	16.6	2765	21.5	4638	18.9
> 75 years	17	.4	24	.3	73	.6	114	.5
Total	**4087**	**100**	**7563**	**100**	**12833**	**100**	**24483**	**100**

Table 6: Age-wise Distribution of Gender of VAS Users (2010-13)

Age	Female		Male		Total	
	Frequency	Percent	Frequency	Percent	Frequency	Percent
0-18 years	2446	45.6	2921	54.4	5367	100
19-36 years	2916	50.2	2890	49.8	5806	100
37-54 years	3293	38.5	5265	61.5	8558	100
55-75 years	1408	30.4	3230	69.6	4638	100
> 75 years	30	26.3	84	73.7	114	100
Total	**10093**	**41.2**	**14390**	**58.8**	**24483**	**100**

Table 7: Distribution by Caste of Yeshasvini users (2011-2013)

Caste	2011-12		2012-13		Total	
	Frequency	Percent	Frequency	Percent	Frequency	Percent
APL	632	0.7	0	0	632	0.4
BPL	1178	1.4	0	0	1178	0.8
OBC	11625	13.6	5227	9.3	16852	11.9
Minority	828	1.0	0	0	828	0.6
Others/ General	69604	81.3	49971	88.8	119575	84.3
SC	1243	1.5	731	1.3	1974	1.4
ST	520	0.6	313	0.6	833	0.6
Total	**85630**	**100**	**56242**	**100**	**141872**	**100**

Table 8: Distribution by Caste of VAS users (2010-2013)

Caste	2010-11		2011-12		2012-13		Total	
	Frequency	Percent	Frequency	Percent	Frequency	Percent	Frequency	Percent
Minority	394	9.6	787	10.4	1462	11.4	2643	10.8
Others	3274	80.0	5818	76.9	9749	76.0	18841	76.9
SC	268	6.5	664	8.8	1024	8.0	1956	8.0
ST	159	3.9	295	3.9	599	4.7	1053	4.3
Total	**4095**	**100**	**7564**	**100**	**12834**	**100**	**24493**	**100**

(11.9%). There was no clear definition of the different castes included in the dataset and BPL and APL (Above Poverty Line) were included as a part of caste. VAS covered only BPL and their distribution also showed a higher concentration of others (76.9%). Both schemes show low levels of use by SCs (Scheduled Caste) and STs (Scheduled Tribes).

Yeshasvini beneficiaries resided most commonly in Mandya (11.7%), Tumkur (7.4%) and Davangere, (7.4 %), followed by Bagalkote (6.8%) and Belgaum (6.1%) (Figure1). As compared to Yeshasvini, VAS is more prevalent in the North with the highest number of users residing in Gulbarga (21.1%), Belgaum (11.7%) , Bellary (10.7%), Bidar (7.7%) and Raichur (7.6%) (Figure 2). This can be due to the fact that VAS was first introduced in the Gulbarga division and introduced into the Bangalore Division only in 2012-13 which may have resulted in lower numbers. Bangalore was the most common destination for both Yeshasvini (20%) and VAS users (67.4%). Most Yeshasvini users preferred hospitals in their own districts except Bellary, Chikkaballapura, Kodagu, Ramanagar and Yadgir which preferred Bangalore. Users from Koppal and Gadag preferred Dharwad hospitals.

VAS users had access only to empanelled hospitals in 16 districts in the period 2010-13 with highest number of hospitals empanelled in Bangalore followed by Belgaum.

Majority of hospitals empanelled under Yeshasvini and VAS are private hospitals. 93.5% of VAS users have sought treatment in private hospitals. We were unable to generate this data for Yeshasvini users as the dataset did not include private or public classification.

Yeshasvini covers a total of 16 packages as opposed to 7 covered by VAS. Yeshasvini packages are categorized broadly based on different body systems[2] . Each package

[2] *Yeshasvini Packages: Cardio Vascular System(CVS), Orthopaedics(Ortho), Paediatrics(PED), Obstetrics and Gynaecology(OBG), Medical emergencies(ME), Gastroenterology(GST), General(GNL), Oncology(ONCO), Neonatal Intensive care Unit (NICU), Endocrinology(END), Ear Nose Throat(ENT),Urology(URO), Ophthalmology(OPHTHO), Neurology(NEURO) , Vascular(VAS)and Thoracic(THR) .*

comes under a broad category which is further divided into package codes depending on the procedure, e.g. CVS is the package name and CVS.1 is the package code which stands for coronary angiogram. The Yeshasvini package codes changed in January 2012 and hence 2011-12 has a mixture of old and new codes. 14,931 records were missing their package codes and there was a lack in uniformity in application of codes. While analysing we have only considered the surgeries with codes for analysis of surgery names. Yeshasvini, unlike VAS, covers some secondary level surgical procedures along with tertiary care procedures. But it does not cover medico-legal cases like burns and accidents. Yeshasvini users most commonly used Ophthalmology (OPHTHO) (29%) followed by Obstetrics and Gynaecology packages

Majority of hospitals empanelled under Yeshasvini and VAS are private hospitals. 93.5% of VAS users have sought treatment in private hospitals.

Figure 1: % Distribution of Yeshasvini users by District of Residence (2011-2013)

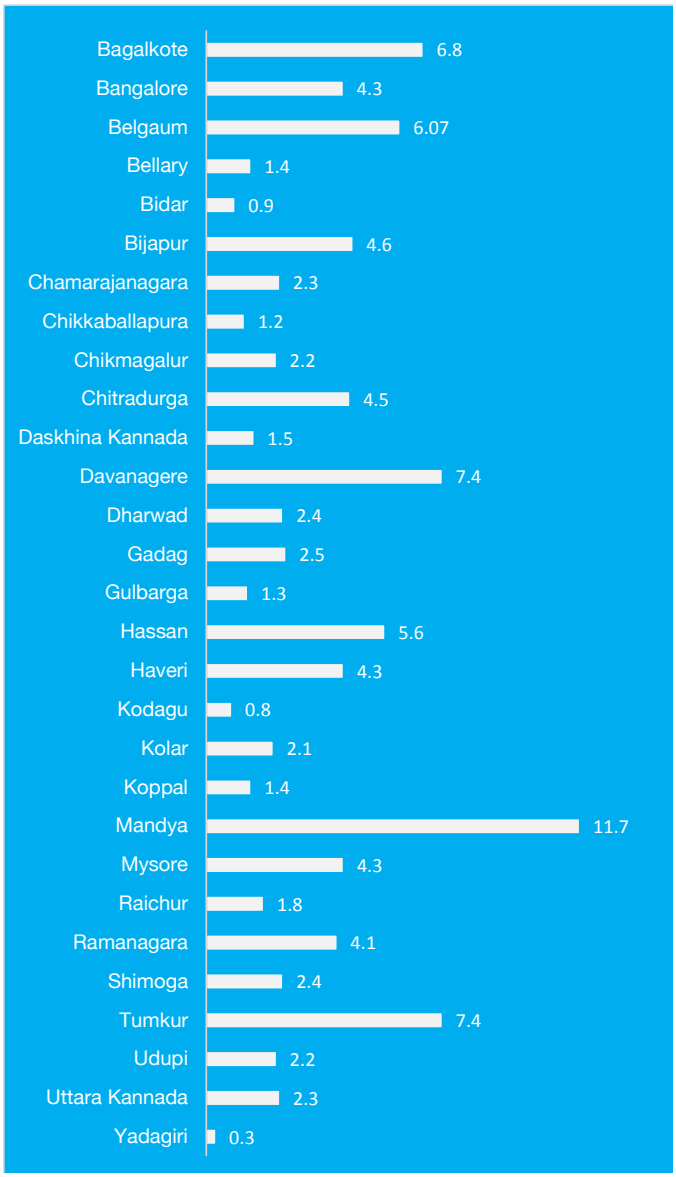


Figure 2: % Distribution of VAS Users by District of Residence (2010-2013)

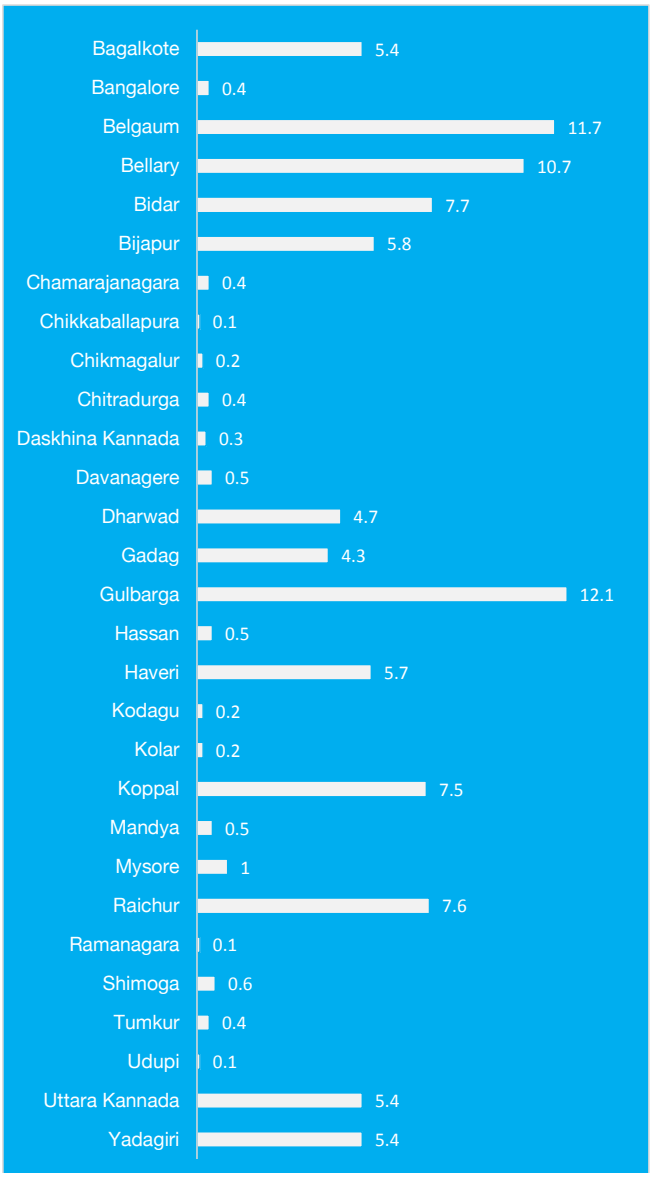


Figure 3: % Distribution of Yeshasvini Users by Hospital District (2011-13)

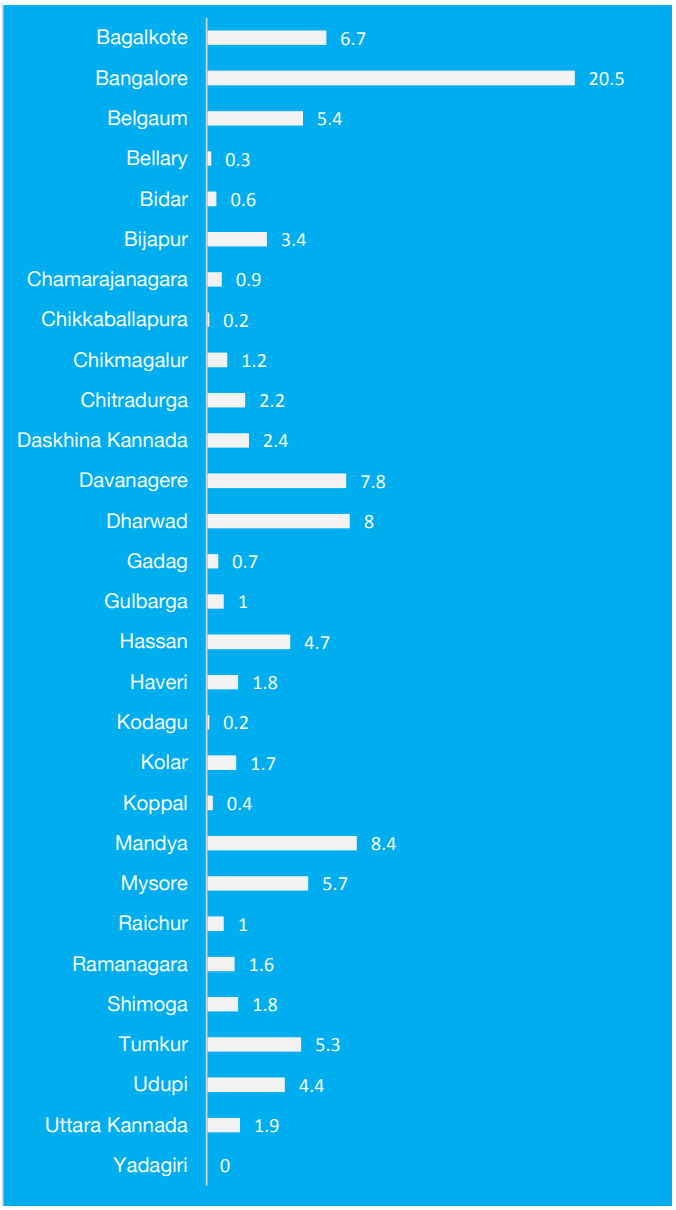
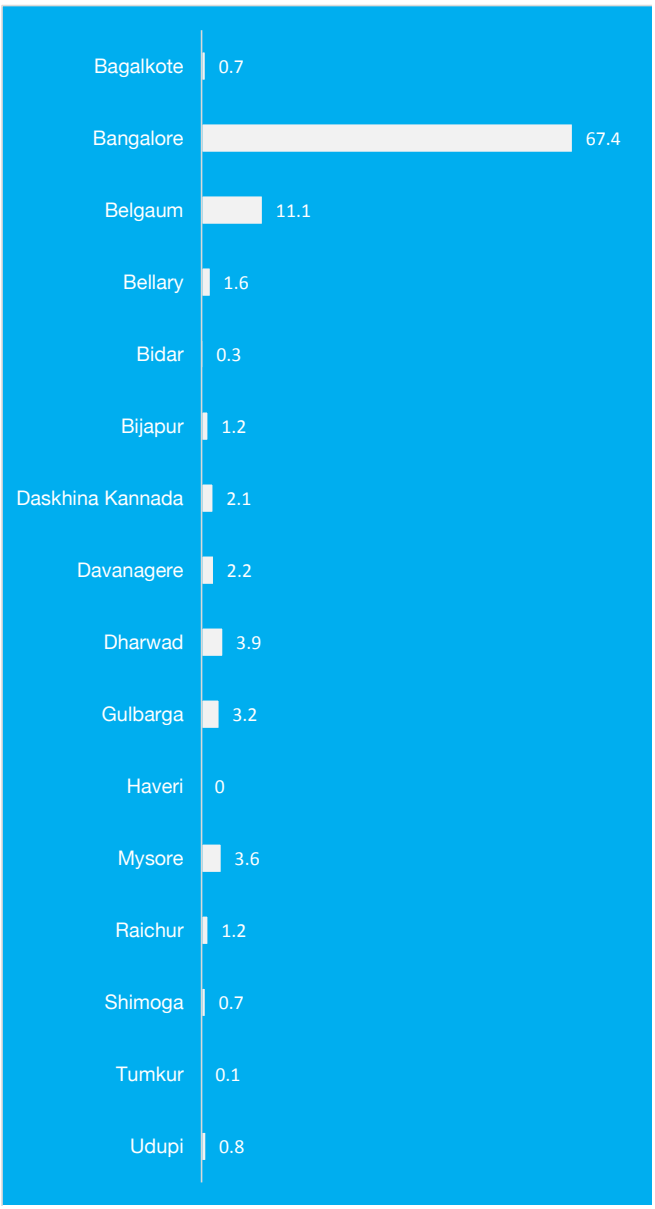


Figure 4: % Distribution of VAS Users by Hospital District (2010-13)



(OBG) (27%), General (GNL) (13%) and Cardiovascular (CVS) (12%) (Figure 5). Obstetrics and Gynaecology was used almost entirely by women which has resulted in the higher usage of Yeshasvini for women as compared to men whose usage is higher for almost all other packages including NICU. More male babies (53%) were admitted for neonatal intensive care as compared to baby girls. This pattern of lower treatment seeking for girls was observed in all packages except for endocrine and oncology packages (Figure 6). Of the 40,987 who had sought treatment under OBG package, about 19,900 have undergone caesarean sections, followed by 6620 women who have had normal deliveries and 4200 women who have had their uteruses removed (hysterectomy). Ophthalmology was the most commonly used by 55-75 year olds (67%) and Cataract operation was the most common procedure. The elderly age group was also the highest user for CVS (47.6%). VAS covers mainly tertiary care surgical and medical procedures grouped under Burns, Cardio Vascular System, Cancer, Poly trauma, Renal Diseases, Neurological Diseases and Neonatal. Cardiovascular claims were largest in number (53%) followed by cancer treatment (21%) and neurological diseases (12%) (Figure7). Number of women using VAS was high for burns treatment (57.2%) and cancer treatment (53.5%) while more

Figure 5: Distribution of Yeshasvini Packages by usage (2011-13)

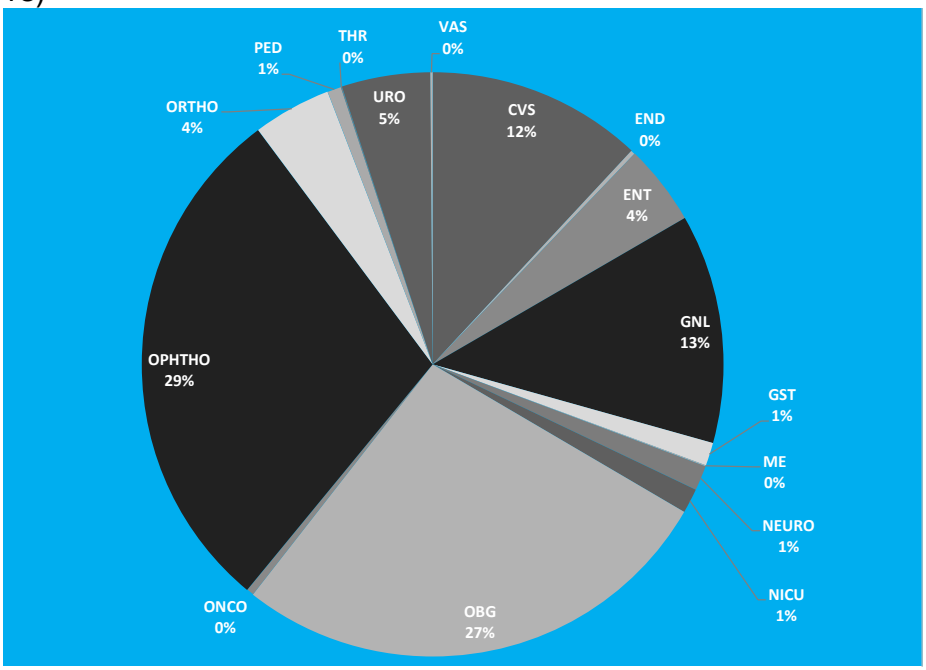
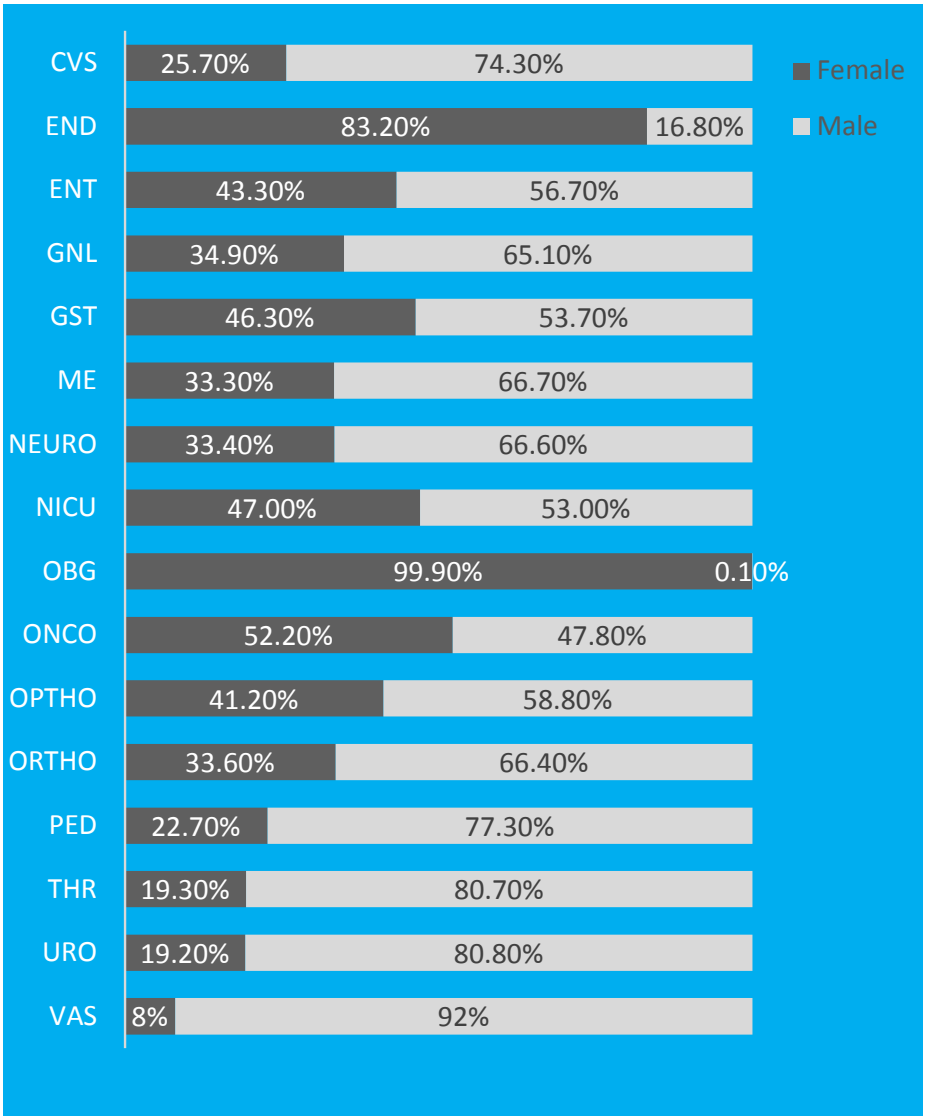


Figure 6: Distribution of Yeshasvini Packages by Gender (2011-13)



men sought treatment in other categories (Figure 8). When grouped by age, usage of VAS for CVS procedures is almost same for 0-18 year olds (29.1%) and 37-54 year olds (30.8%). Cancer treatments were most utilized by the 37- 54 age group. Children were the highest treatment seekers for burn injuries (46%). On closer inspection we saw that more girls (52.8%) sought treatment for burns as compared to boys. Girls fall behind in treatment seeking in all other package categories as with Yeshasvini. The elderly are also among the lowest treatment seekers under VAS which is in contrast to Yeshasvini where the elderly

Yeshasvini users most commonly used Ophthalmology (OPHTHO) (29%) followed by Obstetrics and Gynaecology packages(OBG) (27%), General (GNL) (13%) and Cardiovascular (CVS) (12%)

are among the highest.

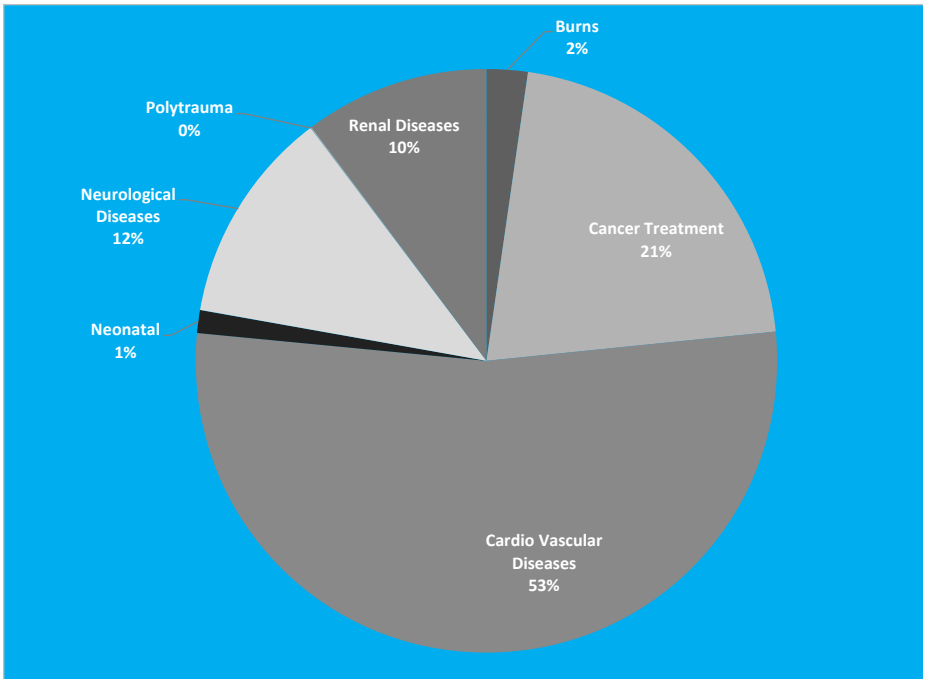
33% of the total expenditure in Yeshasvini was for cardiac surgeries while 72% of the

total expenditure in VAS was for cardiac surgeries (Table 9). The most expensive surgeries in Yeshasvini were vascular surgeries which cost about Rs.24,367 per person followed by Oncology at Rs. 23,774 and CVS at Rs. 23,478 per person. The least expensive were medical emergencies at Rs. 1846 and NICU at Rs. 2714 per person. VAS was more expensive as compared to Yeshasvini. A CVS surgery on an average cost Rs. 67,681 followed by almost equal per person expenditure on both cancer Rs. 32,537 and Neurology treatment Rs. 32,439 (Table 10). Here the least expensive were renal diseases with an expenditure of Rs. 18,307 per person.

Cardiovascular claims were largest in number (53%) followed by cancer treatment (21%) and neurological diseases (12%) in VAS.

When we look at utilization only in children (0-18 years) in Yeshasvini, most usage has been for the NICU package which is expected to follow the high number of complicated deliveries covered. Expenditure on NICU however is among the lowest while CVS surgeries are the most expensive (Table 11). VAS does not cover NICU but its highest usage has been for CVS surgeries which naturally are the most expensive (Table 12).

Figure 7: Distribution of VAS Packages by usage (2011-13)



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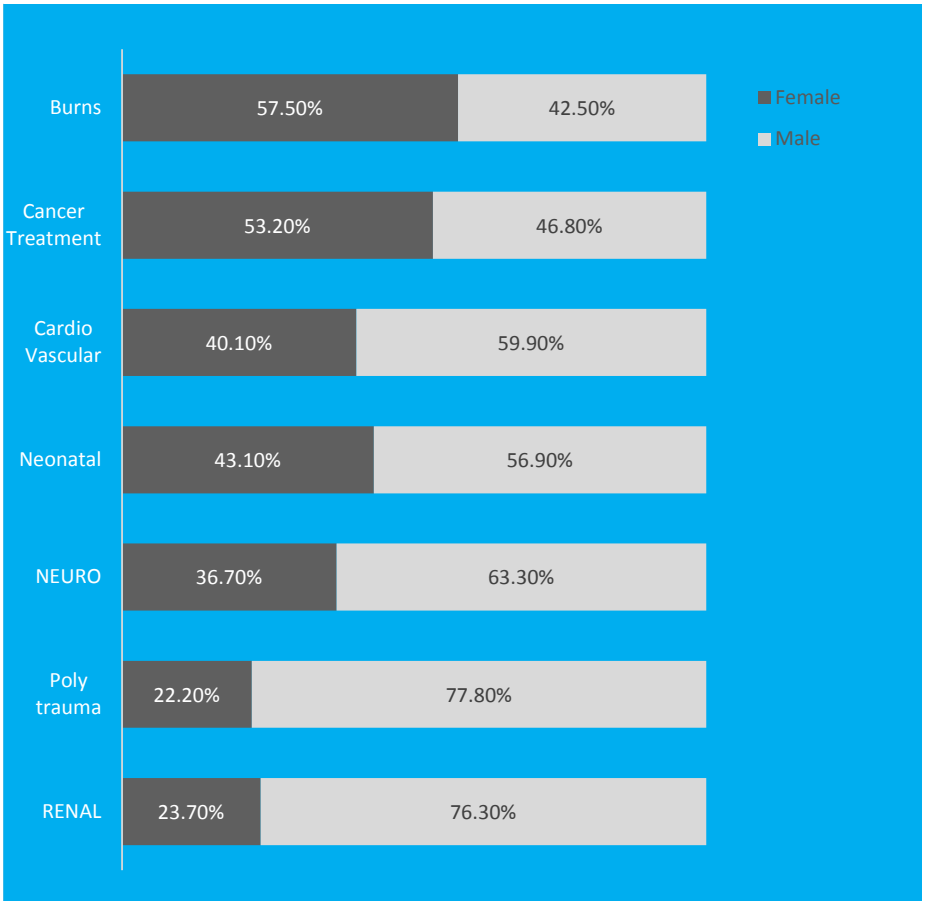

Table 9: Expenditure per Package in Yeshasvini (2011-13)

Package	Frequency	Mean Expenditure (Rs.)	Total Expenditure (Rs.)	Percentage
CVS	18,035.0	23,478.6	42,34,36,209.0	32.9
END	345.0	9,027.0	31,14,315.0	0.2
ENT	6,743.0	6,419.8	4,32,88,659.0	3.4
GNL	19,111.0	6,641.4	12,69,23,462.0	9.9
GST	1,913.0	12,496.9	2,39,06,566.0	1.9
ME	99.0	1,846.5	1,82,800.0	0.0
NEURO	2,075.0	19,959.1	4,14,15,129.0	3.2
NICU	2,042.0	2,714.8	55,43,657.0	0.4
OBG	40,987.0	6,425.8	26,33,73,469.1	20.5
ONCO	591.0	23,774.9	1,40,50,947.0	1.1
OPHTHO	43,423.0	4,322.7	18,77,04,032.4	14.6
ORTHO	6,552.0	10,689.2	7,00,35,836.5	5.4
PED	1,148.0	8,541.9	98,06,087.0	0.8
THR	88.0	18,342.5	16,14,136.0	0.1
URO	7,429.0	8,981.9	6,67,26,195.8	5.2
VAS	192.0	24,379.2	46,80,800.0	0.4
Total	**1,50,773.0**	**8,528.1**	**1,28,58,02,300.8**	**100**

Table 10: Expenditure per Package in VAS (2010-13)

Package	Frequency	Mean Expenditure (Rs.)	Total Expenditure (Rs.)	Percentage
Burns	559	30,237.7	1,69,02,881.0	1.4
Cancer Treatment	5148	32,537.6	16,75,03,593.0	13.8
Cardio Vascular Diseases	12997	67,861.3	88,19,93,803.0	72.5
Neonatal	310	28,917.8	89,64,515.0	0.7
Neurological Diseases	2908	32,439.7	9,43,34,760.0	7.8
Polytrauma	17	26,205.9	4,45,500.0	0.0
Renal Diseases	2508	18,306.1	4,59,11,728.0	3.8
Total	**24447**	**49,742.6**	**1,21,60,56,780.0**	**100**

Table 11: Expenditure on children (0-18 years) in Yeshasvini (2011-13)

Package	Frequency	Mean Expenditure (Rs.)	Total Expenditure (Rs.)	Percent
CVS	1190	46,940	5,58,58,600	49.1
END	10	8,220	82,200	0.1
ENT	1674	5,534	92,64,580	8.1
GNL	1878	6,186	1,16,18,039	10.2
GST	142	12,053	17,11,516	1.5
ME	10	1,625	16,250	0.0
NEURO	120	22,775	27,33,003	2.4
NICU	2027	2,678	54,29,157	4.8
OBG	506	5,579	28,22,900	2.5
ONCO	10	18,885	1,88,848	0.2
OPHTHO	852	8,143	69,38,166	6.1
ORTHO	698	9,657	67,40,844	5.9
PED	630	9,355	58,93,387	5.2
THR	18	16,924	3,04,636	0.3
URO	470	8,847	41,58,290	3.7
VAS	4	12,750	51,000	0.0
Total	**10239**	**11,115**	**11,38,11,416**	**100**

Table 12: Expenditure on children (0-18 years) in VAS (2010-13)

Disease	Frequency	Mean Expenditure (Rs.)	Total Expenditure (Rs.)	Percent
Burns	266	29,468.72	78,38,679	2.7
Cancer Treatment	307	28,741.71	88,23,705	3.0
Cardio Vascular Diseases	3780	65,653.45	24,81,70,037	85.4
Neonatal	303	28,727.44	87,04,415	2.9
Neurological Diseases	352	29,910.49	1,05,28,493	3.6
Polytrauma	6	24,000.00	1,44,000	0.0
Renal Diseases	339	18,584.60	63,00,180	2.1
Total	**5353**	**54,270.41**	**29,05,09,509**	**100**

DISCUSSION

More women than men have utilized Yeshasvini in the 2 years as compared to VAS. But, when we remove OBG's contribution to Yeshasvini we see that a mere 35% of the users in Yeshasvini are women as compared to 53% when OBG is included. OBG is also the most commonly used package in Yeshasvini, and it has successfully helped women gain access to obstetrics and gynaecology services. The most common claim in OBG was for caesarean section followed by normal delivery, both of which accounted for 65% of its use. Hence we can say that women are largely using Yeshasvini for child birth services. However no data is available on whether these women have also availed ANC services. Another point to note is that the socio-economic status of the women utilizing Yeshasvini from the dataset shows that majority of the beneficiaries belong to the general category followed by the OBC. Among the most vulnerable in the society are the SCs and STs which have a low representation in Yeshasvini. This is consistent with other study findings which show that Yeshasvini enrolees were relatively better off than non-enrolees and less likely to belong to SC or ST groups (Aggarwal, 2009). Therefore, although Yeshasvini has promoted the use of hospital facilities for delivery services, this increased use may not be by women from the most marginal backgrounds. VAS does not include child birth services that usually fall under secondary care which may be one of the reasons that only 40% of the beneficiaries in VAS are women. However, this is still higher than Yeshasvini when contribution by OBG is removed. Women using VAS belong to the BPL category and have come most commonly for treatment of burn injuries or cancer. Yeshasvini covers only radiation and surgical procedures for cancer and not medical treatment (chemotherapy) as opposed to VAS which covers all three. A look at mean expenditures incurred in both schemes for cancer treatment shows that they tend to be among the most expensive after cardiovascular surgeries. Deaths due to cancer also occur more among women than men in Karnataka (Table2). Hence lower number of women accessing Yeshasvini services for cancer treatment as compared to VAS may point to a need for change in cancer coverage in Yeshasvini to allow more access to women.

When we remove OBG's contribution to Yeshasvini we see that a mere 35% of the users in Yeshasvini are women as compared to 53% when OBG is included.

More women accessing treatment for burns in VAS follows the epidemiology of burns where the most common victims are women and children at home using unsafe cooking appliances (Gowri, A, Powar, Honnungar, & Mallapur, 2012). A closer look shows that it is more concentrated in children 18 years and below (47%) followed by 19-36 year olds (41%). According to WHO over 10,00,000 people are moderately or severely burnt in India and is one of the leading causes of Disability-Adjusted Life years (DALYS)

More women accessing treatment for burns in VAS follows the epidemiology of burns where the most common victims are women and children at home using unsafe cooking appliances.

("WHO | Burns," 2014). Hence number of burns victims seen in VAS may only be the tip of an iceberg and coverage for burns may require long term plan for recovery and not just hospital treatment. As Yeshasvini does not cover burn injuries, we cannot make a comparison. 26% of the deaths in India is attributed to cardio vascular disease (CVS) which is the biggest cause of mortality, (WHO, 2014). A look at the difference in death rates associated to CVS causes between men and women is very minimal (Table 2). Men are at a higher risk of developing CVS diseases than women, therefore similar death rates for women may mean that they remain undiagnosed or untreated for CVDs. This may be reflected by the lower rate of utilization of CVS surgeries by women (Table 2). Non Communicable Diseases(NCDs) also more commonly remain undiagnosed among women, rural population and those in lower 2 quintiles of health which was compounded by high out-of pocket expenditure (Basu & King, 2013). In short, if you are a poor, older woman and living in rural areas you are more likely to remain undiagnosed for major NCDs[3] and therefore are more at risk for developing heart disease. What is also of concern is increasing presence of CVDs in the younger age groups of 35 to 60 years with its prevalence in women becoming similar to that of men (Chauhan & Aeri, 2013). This may point to a large yet unmet need for treatment for cardiovascular diseases especially among women. Between 2005 and 2015, India is projected to cumulatively lose USD 236.6 million because of heart disease, stroke, and diabetes costing 1% of the GDP(Deloitte, 2011).

Generally health expenses for women are higher than that for men due to costs associated with child birth. We see that health expenses for women is not just restricted to reproductive care but also extends to cardio vascular diseases, cancer and burns. The question remains on why utilization by women is lower in both schemes. One reason could be that most hospitals which have been utilized are in Bangalore which also has the largest number of empanelled hospitals. As mentioned earlier women frequently label distance to hospital as one of the major reasons for not seeking health care, which might have been one of the reasons why women chose not take treatment. The other reason could be the lack of knowledge of scheme coverage, which could be especially true for VAS which is a new scheme.

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Like women, children are also victims of poverty when it comes to accessing health care. This is especially true for girls in India. High cost surgical interventions are required most commonly for birth defects like, neural tube defects, congenital heart defects, those of the abdominal wall, cleft lip and palate etc. In India it is estimated that about 1.7 million birth defects occur annually i.e. roughly 6-7 children in every 100 is born with a birth defect (Ministry

[3] *Major NCDs include cardiovascular diseases like angina and stroke, diabetes, hypertension, osteoarthritis, asthma/reactive airway disease, cataracts, chronic obstructive lung disease (chronic obstructive pulmonary disease/ emphysema/chronic bronchitis), depression.*

of Health and Family Welfare, 2013). Higher prevalence of these birth defects is most seen in low and middle income countries where the diagnosis and post diagnostic care is also low. With the decrease in infant mortality rates due to improved maternal screening and treatment, the incidence of congenital malformations in India has become more apparent. The most common defects seen globally and in India are congenital heart defects followed by neural tube defects. Surgical interventions for the above conditions are expensive which cannot be afforded by the poor.

Representation of children in Yeshasvini is only 7.2 % as opposed to 21.9% in VAS.

Representation of children in Yeshasvini is only 7.2 % as opposed to 21.9% in VAS. Children in Yeshasvini are most commonly represented by the neonatal group(0-28 days old) with 19% being admitted to Neonatal Intensive Care Unit which is expected as large number of mothers have undergone caesarean section within the scheme. This is closely followed by children undergoing general surgeries and those for ear nose and throat (ENT). Care for children under Yeshasvini is not only provided under NICU and paediatric surgeries but also under other categories like General and ENT. VAS only has one separate neonatal surgery component for children and no separate General or ENT categories. In VAS, 70% of the children admitted have undergone cardiovascular surgeries as opposed to 11% of those in Yeshasvini. The most common causes for CVS surgeries in this age group are congenital heart diseases or rheumatic heart diseases. It is unclear from the data available as to why more proportion of children is accessing VAS as compared to Yeshasvini which has similar disease coverage and has been available for a longer time. One of the causes for lower enrolment among children may be the need for payment during enrolment in Yeshasvini as compared to VAS which has no fees. In both schemes however, CVS surgeries are still the most expensive with an average of Rs 46,940 spent in Yeshasvini and Rs. 65,653 in VAS on children (0-18 years). Neurology and oncology are other two expensive procedures in children in both schemes. It should be noted that treatment costs for burns in VAS for children is almost as high as that for oncology, neurology and paediatric surgeries reiterating the importance of considering the high cost of treating burn injuries in children in program planning. The average cost of providing NICU care for newborns in Yeshasvini is about Rs.2678 which is the second lowest expenditure within 0-18 years, which tells us that providing such services as part of health finance schemes can be feasible and prevent neonatal deaths.

CONCLUSIONS AND RECOMMENDATIONS

The study gives us an idea of how the utilization patterns for women would look under health financing schemes. Yeshasvini and VAS provide access to quality health care in women and children in Karnataka. Women utilize Yeshasvini mainly for the purpose of childbirth, while VAS has been utilized for better access to burns and cancer treatment. But levels of utilization for other disease-groups notably cardiac diseases remain low in both schemes. It could be reflective of a gender bias in health care seeking behaviour but can be confirmed only if the disease incidences are known. More studies are required to understand what drives utilization of health finance schemes by women as mere

increase in affordability is not the only solution. The following recommendations look at improving utilization among women and therefore their children.

A. Increasing the number of hospitals enrolled in both schemes to beyond Bangalore: Efforts should be made to increase the number of hospitals empanelled in every district, especially in small towns to enable women to visit hospitals closer to their homes. Frequently low package rates have been suggested as the reason for many private hospitals not getting empanelled under these schemes. We have also seen that in Yeshasvini some package rates are lower than those in VAS for the same surgery. Improvement of treatment facilities available at the district or taluk level hospitals could also help in improving access.

B. To increase awareness of diseases covered for women and children: Increasing awareness among women coming for OBG services for disease coverage under Yeshasvini and VAS could be a starting point for increased awareness on the schemes. Private clinics and local PHCs should also be roped in to raise awareness levels among women about the utility of these schemes.

C. Increase enrolment and therefore utilization among SCs and STs: The study has found that the

rates of utilization of both the schemes are low among SCs and STs and therefore women and children belonging to this group. As the most vulnerable are also the hardest to reach, special efforts should be made to improve awareness of schemes among the marginal population. Help should be sought from local government bodies like the panchayats to improve enrolment and utilization. In the case of marginalised population, efforts should be made to make the enrolment criteria less stringent e.g. like the need to be a part of a co-operative or lower user fees.

D. Improvement in coverage: Focus should be on inclusion of primary and preventive care as part of package which will prevent complications and therefore lower treatment costs in the long run. Currently both schemes focus mainly on surgical procedures; but what of coverage for hospital stays that do not need surgeries. Hospital admission is a costly affair for the poor even if there is no surgery. People can get admitted for various infectious and non-infectious causes like malaria, dengue, food poisoning, sickle cell anaemia or cardiac arrest which require special care but not surgery. Coverage of medical hospitalization should also be part of the schemes. Inclusion of medico-legal cases should be part of Yeshasvini, e.g accidents. Currently only medical emergencies due to agricultural accidents are included under Yeshasvini.

E. Integration of all three health finance schemes in Karnataka i.e. Yeshasvini, VAS and Rashtriya Swasthya Bima Yojana (RSBY) to cover primary, secondary and tertiary care under one scheme: This should occur along with the provision of health care for all. Knowledge on implementation obtained from the above 3 schemes should be used as the blue-print to develop a system that encompasses all strata of society to provide health

care at all levels.

F. **Generation of Useful Health data:** Having a state level dataset which integrates usage patterns of the above health schemes will give us better information on utilization trends as well as disease prevalence data for all age groups. More attention needs to be paid to cleaning of data, especially in the case of Yeshasvini to improve accuracy of findings. Improvement in reporting of diagnosis of beneficiaries based on ICD-10 disease codes in the datasets can give us disease-specific prevalence rates. This information will allow policy makers to improve health schemes directed towards gender, age-group, disease group, etc.

LIMITATIONS OF THE STUDY

Analysis of Yeshasvini data was limited to 2011-12 and 2012-13 due to missing data on packages for the year 2010-11. The dataset also required a large amount cleaning and change in package codes in January 2012, made it difficult to obtain summary statistics on the type of surgery done. Paediatrics as a separate category was included in January 2012 and this may be the reason for fewer number of paediatrics cases. These data are most likely part of the General Surgery category.

REFERENCES

Aggarwal, A. (2009). Impact Evaluation of India's "Yeshasvini" Community Based Health Insurance Programme (No. 2) (pp. 1–32).

Basu, S., & King, A. C. (2013). Disability and chronic disease among older adults in India: detecting vulnerable populations through the WHO SAGE Study. American Journal of Epidemiology, 178(11), 1620–8. doi:10.1093/aje/kwt191

Chauhan, S., & Aeri, B. T. (2013). Prevalence of cardiovascular disease in India and it is economic impact- A review, 3(10), 1–5.

Deloitte. (2011). Cardiovascular diseases in India Challenges and way ahead (pp. 1–32).

Gowri, S., A, N. V., Powar, R., Honnungar, R., & Mallapur, M. D. (2012). Original Research Paper Epidemiology and Outcome of Burn Injuries Introduction : Corresponding Author : Conclusion : Discussion : References :, 34(4), 971–973.

Ministry of Health and Family Welfare, G. of I. (2013). Rashtriya Bal Swasthya Karyakram (RBSK) Child Health Screening and Early Intervention Services under NRHM. Operational Guidelines.

Rajasekhar, D., & Manjula, R. (2012). A comparative study of the health insurance schemes in Karnataka (pp. 1–191). Retrieved from https://www.karnataka.gov.in/spb/Documents/FinalReport-Health_insurance_project.pdf

Wagner, Z., Nagpal, S., & Mullen, P. (2014). Government health insurance for people below poverty line in India : quasi-experimental evaluation of, 5114(September), 1–13. doi:10.1136/bmj.g5114

WHO. (2014). World Health Organization-Noncommunicable Diseases(NCD) Country Profiles, 2014 (p. 2014). Retrieved from http://www.who.int/nmh/countries/ind_en.pdf?ua=1

WHO | Burns. (2014). Retrieved February 01, 2015, from http://www.who.int/mediacentre/factsheets/fs365/en/

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