

## Extended Abstract

### **Title: Gender Bias in Hospitalization Financing from Scarce Economic Resources in India: A Life Course Study**

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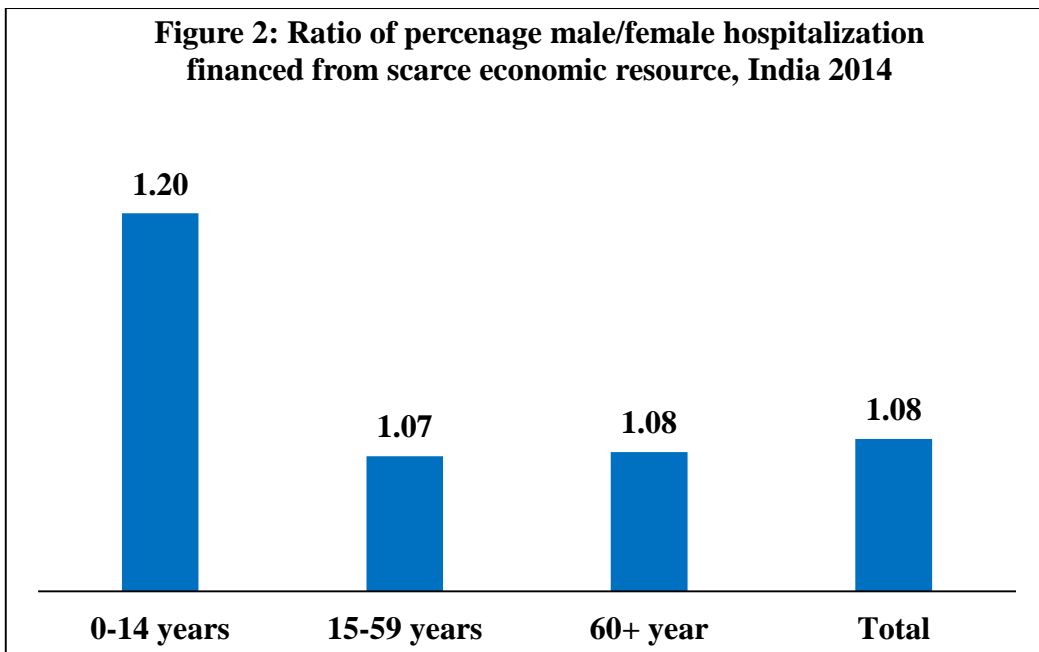
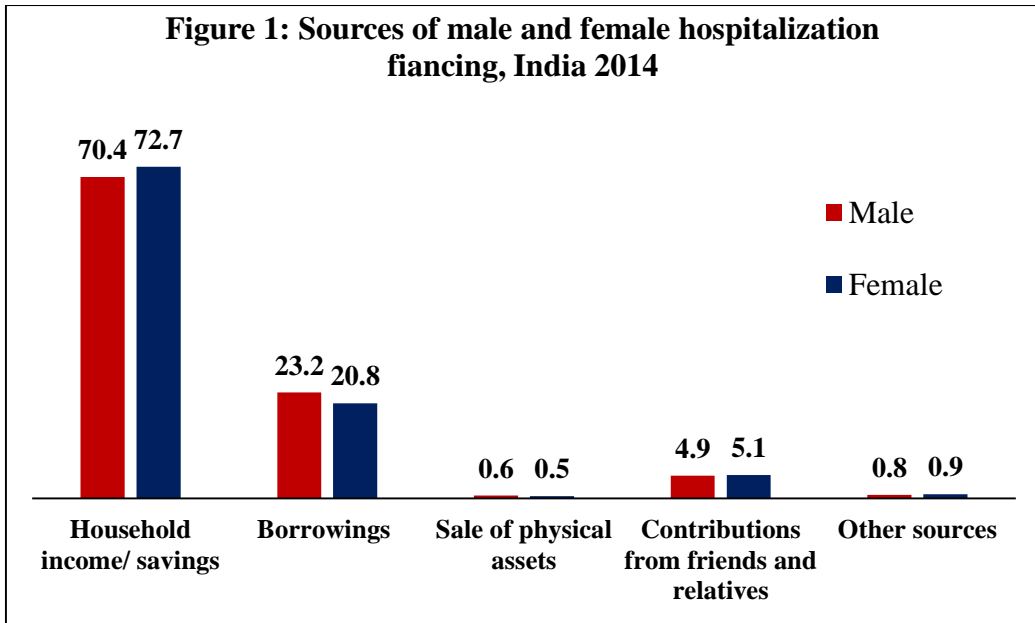
**Introduction:** - Household health investment on its members depends on their economic and emotional utility, which varies across the life course. Health investment till adolescence gives economic return, once it enters into work force in adulthood. But, there is no current and prospective economic return after retirement in older age. And, emotional utility of the members depends on existing social norms. Hence, investment in female health till adolescent and older age is considered as neither remunerative nor emotional gainful by the patriarchal Indian household. Having low capacity to pay for the health care financing, household discrimination against female is obvious once it becomes catastrophic. In this context present study examine the life course variation in gender bias in hospitalization financing from scarce economic resources (SER).

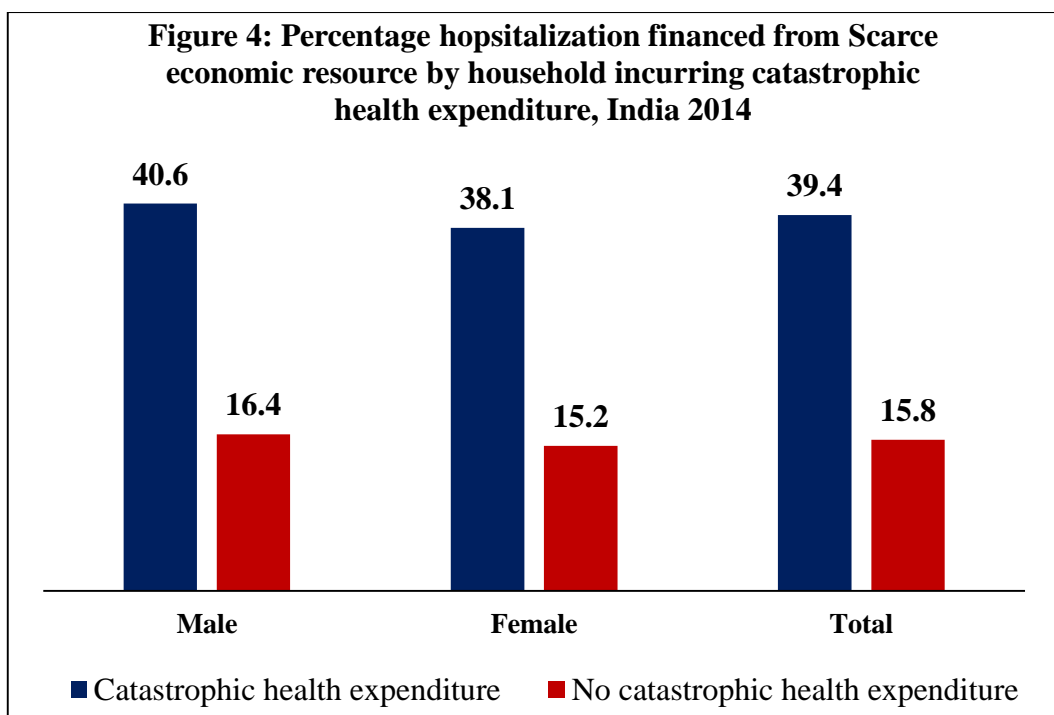
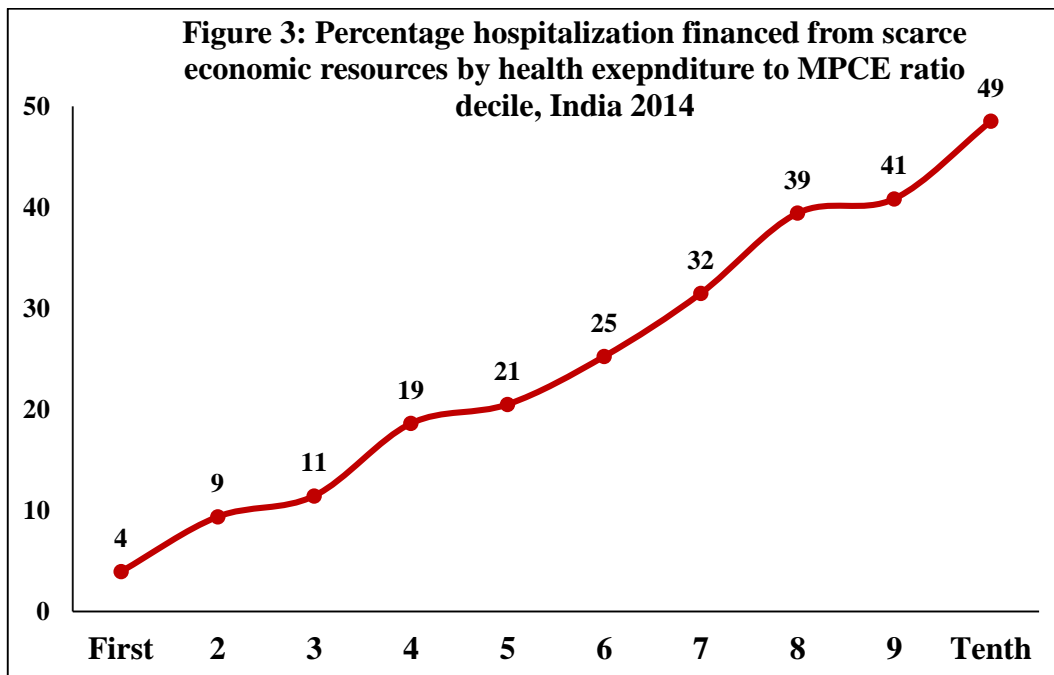
**Data and Method:** - Study uses Social Consumption on Health data from the 71<sup>st</sup> round of National Sample Survey. Household resorts to scarce economic resources for hospitalization financing, once health expenditure becomes catastrophic. Hence, study includes hospitalization cases only from the households incurred catastrophic health expenditure in last one year. Hospitalization financing from borrowings, sale of physical assets, contributions from friends and relatives are classified as SER; hospitalization financing from income/saving is classified as Non-SER. Multivariate logistic regression is applied to get the adjusted association between gender and hospitalization financing from SER. Classifying all individuals into three categories – no illness or not hospitalized, hospitalized and financed from SER, and hospitalized and financed from Non-SER, multinomial logistic regression applied, which takes into account the sample selection and endogeneity of the female hospitalization.

**Result:** - Result shows that only 36% younger female's hospitalization is financed from SER compared with 43% younger male. Similarly, only 34% older female's hospitalization is financed from SER compared with 43% older male. Multivariate logistic regression shows that younger female's hospitalization is 31% less likely to be financed from SER compared with younger male. And, odds of hospitalization financing of older female from SER is 27% less

compared with the older male. Comparison of the relative risk ratios from the multinomial logistic regression, also show that younger and older female hospitalization is likely to be financed from the SER.

**Conclusion and Discussion:** - Study establishes the gender bias against younger and older female in hospitalization financing from scarce economic resources. Economic return from investment in health and patriarchal social norms may be guiding the household strategy in hospitalization financing. No immediate economic return from investment in younger female health and absence of emotional utility in the entrenched patriarchal Indian Society may be resulting in bias against younger female hospitalization financing. Intersection of the absence of economic return from investment in older health and household ownership by the older male may be attributed to the bias in female hospitalization financing.





	Younger than 15 years			15-59 Years			60 years and older		
	Male	Female	<i>p</i> -value (F-stat.)	Male	Female	<i>p</i> -value (F-stat.)	Male	Female	<i>p</i> -value (F-stat.)
Age	4.8	5.4	0.00	38.0	39.2	0.00	69.5	68.9	0.01
Biological child of the household head (1 yes / 0 no)	0.60	0.64	0.02						
MPCE non-medical (INR)	1185	1160	0.39	1275	1338	0.00	1639	1722	0.09
Household head secondary or higher education completed (1 yes/0 no)	0.24	0.28	0.01						
Secondary or higher education completed (1 yes/0 no)				0.37	0.24	0.00	0.28	0.07	0.00
Number of household members	5.66	5.78	0.19	5.04	5.04	0.97	4.75	4.47	0.00
Female household head	0.11	0.11	0.73						
Scheduled caste / Scheduled tribe (1 yes/0 no)	0.27	0.24	0.18	0.27	0.26	0.08	0.14	0.17	0.04
Hindu religion (1 yes/0 no)	0.81	0.80	0.47	0.81	0.81	0.70	0.84	0.80	0.00
Rural residence (1 yes/0 no)	0.73	0.65	0.00	0.69	0.69	0.91	0.65	0.63	0.41
Communicable diseases (1 yes / 0 no)	0.44	0.41	0.12	0.20	0.19	0.31	0.09	0.12	0.00
Non Communicable diseases (1 yes & 0 no)	0.43	0.48	0.01	0.55	0.70	0.00	0.81	0.78	0.07
Injuries (1 yes / 0 no)	0.12	0.11	0.18	0.25	0.10	0.00	0.11	0.09	0.12
Hospitalized in private care (1 yes / 0 no)	0.79	0.80	0.84	0.75	0.76	0.14	0.77	0.79	0.08
Duration of hospitalization (Day)	7.15	6.72	0.09	8.87	7.27	0.00	8.73	7.71	0.00
Out-of-Pocket health expenditure (INR)	15704	16558	0.29	24917	20205	0.00	33628	20877	0.00
Health insured (1 yes / 0 no)	0.14	0.16	0.20	0.22	0.20	0.00	0.21	0.19	0.13
<b><i>Hospitalization financing from scarce economic resource (1 yes/0 no)</i></b>	<b>0.43</b>	<b>0.36</b>	<b>0.00</b>	<b>0.40</b>	<b>0.40</b>	<b>0.55</b>	<b>0.39</b>	<b>0.34</b>	<b>0.00</b>
<b>Number</b>	<b>2093</b>	<b>1170</b>		<b>5990</b>	<b>6047</b>		<b>2779</b>	<b>2145</b>	

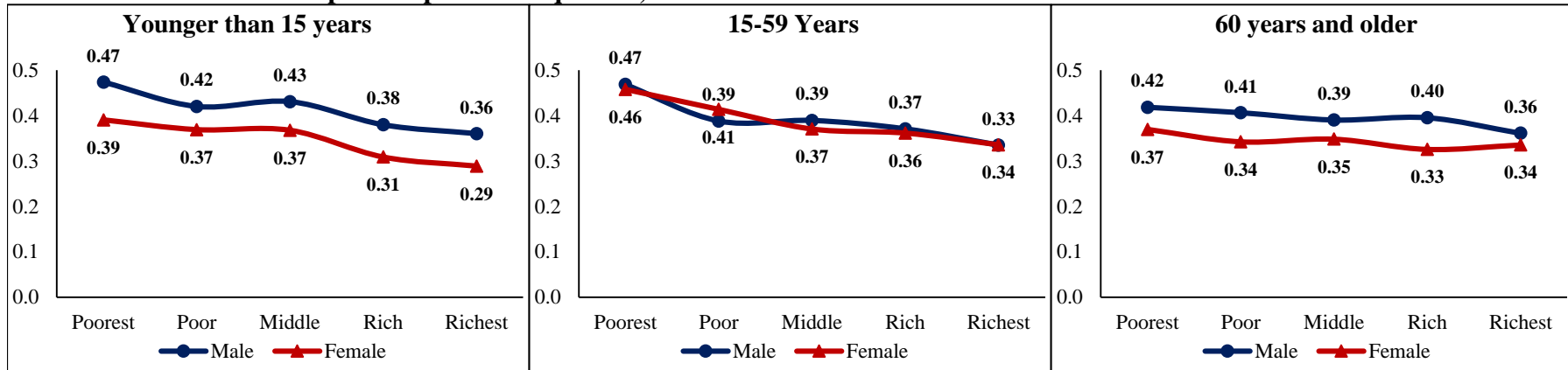
	<b>Younger than 15 years</b>	<b>15-59 Years</b>	<b>60 years and older</b>
Female	0.69**(0.53,0.90)	1.01(0.86,1.18)	0.73**(0.58,0.92)
Age	1.05(0.96,1.16)	0.99(0.95,1.03)	0.97(0.77,1.23)
Age square	1.00(0.99,1.00)	1.00(1.00,1.01)	1.00(1.00,1.01)
Biological child of the household head (1 yes/0 no)	1.54**(1.07,2.19)		
MPCE non-medical (INR)	0.80**(0.66,0.97)	0.67***(0.61,0.74)	0.87*(0.75,1.01)
Household head secondary or higher education completed (1 yes/0 no)	0.45*** (0.33,0.62)		
Secondary or higher education completed (1 yes/0 no)		0.53*** (0.44,0.64)	0.42** (0.24,0.73)
Number of household members	0.98(0.92,1.03)	0.9*** (0.87,0.93)	0.91*** (0.87,0.96)
Female household head <sup>s</sup>	0.75(0.49,1.14)		
Scheduled Caste / Scheduled Tribe (1 yes/0 no)	1.31*(0.97,1.77)	1.45*** (1.19,1.75)	1.29(0.92,1.83)
Hindu religion (1 yes/0 no)	0.92(0.66,1.28)	0.78** (0.64,0.94)	1.12(0.82,1.53)
Rural residence (1 yes/0 no)	1.19(0.91,1.55)	1.28** (1.10,1.50)	1.66*** (1.25,2.22)
Non Communicable diseases (1 yes/0 no) <sup>@</sup>	1.40** (1.05,1.85)	1.17(0.93,1.47)	1.00(0.7,1.44)
Injuries (1 yes/0 no) <sup>@</sup>	1.09(0.73,1.65)	1.28* (0.98,1.67)	0.99(0.61,1.63)
Hospitalized in private care (1 yes/0 no)	0.93(0.63,1.38)	0.92(0.75,1.12)	1.33(0.94,1.87)
Duration of hospitalization	1.02** (1.00,1.04)	1.00(0.99,1)	1.01(1.00,1.02)
Health insured (1 yes/0 no)	1.18(0.79,1.76)	1.37** (1.12,1.68)	1.18(0.88,1.57)
Out-of-Pocket health expenditure (INR)	1.41*** (1.21,1.63)	1.52*** (1.40,1.65)	1.25*** (1.09,1.43)
State dummy	Yes	Yes	Yes
<b>Number</b>	<b>3263</b>	<b>12037</b>	<b>4924</b>

Note:- \*  $p < 0.05$ , \*\*  $p < 0.01$ , \*\*\*  $p < 0.001$ ; 95% CI is in parenthesis; Communicable diseases (1 yes / 0 no) is reference category.

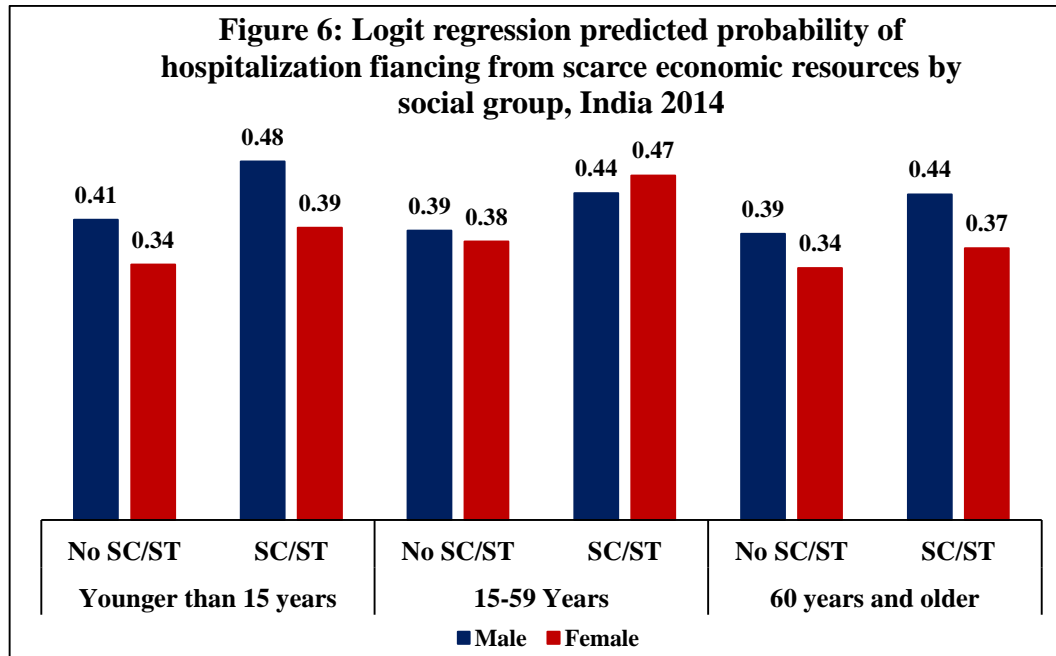
	<b>Younger than 15 years (N=27074)</b>		<b>15-59 Years (N=57357)</b>		<b>60 years and older (N=10243)</b>	
	<b>Income/saving</b>	<b>Scarce resource</b>	<b>Income/saving</b>	<b>Scarce resource</b>	<b>Income/saving</b>	<b>Scarce resource</b>
Female	0.69***(0.59,0.81)	0.49***(0.4,0.61)	1.23***(1.10,1.37)	1.11*(0.98,1.26)	1.04(0.87,1.23)	0.76**(0.61,0.96)
Age	0.92**(0.87,0.97)	0.94(0.88,1.01)	1.06***(1.03,1.09)	1.07***(1.04,1.11)	1.33***(1.14,1.56)	1.28*(0.99,1.64)
Age square	1.00(1.00,1.01)	1.00(1.00,1.01)	1.00(1.00,1.01)	1.00**(1.00,1.01)	1.00***(1.00,1.01)	1.00*(1.00,1.01)
Biological child of the household head (1 yes & 0 no)	1.04(0.81,1.33)	1.43**(1.10,1.87)				
MPCE non-medical (INR)	1.11*(0.98,1.25)	0.99(0.83,1.18)	1.11**(1.03,1.2)	0.76***(0.71,0.82)	1.05(0.93,1.18)	0.92(0.8,1.06)
Household head secondary or higher education completed	0.98(0.82,1.17)	0.52***(0.4,0.69)				
Secondary or higher education completed			0.97(0.86,1.10)	0.59***(0.51,0.68)	1.38**(1.07,1.79)	0.69(0.39,1.22)
Number of household members	0.88***(0.83,0.93)	0.87***(0.82,0.93)	0.83***(0.81,0.85)	0.76***(0.73,0.78)	0.82***(0.79,0.84)	0.76***(0.73,0.8)
Female household head <sup>s</sup>	1.15(0.89,1.5)	0.81(0.60,1.09)				
Belonged the Scheduled Caste or Scheduled Tribe	0.96(0.8,1.15)	1.13(0.9,1.41)	1.11(0.96,1.29)	1.37***(1.17,1.6)	0.72**(0.58,0.9)	0.82(0.58,1.15)
Belonged to Hindu religion	1.05(0.86,1.29)	1.09(0.86,1.39)	0.99(0.87,1.13)	0.77**(0.66,0.91)	0.93(0.74,1.17)	1.12(0.84,1.49)
Rural residence	1.00(0.85,1.18)	1.16(0.94,1.43)	0.97(0.87,1.09)	1.16**(1.03,1.31)	0.77**(0.63,0.93)	1.22(0.94,1.59)
Health insured (1 yes & 0 no)	1.18(0.92,1.5)	1.23(0.88,1.72)	1.03(0.87,1.21)	1.30***(1.1,1.52)	0.94(0.74,1.19)	1.01(0.77,1.34)
State dummy	Yes	Yes	Yes	Yes	Yes	Yes

Note: - \*  $p < 0.05$ , \*\*  $p < 0.01$ , \*\*\*  $p < 0.001$ , 95% CI is in parenthesis. # : Not hospitalized includes became sick but not hospitalized and did not become sick

**Figure 5: Logit regression predicted probability of hospitalization financing from scarce economic resources by per capita non-medical household consumption expenditure quintile, India 2014**



**Figure 6: Logit regression predicted probability of hospitalization financing from scarce economic resources by social group, India 2014**





## **Appendix table**

**Communicable diseases:** Diphtheria, Whooping Cough, Malaria, Typhoid, Tuberculosis, Filariasis, Tetanus, HIV/AIDS, STI, Jaundice, Diarrhea, dysentery, Worms infestation, Fever with rash/ eruptive lesions.

**Non Communicable diseases:** Cancers, Anaemia, Bleeding disorders, Diabetes, Under-nutrition, Goitre, Thyroid disorder, Mental retardation, Mental disorders, Headache, Seizures or known epilepsy, Weakness in limb muscles and difficulty in movements,

**Injuries:** Accidental injury, road traffic accidents and falls, Accidental drowning and submersion, Burns and corrosions, Poisoning, Intentional self-harm, Assault, Contact with venomous/harm-causing animals and plants, Other categories.