

Utilization of Healthcare Services for Enteric Fever under National Health Insurance Program in Selected Districts of Nepal

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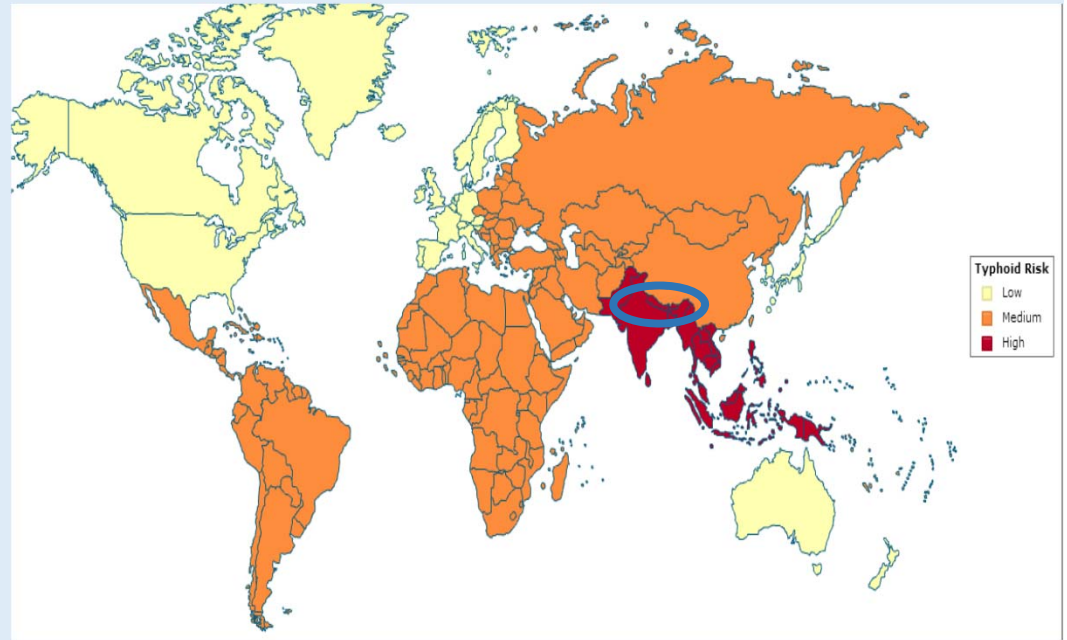
National Health Insurance Program, Nepal

**11th International Conference on Typhoid and Invasive NTS Disease,
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Background

Nepal

- Total Population : 29million
- High incidence of enteric fever



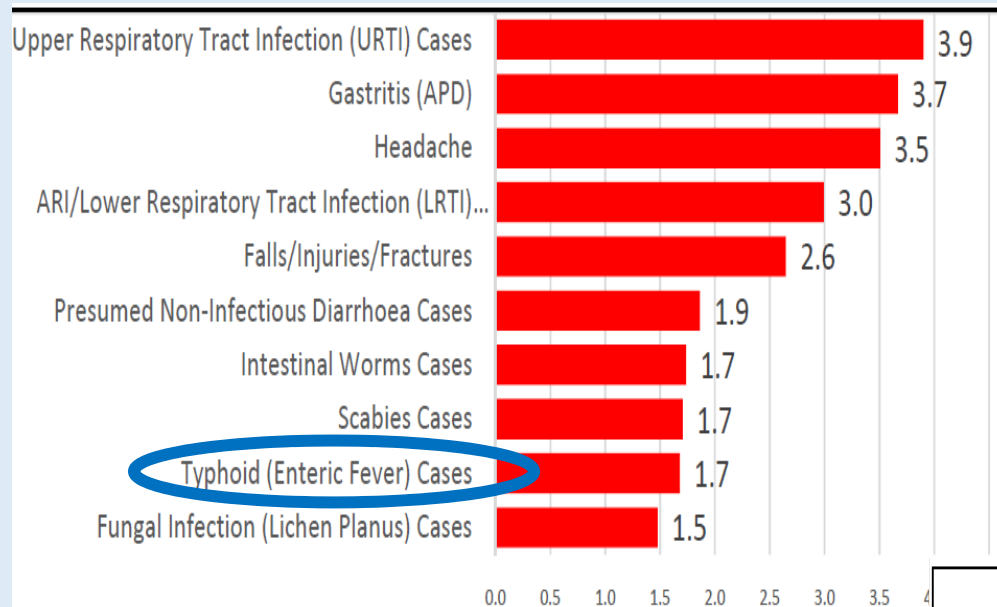
Source: WHO GHO data

- **Typhoid incidence:** 436 cases / 100,000 population
1,493 typhoid deaths/year,
61% of them children < 15 years age (*GDB estimates, 2016*)
- Kathmandu, the capital, previously named as “typhoid fever capital of the world”

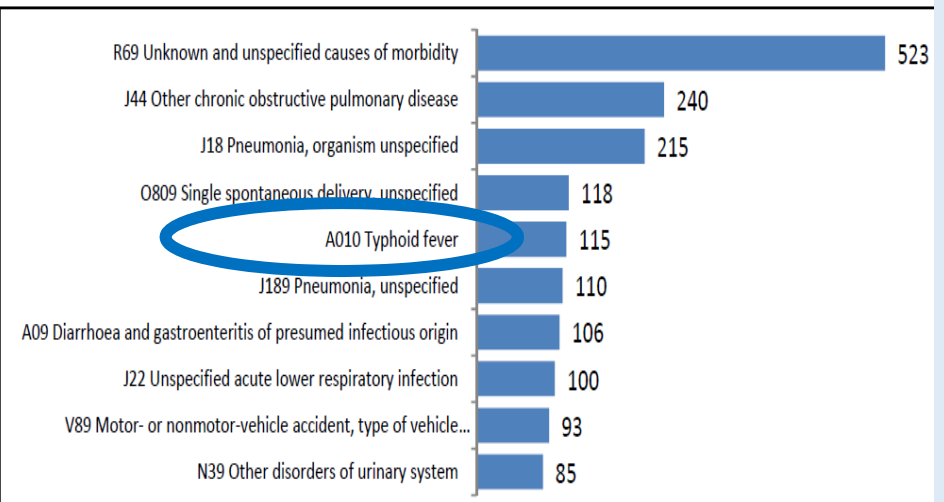


- Access to piped water supply: 45% of population (*DWSS report, 2016*)
- Enteric fever → Economic burden, average total cost for hospitalized patient in Nepal US\$ 233 (*Kaljee et al, jr of infec dis, 2017*)

Top ten reasons(%) for outpatient consultations (2016/17)



Top 10 causes of death among inpatients, FY 2016/17



Annual Report, Dept. of Health Services, 2016/17

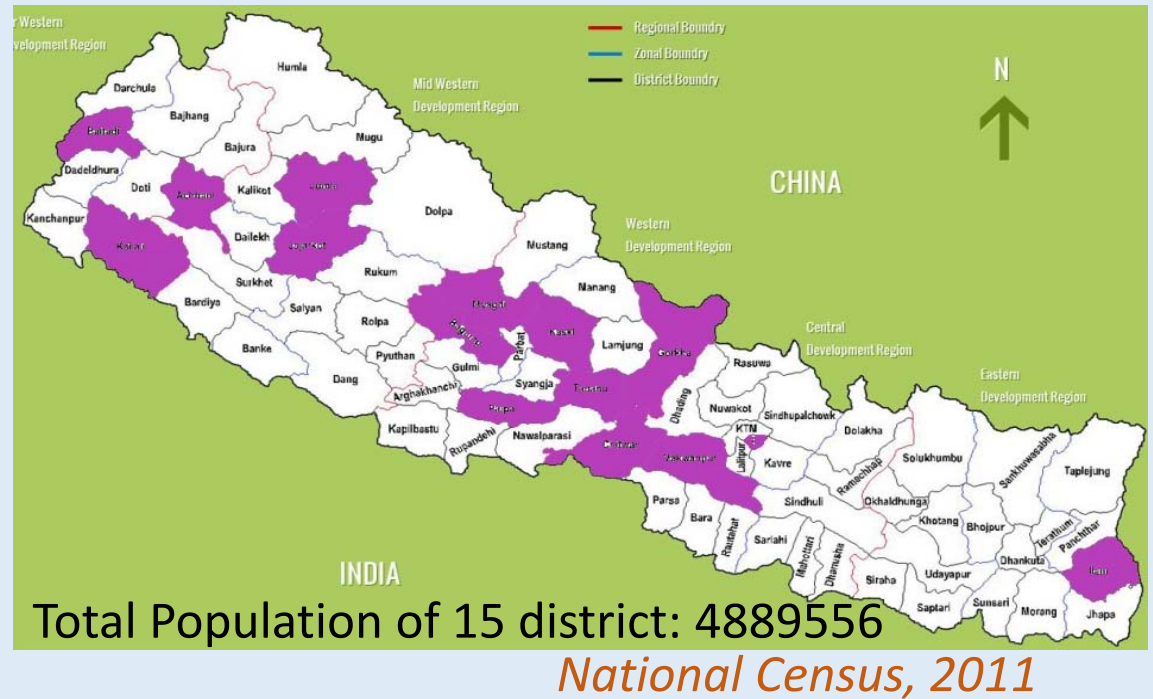
Problem Statement

- Sparse data on enteric fever in rural settings
- Financial/Geographical access constrains limit patients from seeking proper treatment
- Trends: Fever patients visit local pharmacies and indulge in self management
- Lack of timely diagnosis and treatment of typhoid infections could lead to complications and prolonged illness



Source Nepali Times

National Health Insurance program (NHIP) in Nepal



- Nepal Government initiated NHIP in 2016 “to ensure and improve access to quality health care services for people of Nepal”
- By 2017, the program had been expanded to 15 districts of the country
- Enrollees receive treatment from healthcare facilities contracted the program

Methods

- Retrospective Cross sectional Study, August 1, 2017 to July 31, 2018
- Service utilized by HI enrollees in 15 HI implemented districts analyzed
- Healthcare services were utilized at facilities enlisted in HI program
- Patients diagnosed of enteric fever, clinically /and with laboratory evidence
- Information on services provided were submitted by service providers through Insurance Management Information System (IMIS) software.

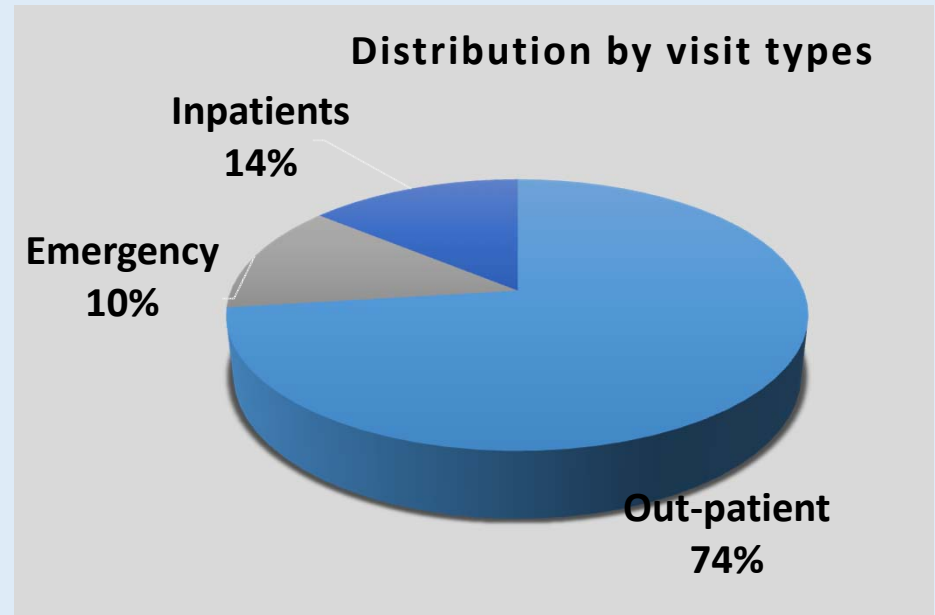
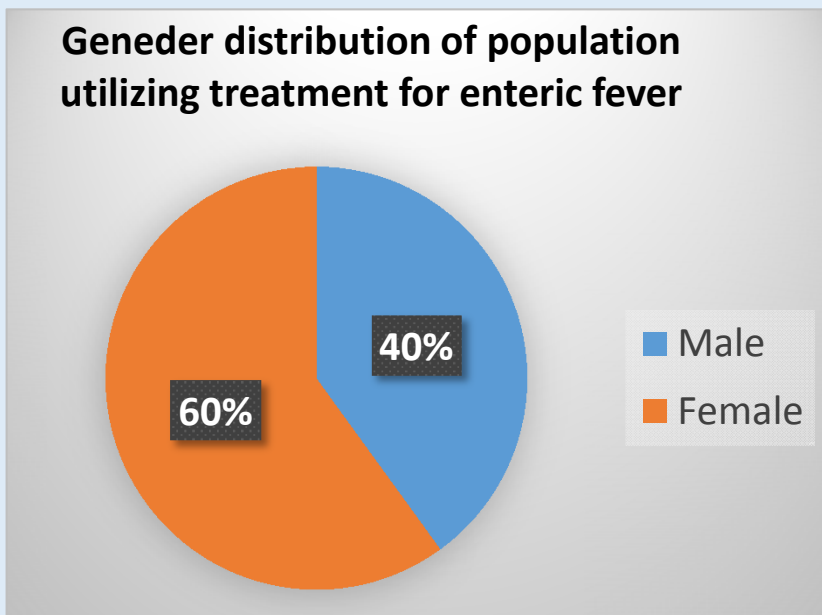
Findings

Characteristic of the Study Population

Total enrollment in 15 districts 6,30,642 (12.8% of population)

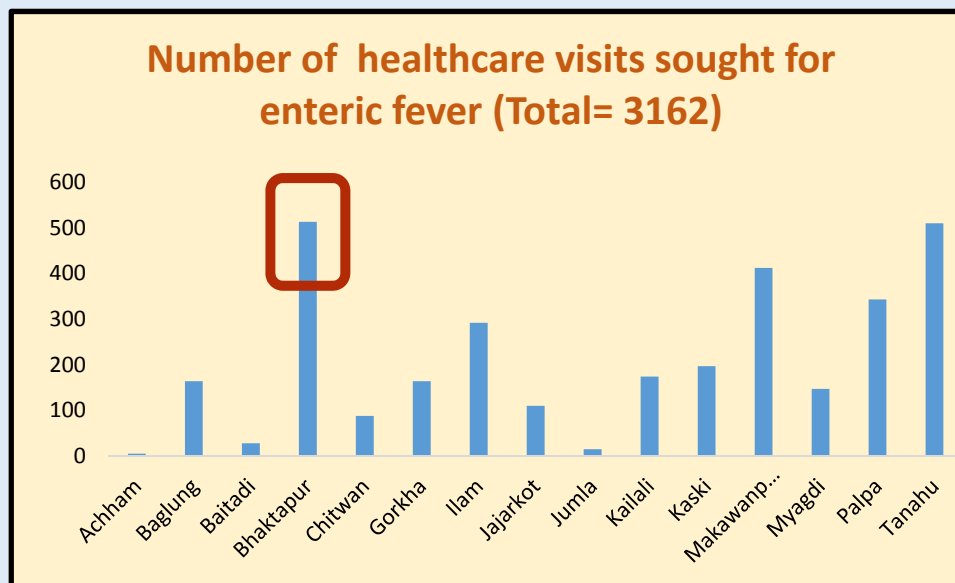
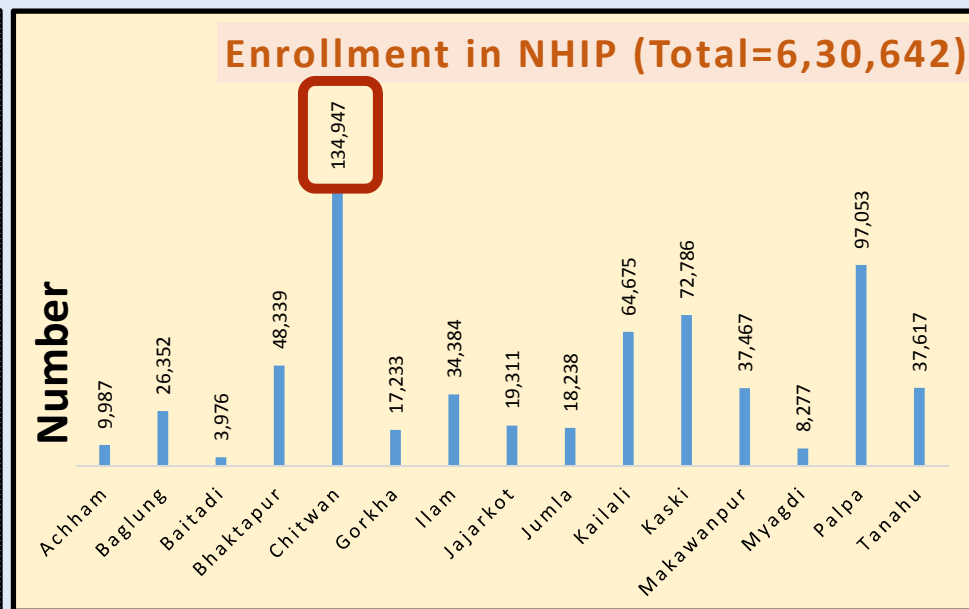
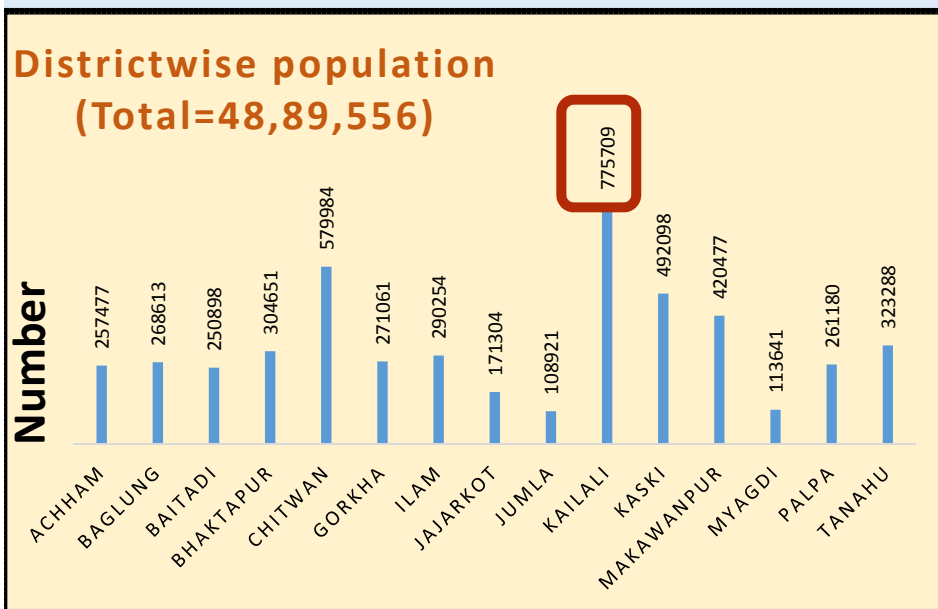
Number of hospital visits for enteric fever by enrollees: 3162 (0.5% of enrollment)

Majority (40%) of visits from the age group 20-40 years age



The mean length of hospitalization in Inpatients : 3.25 days

Distribution by districts for enrollment and healthcare facility visits for enteric fever



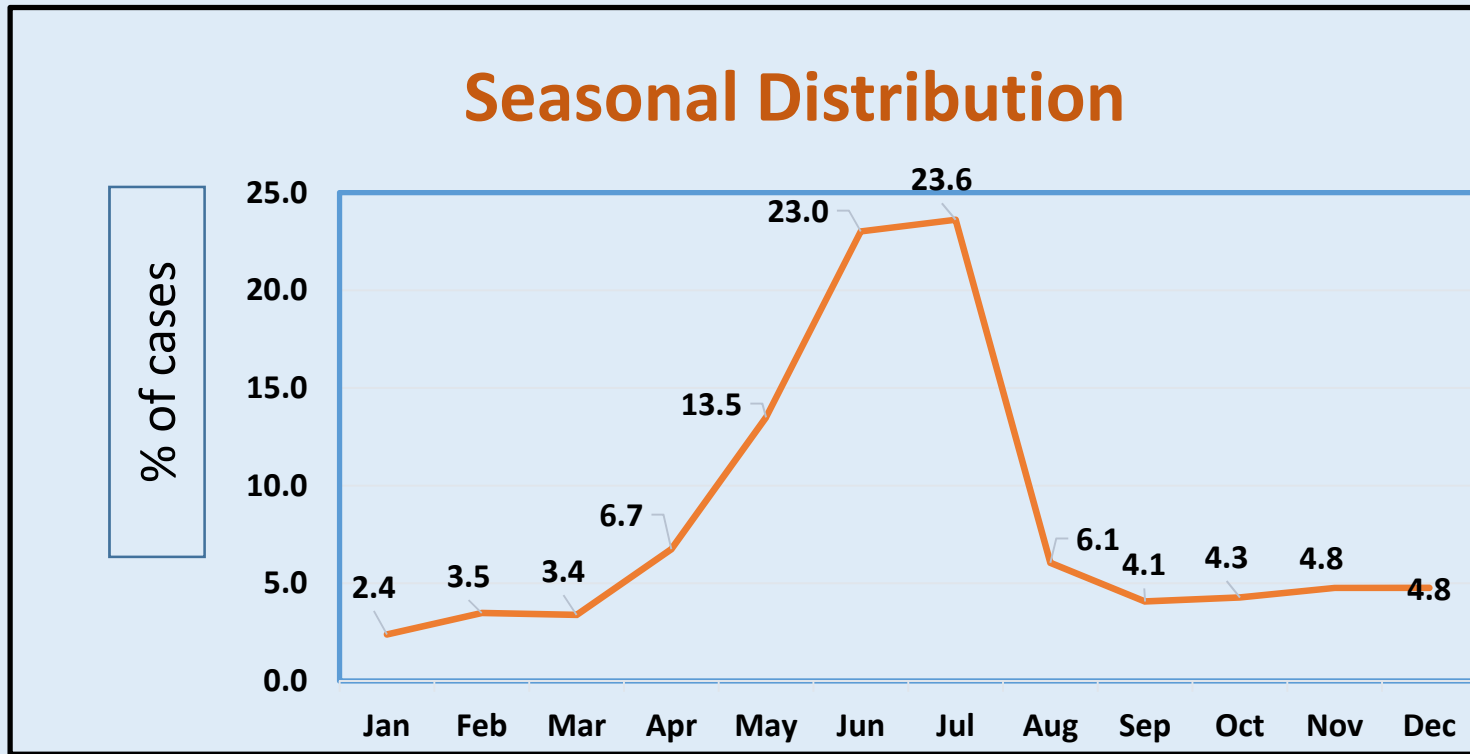
Districtwise distribution by visit type

Districts	OPD(%)	IPD(%)	ER(%)	Ref(%)	Total
Achham	4(80%)	1(20%)	0(0%)	0(0%)	5
Baglung	113(68.9%)	38(23.17%)	10(9.09%)	3(1.82%)	164
Baitadi	24(85.71%)	2(7.14%)	1(3.57%)	1(3.57%)	28
Bhaktapur	412(80.31%)	26(5.06%)	72(14.03%)	3(0.58%)	513
Chitawan	66(75%)	16(18.18%)	2(2.27%)	4(4.54%)	88
Gorkha	146(89.02%)	14(8.53%)	4(2.43%)	0(0%)	164
Ilam	221(75.68%)	19(6.50%)	48(16.43%)	4(1.36%)	292
Jajarkot	96(87.27%)	9(8.18%)	1(0.90%)	4(3.63%)	110
Jumla	8(53.33%)	5(33.33%)	2(13.33%)	0(0%)	15
Kailali	140(80.46%)	4(2.29%)	30(17.24%)	0(0%)	174
Kaski	99(50%)	70(35.53%)	23(10%)	5(2.53%)	197
Makawanpur	317(76.94%)	37(8.98%)	55(13.35%)	3(0.72%)	412
Myagdi	105(71.43%)	24(16.33%)	17(11.56%)	1(0.68%)	147
Palpa	219(63.85%)	66(19.24%)	54(15.74%)	4(1.16%)	343
Tanahu	359(70.39%)	84(16.47%)	67(13.13%)	0(0%)	510

OPD;Outpatient, IPD;Inpatient, ER; Emergency, Ref; referred

Distribution by types of healthcare centers where treatment was sought

Type of healthcare facility	Number of health facilities reporting/ diagnosing enteric fever	Number (%) of centers with C/S facility	Number of enteric fever diagnoses reported
Primary Health Care (PHC)	30	0 (%)	585 (18.5%)
< 25 bed hospital	20	0 (%)	692 (22%)
25- 50 bed /hospitals	12	6 (50%)	1225 (38.7%)
Zonal Hospital /(>50-100)	6	6 (100%)	303 (9.5%)
>100 bed, Regional/ Central/ Academic Hospitals	14	14 (100%)	357 (11%)
Total	82	26 (31.7%)	3162



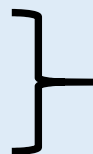
Clinical manifestation

Fever 100%

Headache

Nausea

Myalgia



80%

Others: Cough, Diarrhea, Epigastric pain, Reduced appetite

Resources Used

Investigations	Unit cost(US\$)	Therapy	Unit cost (US\$)
• Widal test (in 80% cases)	1	• Cefixime 200mg (85%)	0.15
• Urine RE/Microscopy	0.36	• Ceftriaxone 1gm (80% IPD)	0.81
• Blood count	0.32	• Azithromycin 500mg (40%)	0.27
• ESR	0.3	• Amox-Clavulanate 625mg (10%)	0.22
Others: (<20% cases)		• Ciprofloxacin 500mg/ Ofloxacin 400 mg (19%)	0.07
• Blood Chemistry(LFT,RFT)	10	(single/combination therapy)	
• Blood CS (Conventional)	2	Others:	
(Bactec)	7	IV fluids, proton pump inhibitors, vitamins, antihistamines, antipyretics	
• C Reactive protein (CRP)	1.5		
• Ultrasonogram	5		
• X ray	3		

Direct Medical Expenses: Ranged from US\$3 (OPD) to NPR US\$ 155 in (IPD)

Unit price of Investigations and Drugs were the mean/median prices from the study hospitals/Pharmacies of study hospitals (1\$= NPR110)

Summary

- Overall, 12.8 % of population of study districts were enrolled in NHIP
- Enteric fever diagnosis made from all 15 districts
- Utilization of healthcare service among enrollee for enteric fever at facilities enlisted in NHIP was around 0.5% of enrollment
- Diagnosis of typhoid fever was often based on clinical features and high number of diagnoses made from healthcare centers where culture facilities were unavailable
- Services utilized (and hence cost) varied across different categories of facilities

Limitations

- Study covered only 15 out of 77 districts in Nepal
- Data was only from Service providers enrolled with NHIP
- Data on resource utilization for enteric fever among HI ensures only
- Prescription analysis only, but data on results of laboratory investigations including that of culture confirmed cases and susceptibility test lacking
- Alternative causes of illnesses not known

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THANK YOU

