Resources, Response & Referral: Strengthening trauma care continuum

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Years of Neglect

- Wipe off Demographic Dividend
- Subject of injuries/ trauma received relatively scant attention from the medical community
- Absence of topic in the curricula of most medical schools & even schools of public health

On Global development map

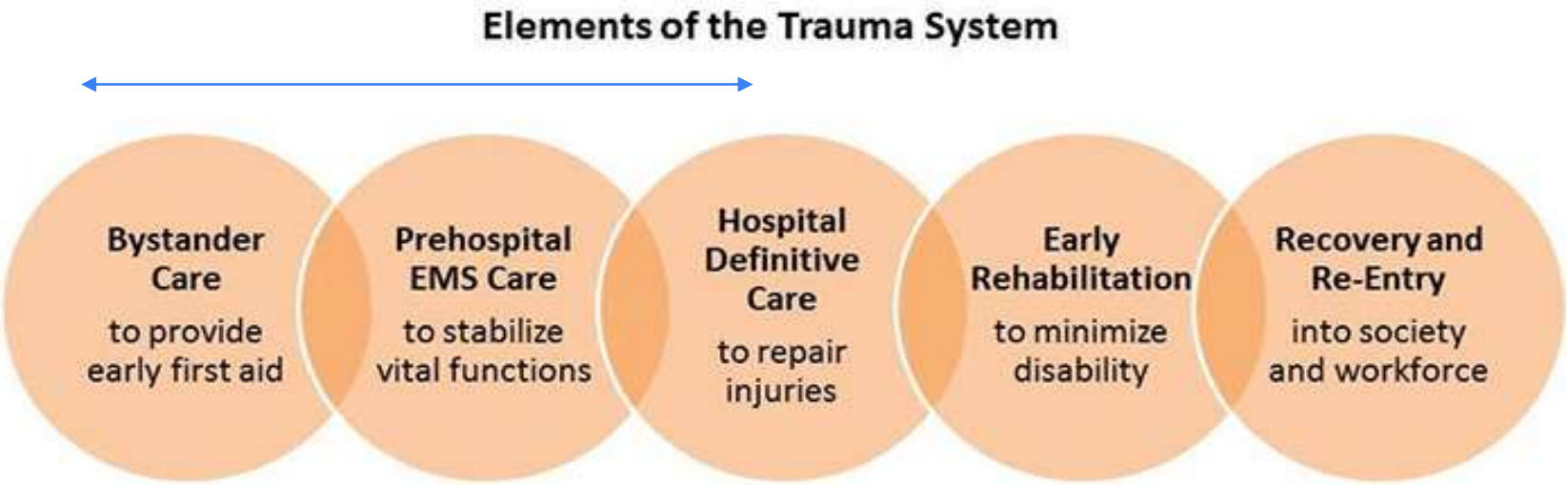
- New context for violence and injury prevention

Table 6.4
Selected SDG targets and proposed indicators linked to injuries and violence, by type of indicator

Type of indicator	SDG target	Proposed indicator
Impact	3.6	Deaths due to road traffic injuries
	3.9	Mortality due to unintentional poisoning
	1.5, 11.5, 13.1	Deaths due to disasters
	16.1	Homicide
	16.1	Conflict-related deaths
Coverage/ risk factors/ determinants	5.2	Women and girls subjected to physical, sexual or physiological violence
	16.1	Population subjected to physical, sexual or physiological violence
	Other	Part of targets in goals on peaceful and inclusive societies, cities, poverty, education, etc.

Burns ??

Continuum of care for Trauma victim



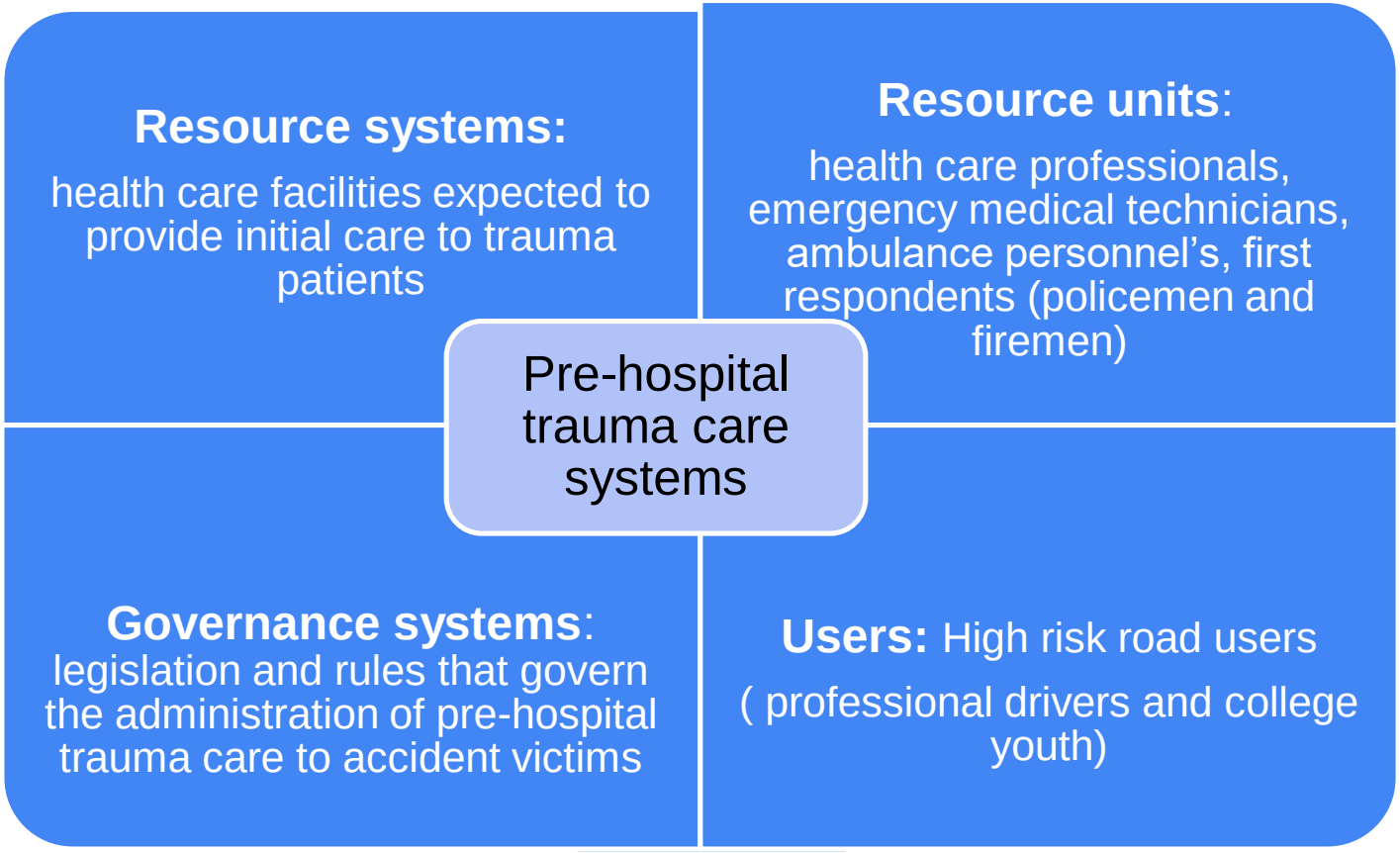
Source: Adapted from National Academies of Science, Engineering and Medicine (NASEM). "A National Trauma Care System: Integrating Military and Civilian Trauma Systems to Achieve Zero Preventable Deaths," 2016. http://www.nationalacademies.org/hmd/Reports/2016/A-National-Trauma-Care-System-Integrating-Military-and-Civilian-Trauma-Systems.aspx

Robust health delivery platforms "PHC for UHC"

- Well-functioning, resilient health systems based on PHC are the foundation for global health security and UHC
- "All people to have access to the full range of quality health services they need, when and where they need them, without financial hardship – UHC"
- Progress on UHC tracked using two indicators:
  - **SDG 3.8.1:** Coverage of essential health services
  - **SDG 3.8.2:** Catastrophic health spending (and related indicators)

Ensuring access to Universal Health coverage

- Well-organized, safe and high-quality emergency care is a key mechanism
- Strong and well-prepared **everyday** emergency care system is vital for mitigating the impact of disasters and mass casualty events and for maintaining delivery of health services in fragile situations and conflict-affected areas
- Frontline health workers, nurses in particular, provide care for the acutely ill and injured, often without prior dedicated training in the management of emergency conditions, and with limited possibilities for consultations.


Resource systems:
health care facilities expected to provide initial care to trauma patients
Resource units:
health care professionals, emergency medical technicians, ambulance personnel's, first respondents (policemen and firemen)
Pre-hospital trauma care systems
Governance systems:
legislation and rules that govern the administration of pre-hospital trauma care to accident victims
Users: High risk road users
(professional drivers and college youth)

Epidemiology of Road Crash Victims in Delhi – attempt to apply Haddon matrix

Dr. Anil Kumar , Dr. Neeti Rustagi, Dr. Lobzang Norbu (2011-12)

- Carried out at Centre of Epidemiology , NCDC Delhi.
- Haddon matrix utilized as an effective injury diagnostic tool
- **Methodology adopted :** Data collection, triangulation and analysis was done -
- a. Medical Record Department of **Sushruta trauma centre, Delhi**
- b. Police stations where RTAs were registered
- c. Interviews of victim or nearest family member
- d. Geographic coordinates of the crash sites

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Applying Haddon Matrix for Evaluation of Road Crash Victims in Delhi, India

Neeti Rustagi, Anil Kumar, Lobzang Norbu & Dinesh Vyas

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Role of Primary Care Physicians in Mass Casualty Incidents

Neeti Rustagi and Jugal Kishore

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Director with Faculty Members and Administration

Accidents: India versus Rajasthan

Decadal Growth in Number of Road Accidents and Deaths

Country /State	No. of cases of road accidents		Decadal growth	No. of deaths due to road accident		Decadal growth
	2001	2011		2001	2011	
India	323720	440123	35.96%	80262	136834	70.48%
Rajasthan	19999	23245	16.23%	5187	9232	77.98%

Source: National Crime Record Bureau, Govt of India

Analysis of Road Accidents through various Indices

Country /State	Severity Index		Fatality Risk		Fatality Rate	
	2001	2011	2001	2011	2001	2011
India	24.79	31.09	7.80	11.31	1.46	1.19
Rajasthan	25.94	39.72	9.18	13.47	1.76	1.42

The accident severity index measures the number of deaths per 100 road accidents.
Fatality risk is defined as number of deaths per 1,00,000 population.
Fatality rate is defined as number of deaths per 1,000 vehicles, which decreased in this decade

Jodhpur – a high burden district

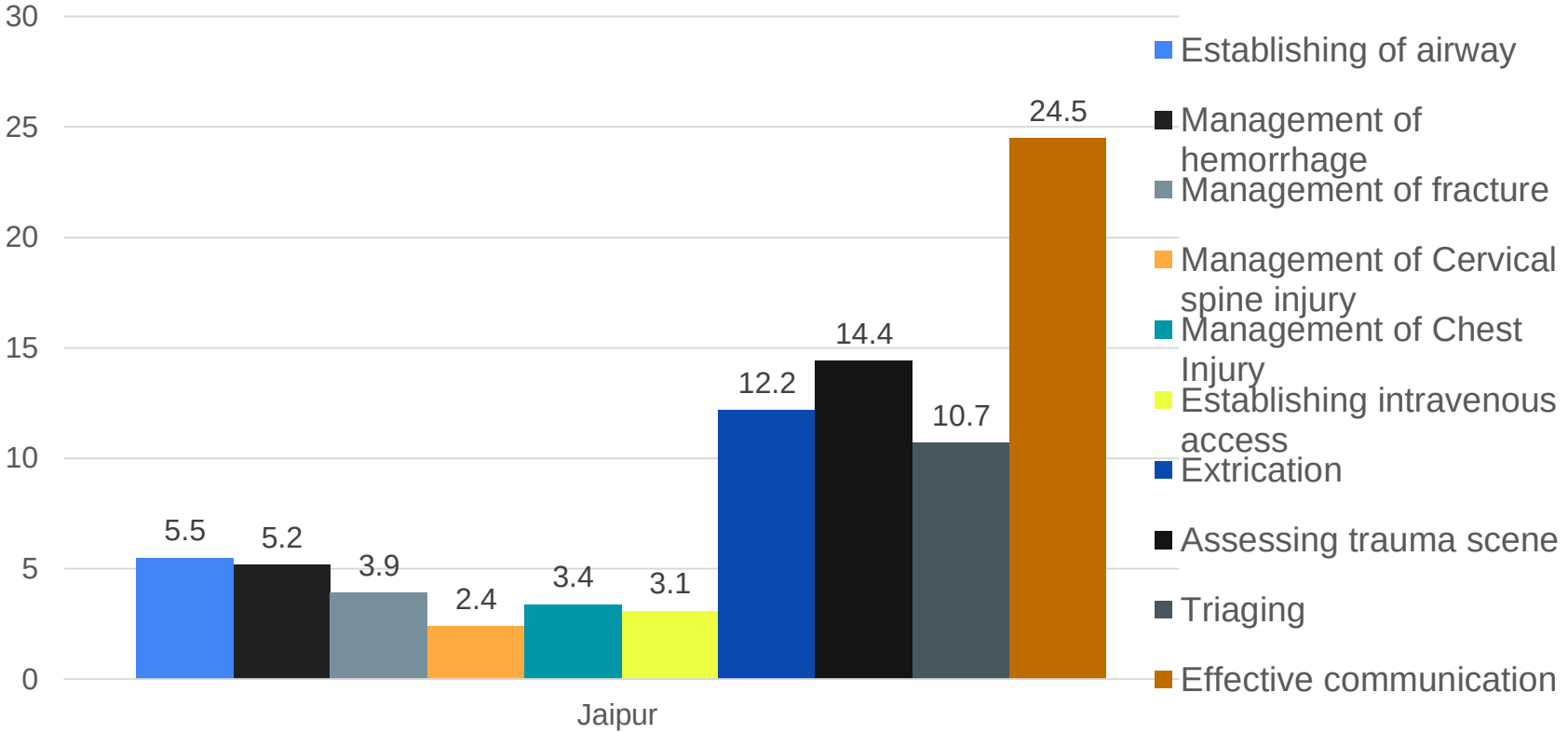
No. of Districts according to Categories of Fatality Risk

S. No.	Category	District	No. of Districts
1.	< 10	Banswara, Dungarpur, Jalore, Jhalawar, Karauli Pratapgarh, Sawai- Madhopur	7
2.	10 - 12	Baran, Barmer, Bharatpur, Churu, Dholpur, Ganganagar, Hanumangarh, Jaisalmer, Jhunjhunu, Kota, Nagaur	11
3.	12 - 14	Tonk, Bikaner	2
4.	14 - 16	Alwar, Bhilwara, Bundi, Chittorgarh, Jodhpur, Pali Sikar, Udaipur	8
5.	16 - 18	Rajsamand	1
6.	18 >	Ajmer, Dausa, Jaipur, Sirohi	4

AIIMS Jodhpur
Pre-Hospital trauma care program

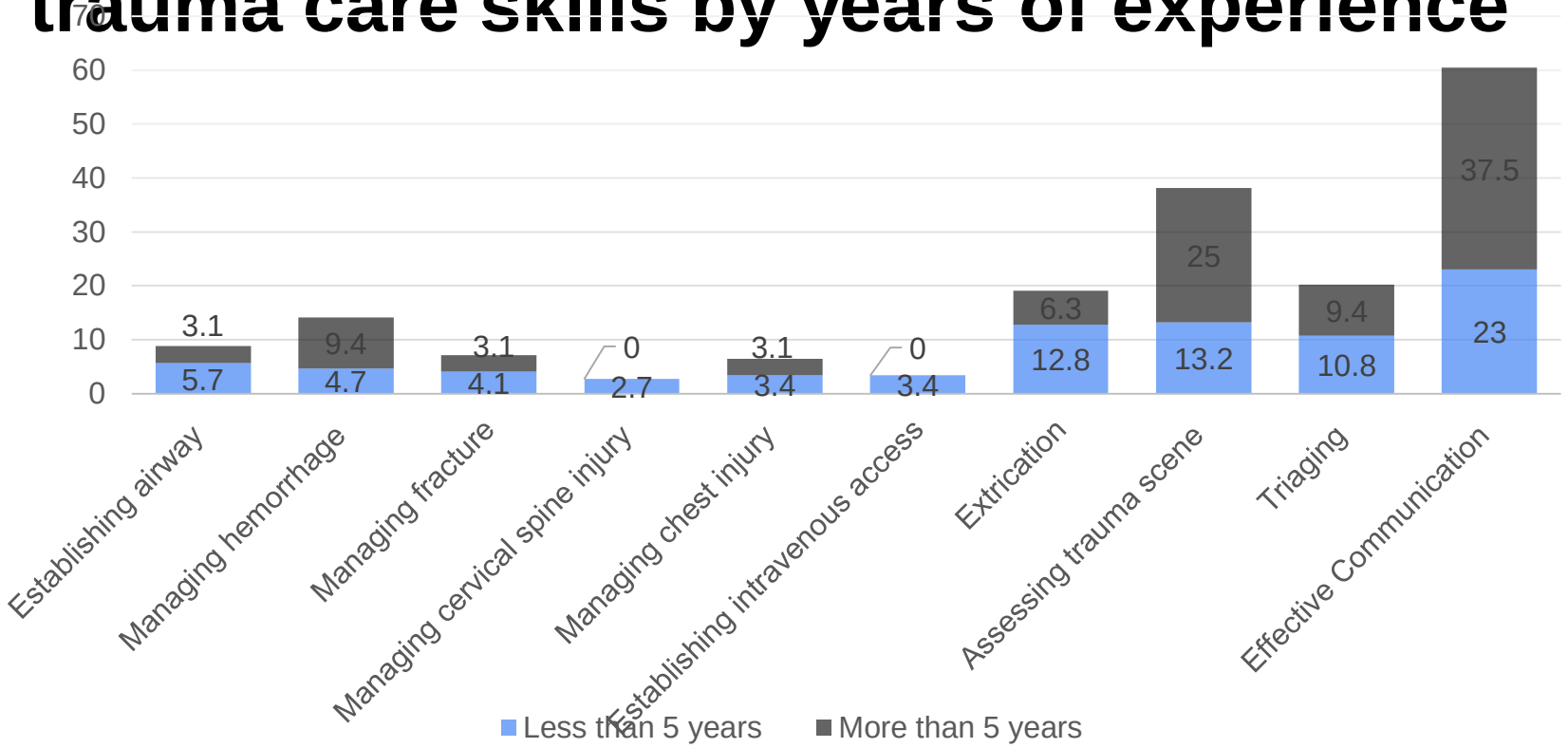
- Pre- hospital trauma care education program (2014)
- **First few attempts to strengthen resource systems and resource units towards ensuring pre-hospital trauma care**
- In collaboration with IIT Jodhpur and Michigan University
- Experience and confidence in using ten essential trauma care skills were assessed (based on ABCDE protocol)
- Identified especially for low resource settings

CLINICAL TOPICS	LEVEL 1	LEVEL 2	ADVANCED COURSE
Airway management	✓	✓+	✓+
Chest injury	✓	✓+	✓+
Fracture stabilization	✓	✓+	✓+
Hemorrhage control	✓	✓+	✓+
Cervical spine immobilization	✓	✓+	✓+
Vital signs & shock	✓	✓+	✓+
Scene management	✓	✓+	✓+
Triage	✓	✓+	✓+
Extrication	✓	✓+	✓+
Early initiation - IV access	✓	✓+	✓+
Mass casualty		✓+	✓+
Management of unconscious patients			✓+
AED & cardiac drug administration			✓+
Invasive airway management			✓+
Chest tube insertion			✓+



Confidence in exercising 10 essential pre-hospital trauma care skills (n=700)

Confidence in exercising pre- hospital trauma care skills by years of experience



- statistically significant difference

Pre Hospital Trauma Care training

सड़क दुर्घटना में घायल व्यक्ति की सहायता के दिए टिप्स

एम्स में आयोजित प्री हेल्थ केयर ट्रोमा वर्कशॉप में पुलिस विभाग और विभिन्न अस्पताल के नर्सिंग स्टाफ को सड़क दुर्घटना में घायल व्यक्ति की सहायता करने के टिप्स दिए। वर्कशॉप में भाग लेने वाले प्रतिभागियों को हर दो माह में ट्रेनिंग दी जाएगी। वर्कशॉप में सुमेरपुर क्षेत्र के नर्सिंग स्टाफ और पुलिस लाइन जोधपुर, शास्त्री नगर, बासनी तथा कुड़ी भगतासनी थानों से आए पुलिसकर्मियों ने भाग लिया। डॉ. नीति रुस्तगी ने बताया कि जोधपुर के हाइवे पर आने वाले सीएचसी जहां ज्यादा दुर्घटनाएं होती है उन नर्सिंगकर्मियों को प्री हेल्थ केयर ट्रोमा की ट्रेनिंग के साथ बीपी, पल्स और सीपीआर की जानकारी दी।

ट्रोमा सेंटर लाने से पहले मरीज की करें केयर

बासनी पत्रिका

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अखिल भारतीय आयुर्विज्ञान संस्थान (एम्स) में कम्युनिटी मेडिसिन एंड फैमिली मेडिसिन विभाग की ओर से प्री हैल्थ केयर ट्रोमा सेंटर वर्कशॉप आयोजित की गई। इसमें पुलिसकर्मियों और नर्सिंगकर्मियों को सड़क दुर्घटना में घायल व्यक्ति को अस्पताल पहुंचने से पहले बरती जाने वाली सावधानियों के बारे में बताया गया। इस मौके पर उन्हें प्री हैल्थ केयर ट्रोमा सेंटर की थ्योरी और उसका प्रेक्टिल बताकर घायल को बचाने के कॉन्सेप्ट की जानकारी दी।

विभाग की डॉ. नीति ने बताया कि दुर्घटना स्थल पर घायल को अस्पताल लाने से पहले कई छोटी छोटी बातों का ख्याल रखते हुए उसकी केयर करनी चाहिए। इसमें उसके खून के बहाव को रोकने और उसे सांस लेने में तकलीफ होने पर सही तरीके से सीपीआर तकनीक शामिल है। प्रशिक्षण के दूसरे पार्ट में प्रेक्टिल नॉलेज देते हुए बताया कि घायल व्यक्ति को कुछ दूसरे संसाधन न हो तो लकड़ी के पट्टे और न्यूजपेपर के सहारे से खून के बहाव को रोका जा सकता है। कपड़े या चदर से घायल व्यक्ति को लपेटकर उसे अस्पताल पहुंचाया जा सकता है। वही बाइक सवार घायल व्यक्ति के सिर से हैलमेट निकालते समय सावधानी रखनी चाहिए। अगर कोई मरीज अचेत है तो उसे ले जाते समय देरी नही करनी चाहिए। वही हाइवे और ग्रामीण क्षेत्रों में होने वाली दुर्घटनाओं में घायलों को अस्पताल पहुंचाते समय ज्यादा घायलों में से ज्यादा सीरियस व्यक्ति को पहले केयर कर अस्पताल पहुंचाना जरूरी होता है। डॉ. नीति ने बताया कि ये प्रशिक्षण हर माह दिया जाएगा। इसमें जोधपुर कमिश्नरेट और नर्सिंगकर्मियों को शामिल किया जाता है। इस दौरान उनके साथ एम्बीबीएस 5 वे सेमेस्टर के विद्यार्थी भी थे। प्रशिक्षण की टीम में डॉ. पंकजा राघव, डॉ. महावीर रोढा, डॉ. कीर्ति, डॉ.नवीन दत्त शामिल थे। इसमें प्रदेश के कई जिलों से भी प्रशिक्षणार्थी आए थे।

- Second highest populated district in Rajasthan (2011)

- Approx. 34.30 percent lives in urban regions of district while 65.7 % lives in rural area
- Huge network of national and state highways

Trauma / Injury surveillance in Jodhpur

Objective : To assess Injury surveillance at primary and secondary government health care facilities in Jodhpur district

Methodology :

- Consolidated Monthly reports from peripheral facilities for year 2016 and 2017
- Telephonic interview by Medical Officers posted in peripheral facilities

Showing the infectious and other diseases treated in Hospital / Dispensary/Indoor.

	CAUSES	Code No.	PATIENTS TREATED					
			Outdoor		Indoor		Indoor deaths	
			Male	Female	Male	Female	Male	Female
51.	140. Effects of foreign body entering through officer	T15-T19						
52.	141. Burns	T20-T32	16	04				
53.	142. Poisonings and toxic effects	T36-T50	02	—				
54.	143. Complications of Medical and Surgical care	T80-T88						
55.	144. Other injuries, early complications of Trauma	T66-T78 T79						
56.	145. Late effects of injuries, of toxic effects and other external causes	T51-T65						
57.	Transport accidents	V01-V09						
	146. Railway accidents	V5						
	147. Motor vehicle traffic accidents	V50-V79	11	—				
	148. Other road vehicle accidents	V80-V89						
	149. Water Transport Accidents	V90-V94						
	150. Air and space Transport Accident	V95-V97						
E-58.	151. Accidental poisoning	X40-X49						
E-59.	152. Misadventure during medical care abnormal reactions, late complications	Y60-Y69						
E-60.	153. Accidents falls	W00-W19						
E-61.	154. Accidental caused by fire and flames	X00-X09						
E-62.	155. Other accidents including late effects							
E-63.	156. Drugs, medicaments causing adverse effects in therapeutic use	Y40-Y84						
E-64.	157. Suicide and self inflicted injury	X60-X84						

Figure 2 – Reporting pattern at the block level (n=11)

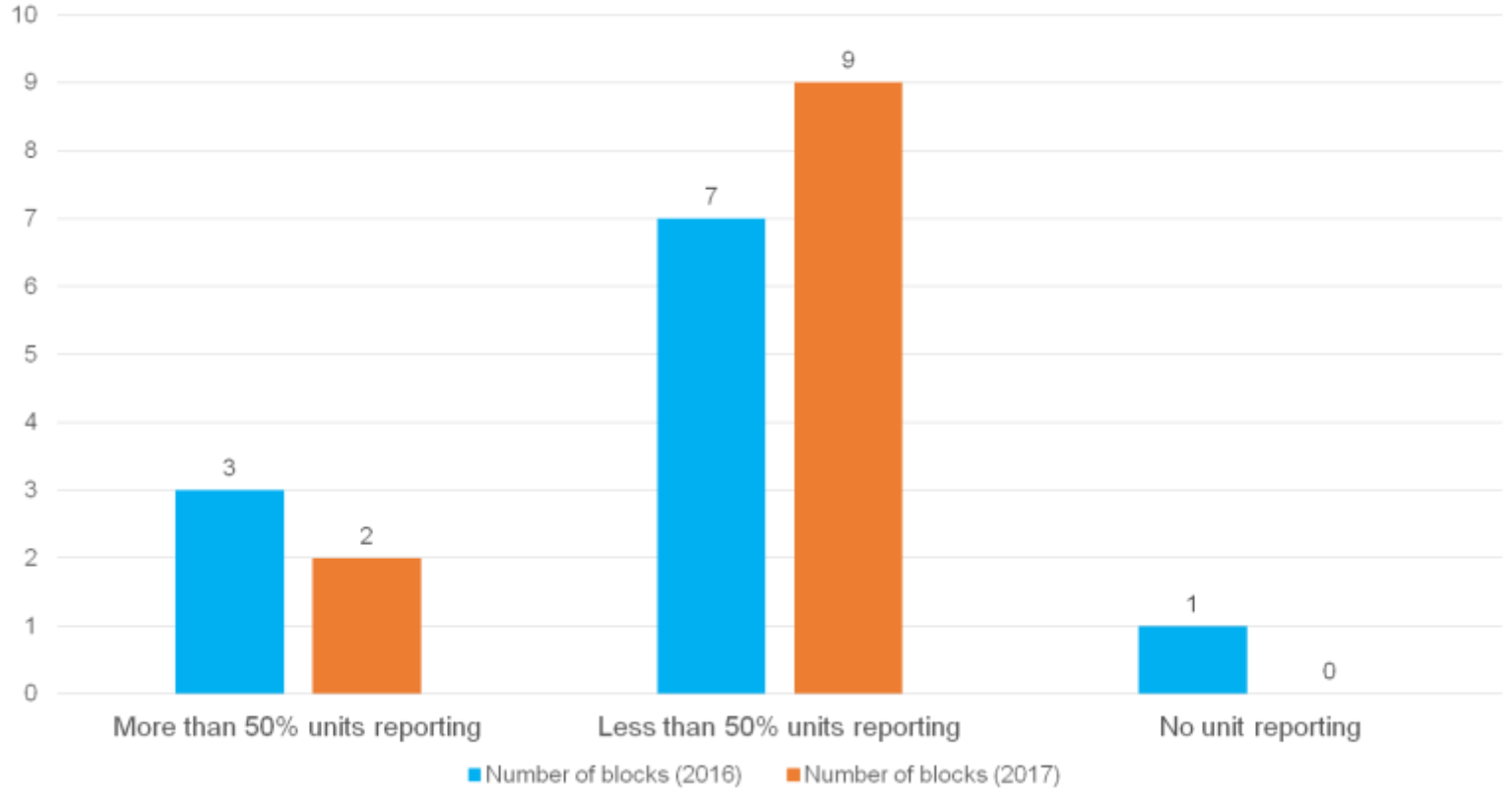
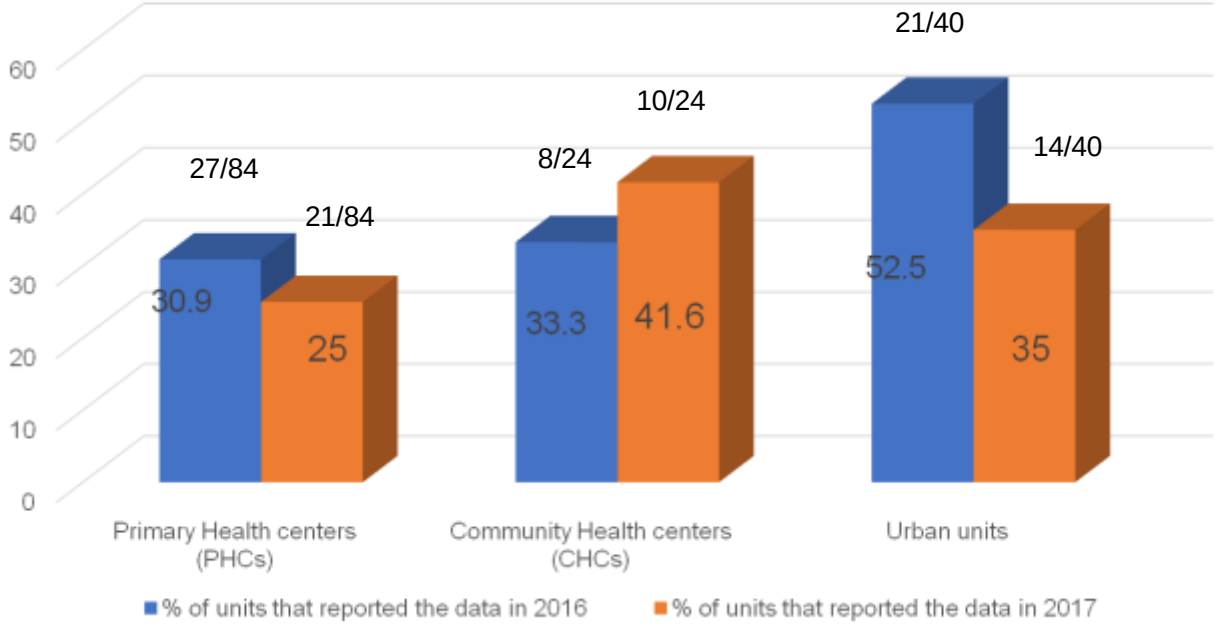
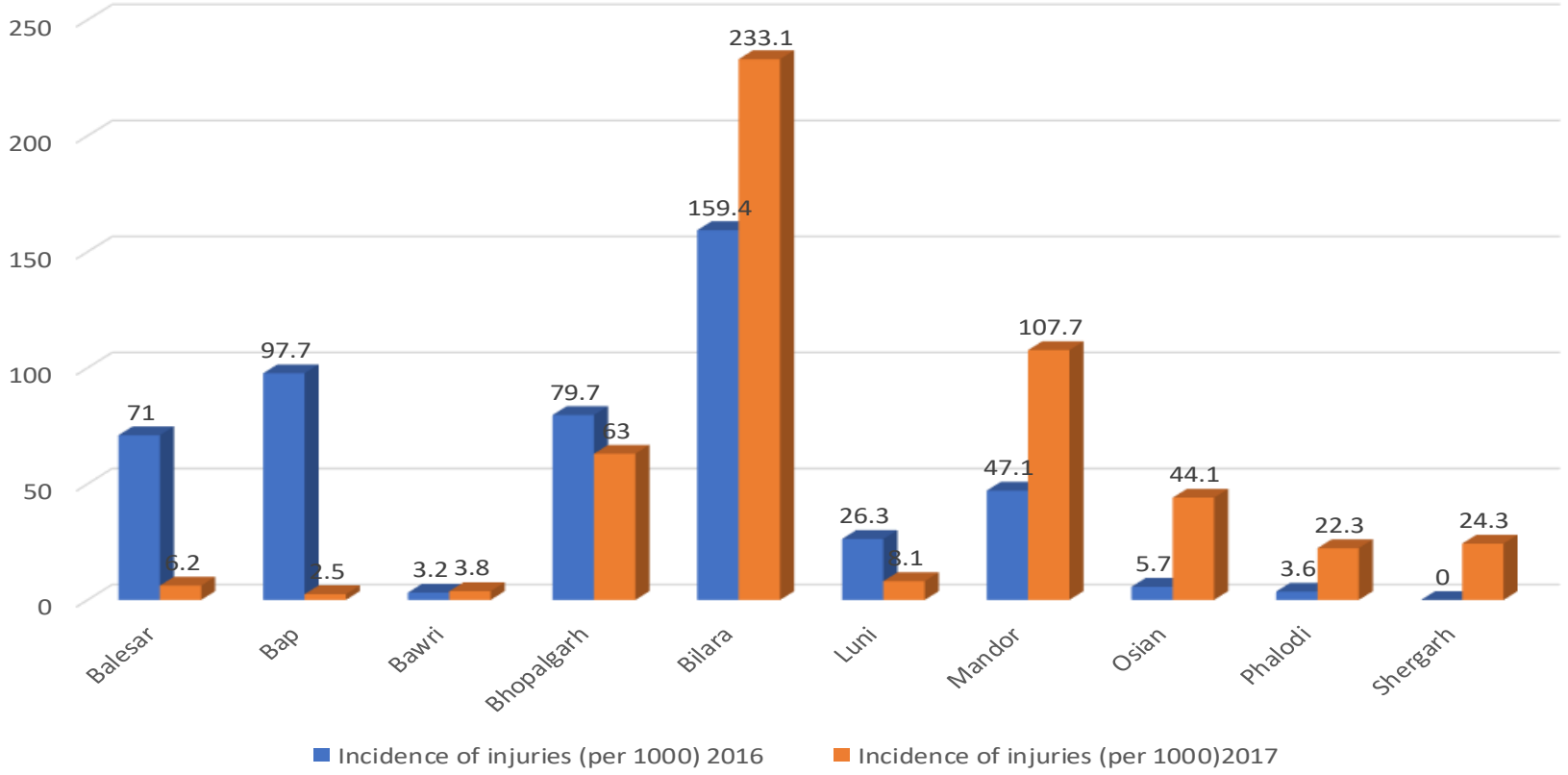


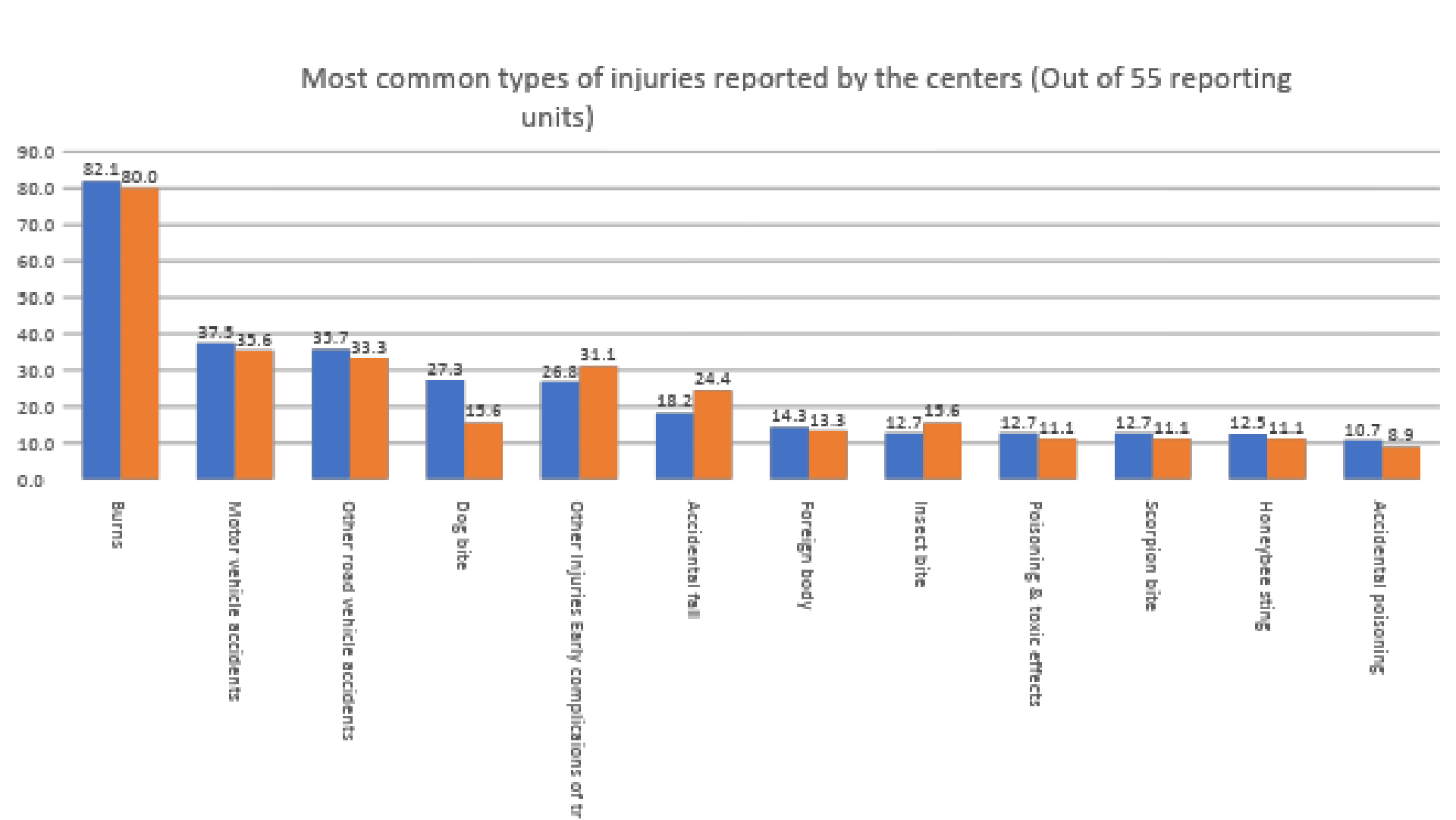
Figure 3 - Degree of reporting in various categories of reporting units [PHCs (n=84), CHCs (n=24), Urban units (n=40)]



Jodhpur district - block wise reporting status (2016 and 2017)

Figure 4 - Incidence of injuries (per 1000 population per year, as per the Census 2011, GoI) Block-wise in Jodhpur district




Most common types of injuries reported by the centers (Out of 55 reporting units)
90.0
80.0
70.0
60.0
50.0
40.0
30.0
20.0
10.0
0.0
82.1
80.0
37.5
35.6
35.7
33.3
27.3
15.6
26.8
31.1
18.2
24.4
14.3
13.3
12.7
15.6
12.7
11.1
12.7
11.1
12.5
11.1
10.7
8.9
Burns
Motor vehicle accidents
Other road vehicle accidents
Dog bite
Other injuries Early complications of tr
Accidental fall
Foreign body
Insect bite
Poisoning & toxic effects
Scorpion bite
Honeybee sting
Accidental poisoning

Possible reason for poor reporting of PHC/ CHC

- Role of Geographic distribution in determining reporting status ?
- Role of Medical officers in determining reporting status ?

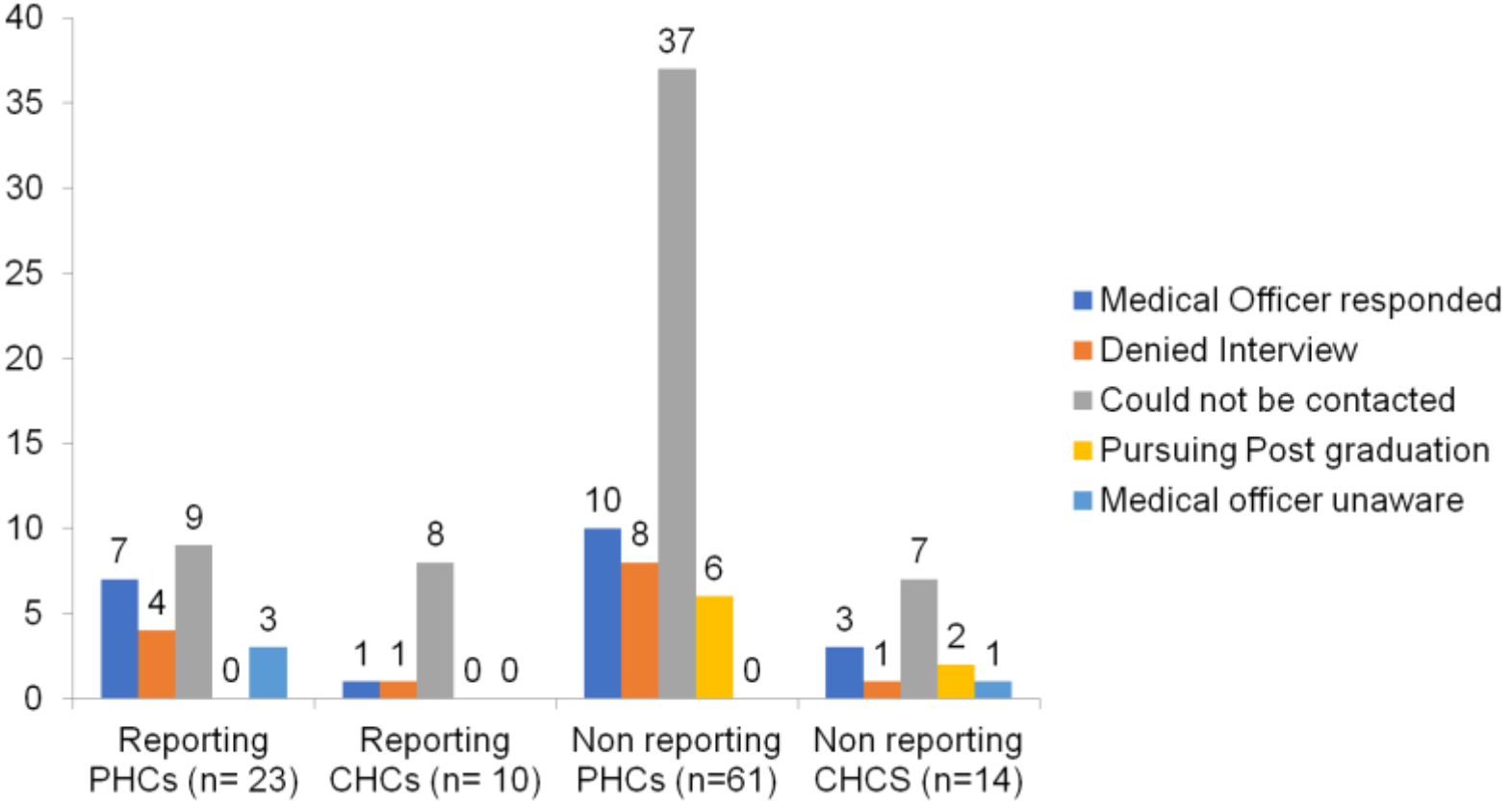
Figure – Jodhpur district reporting status of various units (PHCs, CHCs, Urban units) for year 2017

Possible reason for poor reporting of PHC/ CHC

- Role of Geographic distribution in determining reporting status ? - Yes

- Role of Medical officers in determining reporting status ?

Fig :Medical officer response to telephonic based HMIS interview



Attributes of Injury Surveillance system in Jodhpur (2016-2017)

- Timeliness - POOR
- Valid – ???
- Reliability – ???
- Representativeness – NO
- Completeness of the data – NO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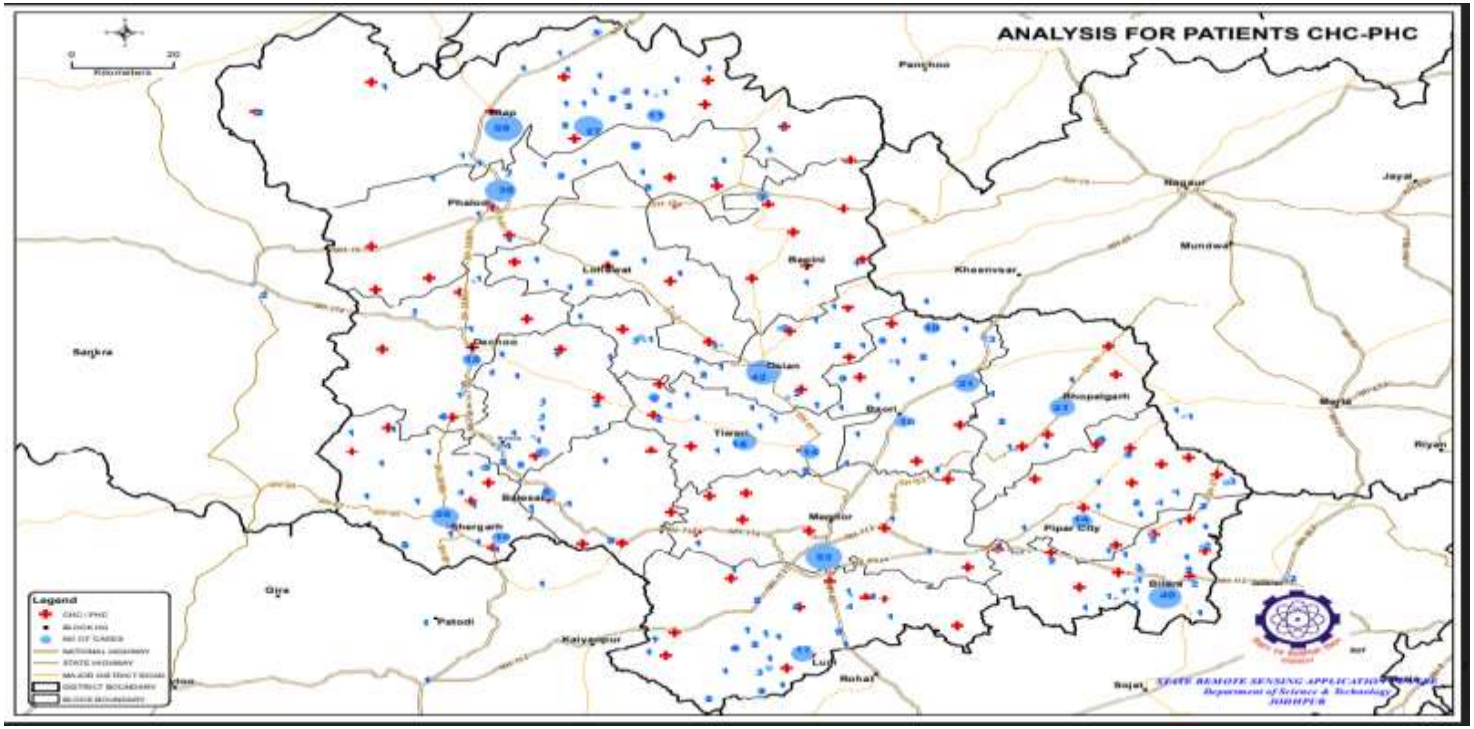


Fig : Accident patients in Jodhpur district transported by 108 ambulance to peripheral health care facilities (2017)

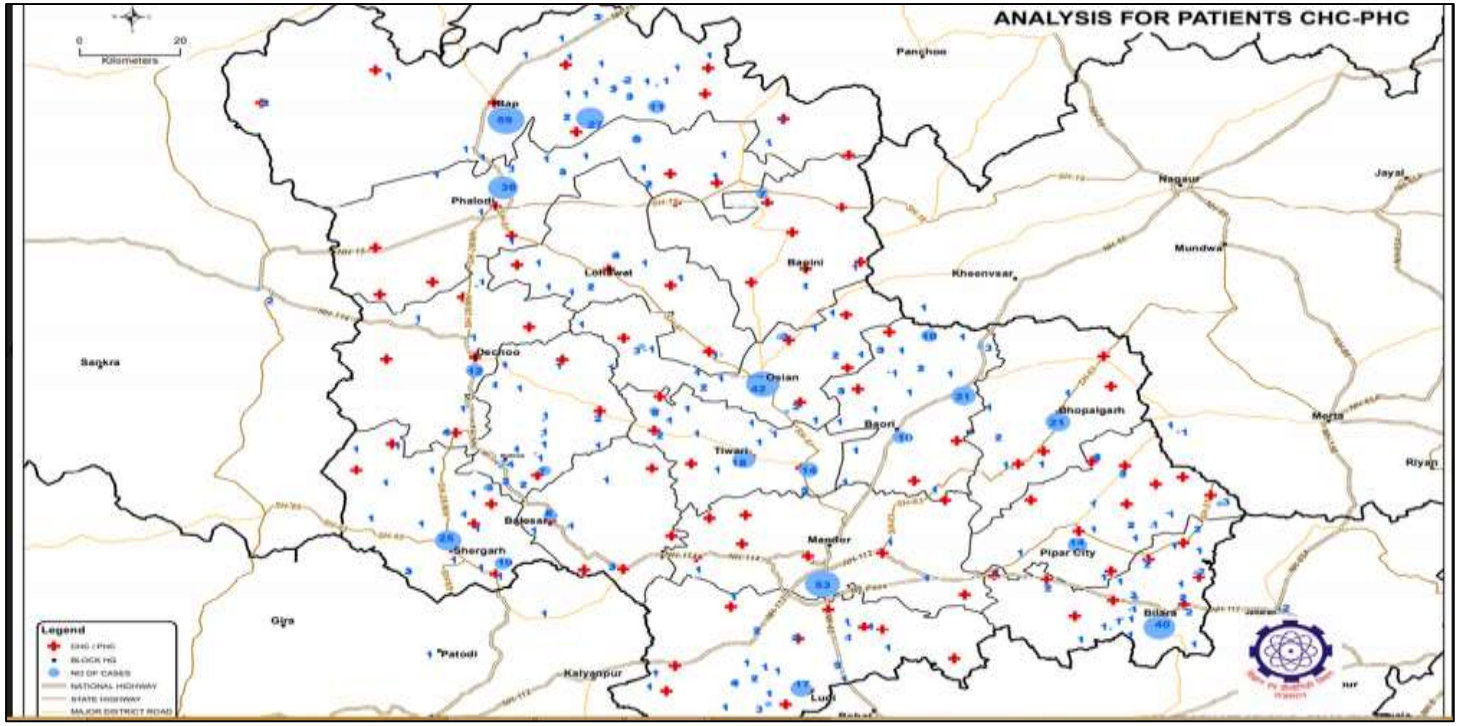


Fig : Accident patients in Jodhpur district transported by 108 ambulance to peripheral health care facilities (2018)

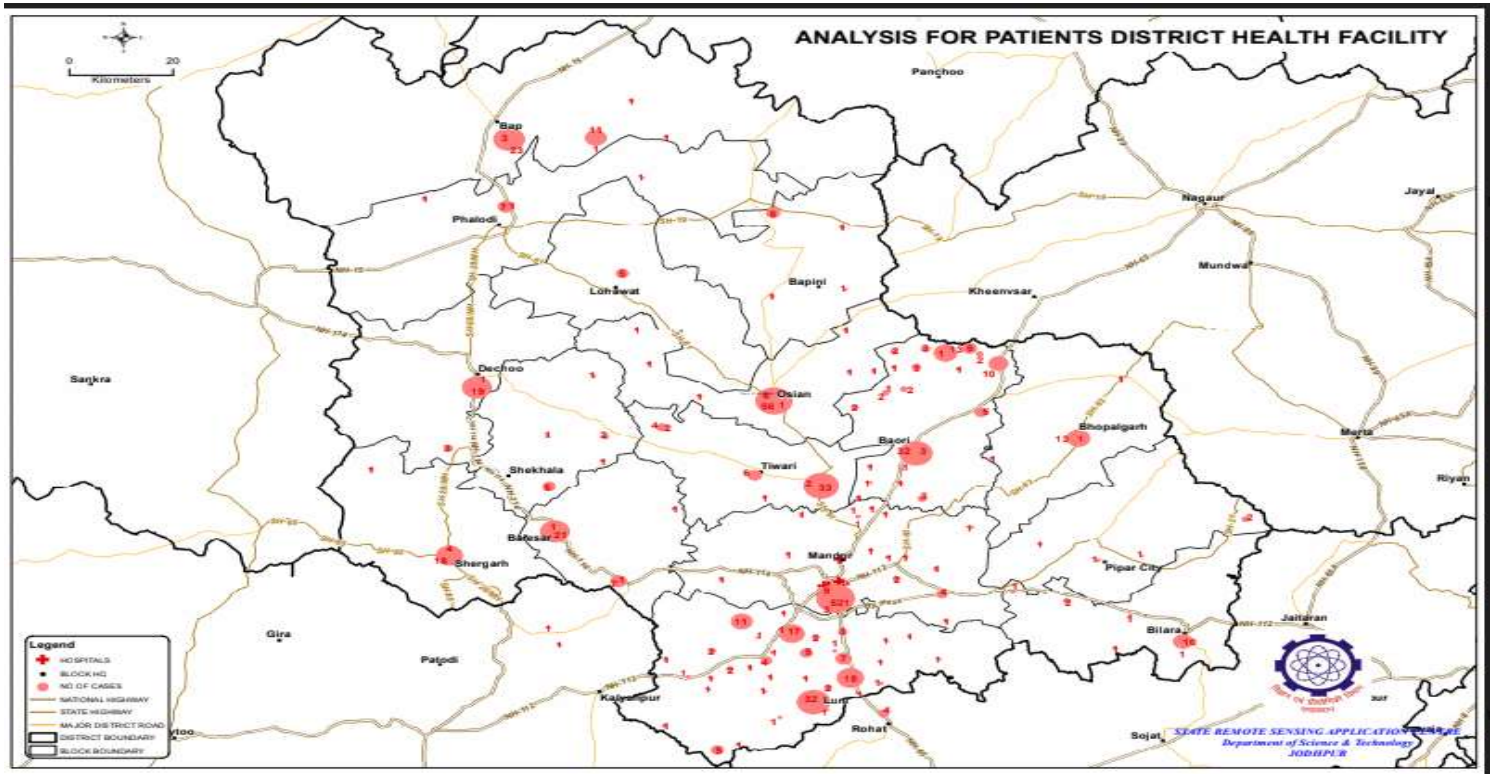
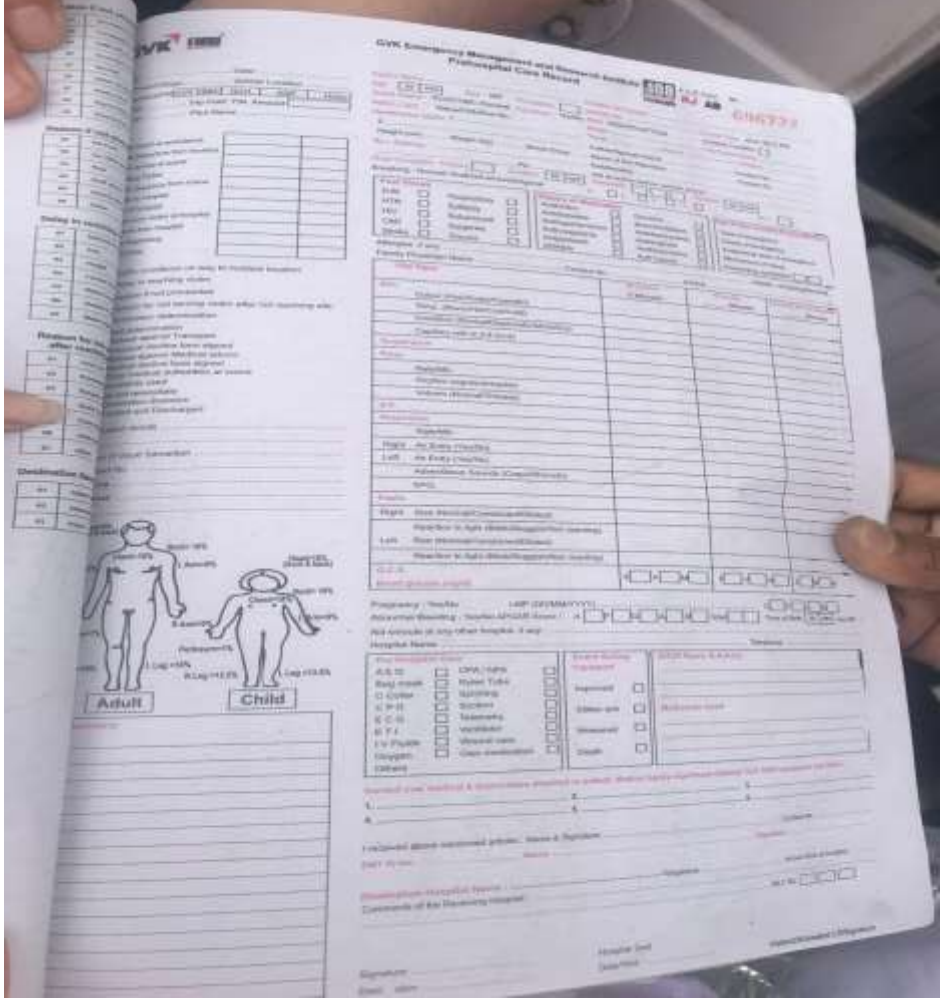
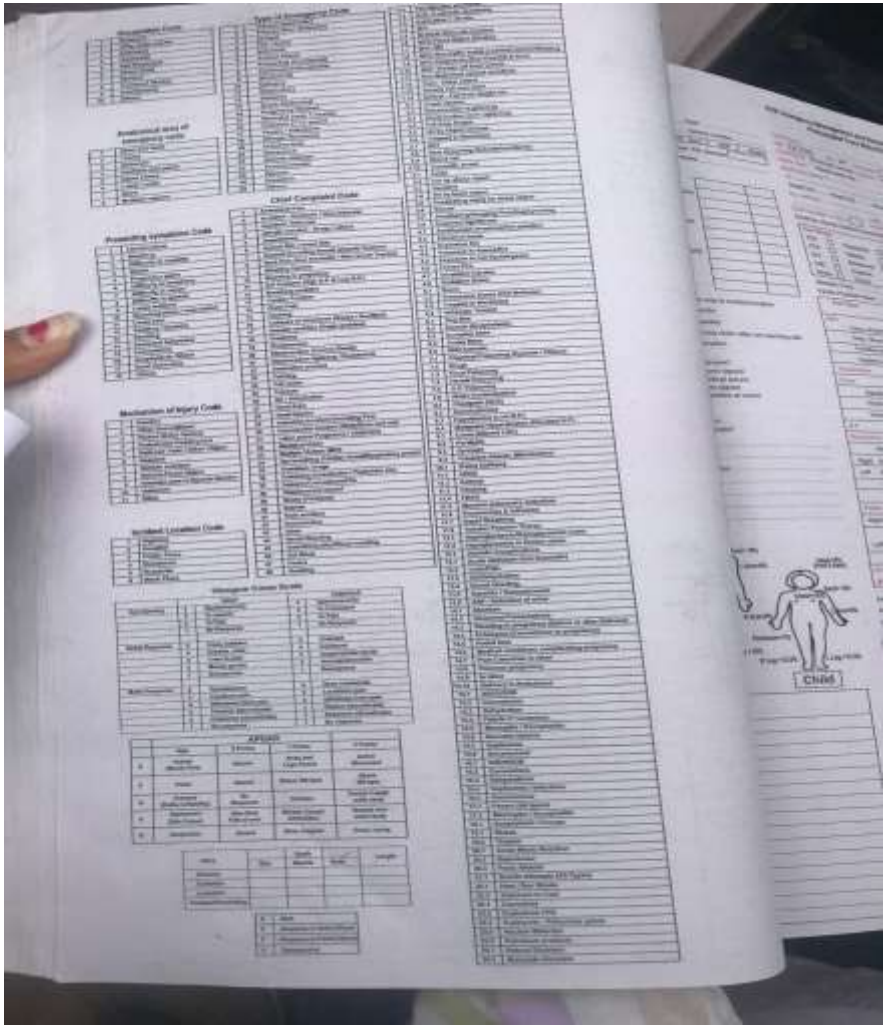


Fig : Accident patients in Jodhpur transported by 108 ambulance to Level 1 trauma care facility in Jodhpur (2017-18)


GVK Emergency Management and Research Institute
Prehospital Care Record
Adult
Child


Chief Complaint Code
Presenting Symptoms Code
Mechanism of Injury Code
Incident Location Code
Child

GVK EMRI

GVK Emergency Management and Research Institute

Patient Data Register (PDR)

S.No	Date	Time	[illegible]	[illegible]	Name of Patient	Age	Sex	[illegible]	[illegible]
1	[illegible]	12:19	[illegible]	56	[illegible]	30y	M	[illegible]	[illegible]
2	[illegible]	[illegible]	[illegible]	[illegible]	Vimla	19y	F	[illegible]	CHC [illegible]
3	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	24y	F	[illegible]	CHC [illegible]
4	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	25y	M	[illegible]	CHC [illegible]
5	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	20y	F	[illegible]	CHC [illegible]
6	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	M	PTA	[illegible]
7	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	M	[illegible]	CHC [illegible]
8	[illegible]	[illegible]	[illegible]	84	[illegible]	[illegible]	F	[illegible]	CHC [illegible]
9	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	F	[illegible]	CHC [illegible]
10	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	28y	F	[illegible]	CHC [illegible]
11	[illegible]	[illegible]	[illegible]	[illegible]	[illegible] devi	25y	F	[illegible]	CHC [illegible]
12	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	27y	F	L.P.	CHC [illegible]
13	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	M	[illegible]	CHC [illegible]
14	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	1 y	M	Head injury	[illegible]
15	[illegible]	1:18	[illegible]	[illegible]	Raju	4y	M	[illegible]	CHC [illegible]
16	6/2/19	5:20	[illegible]	[illegible]	Hamid	20y	F	L.P.	CHC [illegible]
17	6/2/19	9:52	[illegible]	[illegible]	Prem	25y	F	Post [illegible]	CHC [illegible]
18	7/2/19	5:18	[illegible]	[illegible]	Raju Devi	[illegible]	M	[illegible]	CHC [illegible]
19	8/2/19	11:17	[illegible]	242	Santosh Devi	[illegible]	F	L.P.	CHC [illegible]
20	9/2/19	12:07	[illegible]	[illegible]	Meena	30	M	[illegible]	CHC [illegible]
21	9/2/19	11:25	[illegible]	[illegible]	[illegible] Ram	27	F	LP	Referral
22	[illegible]/2/19	9:18	[illegible]	[illegible]	Pushpa	20	F	Anaemic	CHC [illegible]
23	10/2/19	4:16	[illegible]	[illegible]	Shanti	25	F	LP	CHC [illegible]
24	10/2/19	10:50	[illegible]	[illegible]	Kamla	20	F	LP	CHC [illegible]
25	10/2/19	8:25	[illegible]	[illegible]	Lalita	46	M	[illegible]	CHC [illegible]
26	11/2/19	8:58	[illegible]	[illegible]	HukmaRam	80	F	Chest pain	CHC [illegible]
27	11/2/19	4:09	[illegible]	[illegible]	Phuli devi	25	F	LP	CHC [illegible]
28	11/2/19	8:47	[illegible]	[illegible]	Shanti	[illegible]	M	Anaemia	CHC [illegible]
29	12/2/19	12:54	[illegible]	[illegible]	Heer Singh	96	F	Family planning	CHC [illegible]
30	13/2/19	8:98	[illegible]	[illegible]	Raju devi	20	F	LP	CHC [illegible]
31	13/2/19	[illegible]	[illegible]	[illegible]	[illegible]	21	F	LP	CHC [illegible]
[illegible]	[illegible]	6:23	[illegible]	[illegible]	[illegible]				
[illegible]	[illegible]	3:08	[illegible]	[illegible]	Manisha				

[illegible]	Name of Hospital	[illegible]	[illegible]	Name of EMT	[illegible]	Remarks (if any)
to CHC [illegible]		[illegible]	[illegible]	[illegible]	[illegible]	
to [illegible]	[illegible]	[illegible]	[illegible]	"	[illegible]	
to [illegible]	Hospital	[illegible]	[illegible]	"	[illegible]	
to [illegible]	Hospital	[illegible]	[illegible]	"	[illegible]	
to [illegible]	[illegible]	[illegible]	[illegible]	"	[illegible]	
to [illegible]	Hospital	[illegible]	[illegible]	"	[illegible]	
to CHC [illegible]		[illegible]	[illegible]	"	[illegible]	
to [illegible]	Hospital	[illegible]	[illegible]	"	[illegible]	
to [illegible]	Hospital	[illegible]	[illegible]	"	[illegible]	
to [illegible]	[illegible]	[illegible]	[illegible]	"	[illegible]	
to [illegible]	[illegible]	[illegible]	[illegible]	"	[illegible]	
to [illegible]		Puri	[illegible]	"	[illegible]	
to [illegible]		[illegible]	[illegible]	[illegible]	[illegible]	
to CHC [illegible]		[illegible]	[illegible]	[illegible]	[illegible]	
to [illegible]		[illegible]	[illegible]	[illegible]	[illegible]	
to [illegible]		Dinesh ji	[illegible]	"		
to [illegible]		[illegible]	[illegible]	"		
to [illegible]		Rajesh ji	[illegible]	"		
to [illegible]		Mahendra ji	[illegible]	[illegible]	[illegible]	
to [illegible] Jodhpur			[illegible]	[illegible]	[illegible]	
to CHC [illegible]			[illegible]	[illegible]	[illegible]	
to Umaid Hospital			[illegible]	[illegible]	[illegible]	
to Umaid Hospital			[illegible]	[illegible]	[illegible]	
to Umaid Hospital Jodhpur			[illegible]	[illegible]	[illegible]	
to MGH Jodhpur			[illegible]	[illegible]	[illegible]	
to MDM Jodhpur			[illegible]	[illegible]	[illegible]	
to Umaid Hospital Jodhpur			[illegible]	[illegible]	[illegible]	
to Umaid Hospital			[illegible]	"	[illegible]	
to Kawaliya ki dhani [illegible]			[illegible]	"	[illegible]	
to Umaid Hospital Jodhpur			[illegible]	[illegible]	[illegible]	
to Umaid Hospital Jodhpur			[illegible]	[illegible]	[illegible]	

GVK Emergency Management and Research Institute

Prehospital Care Record

108 P.C.R. Form No. RJ AB 696791

Jodhpur 5-4-19

Manisha

105 2591

Ramchandra

Ranawalla

338489	10:44
—	—
—	11:00
338578	12:28
	12:40
338613	2:40

	0 Minute	15 Minute	Handing over at Hospital
Colour	P	P	P
Temp	W	W	W
Condition	N	N	N
Temperature	98.6F	98.6F	98.6F
Pulse	72	72	78
Rhythm	R	R	R
B.P.	120/80	120/100	120/100
Respiration	18	18	18
Air Entry Right	N	N	N
Air Entry Left	N	N	N
SPO_2	98%	98%	98%
Pupils Right	N	N	N
Pupils Left	N	N	N

8571960

8440080

9549789514

Gupta Ranawalla

after from CHC pt have primary treatment to higher hospital

57906 Ramibharose

Umaid hospital Jodhpur

Assessment of pre hospital trauma care services in Jodhpur Rajasthan

- In depth Interview of 14 Emergency Medical Technicians (EMT) posted in ambulance done (total ambulance – 34)
- Mean age of participants was 29.1 years.
- All of the health personnel's conveyed that they were aware of Pre-hospital trauma triage protocol.
- Decision to transfer patient to a nearby peripheral government health facility (Community Health Centre or Primary Health Centre) or to transfer accident victims to tertiary trauma care facility in Jodhpur city was taken by EMT.
- Decision made as per injury criteria (multiple fractures, amputation) or after assessing blood pressure or consciousness level of patient.
- Minor injuries were transported to nearby health facilities while major injuries were transferred to trauma facility.

Assessment of 108 ambulance services in Jodhpur Rajasthan

Multiple emergency numbers exists across region 108,104, Highway - thus sufficient resources in the district to provide care to trauma/ emergency victims.

Following observations were made :

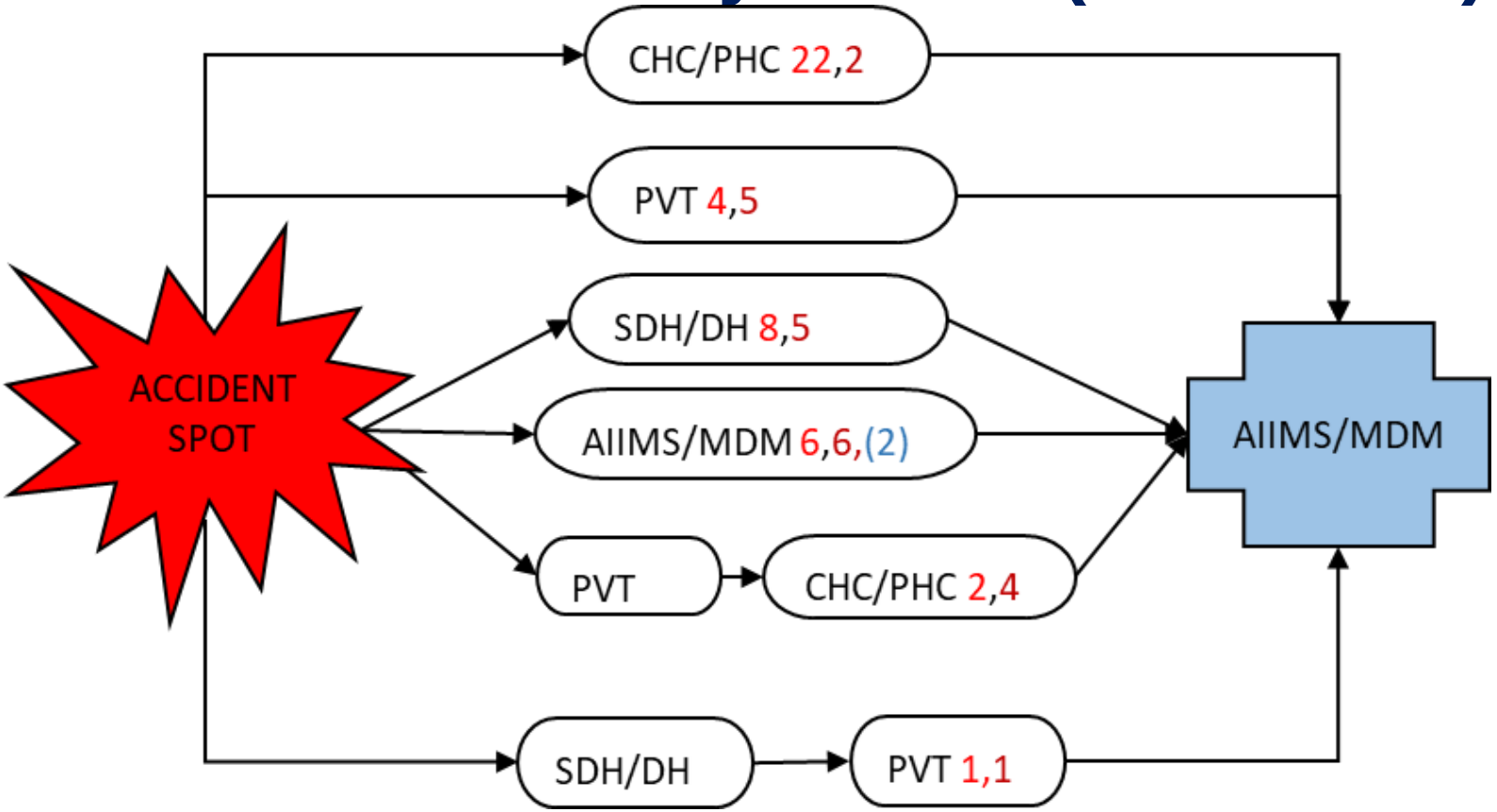
- **Ambulance crew:** work in extreme conditions (48 degree temp av) with the limited resources available ; described unclear pathway to continual professional development training; willing to engage and answered any questions honestly; crew shift pattern appeared to be non conducive to sound healthcare principles – 30 x 12 hour shifts per month; employees had variable range of 1 to 3 months of training but it was not evident what the baseline standard was as education of the 108 staff appeared variable.

Condition of ambulances : Considerable amounts of ambulance equipment witnessed were missing and or broken; many stretchers observed were rusted or jammed into position and could not leave the vehicle; Suction was available in only few ambulances; no vehicle had any form of monitoring (blood pressure, oxygen saturation, ecg etc) and no vehicle was capable of defibrillation; Mechanical condition of all the 108 ambulances visited was very poor; Multiple holes, dents missing lights, bumpers etc were witnessed; no radio system in any of the vehicles observed; Vehicles carry a reasonably comprehensive range of medication however these are not secured in all of the vehicles viewed the rear doors had no working locks and were held closed with a split pin with potential for medication theft and or abuse.

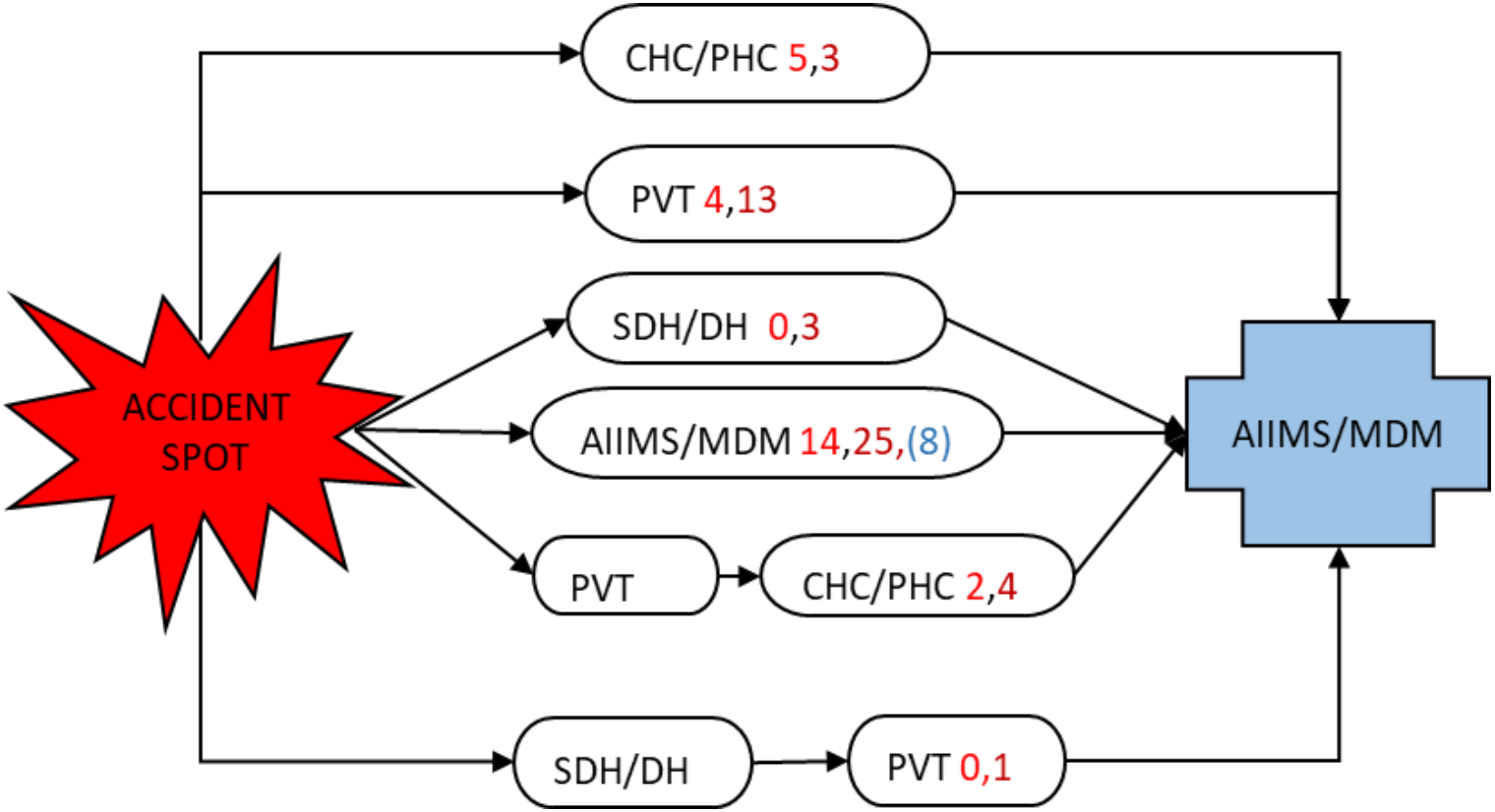
Team could not identify rescue procedures for road traffic collision victims who are entrapped. Crews described getting help from locals which is reasonable but we could not illicit information around formal technical rescue.

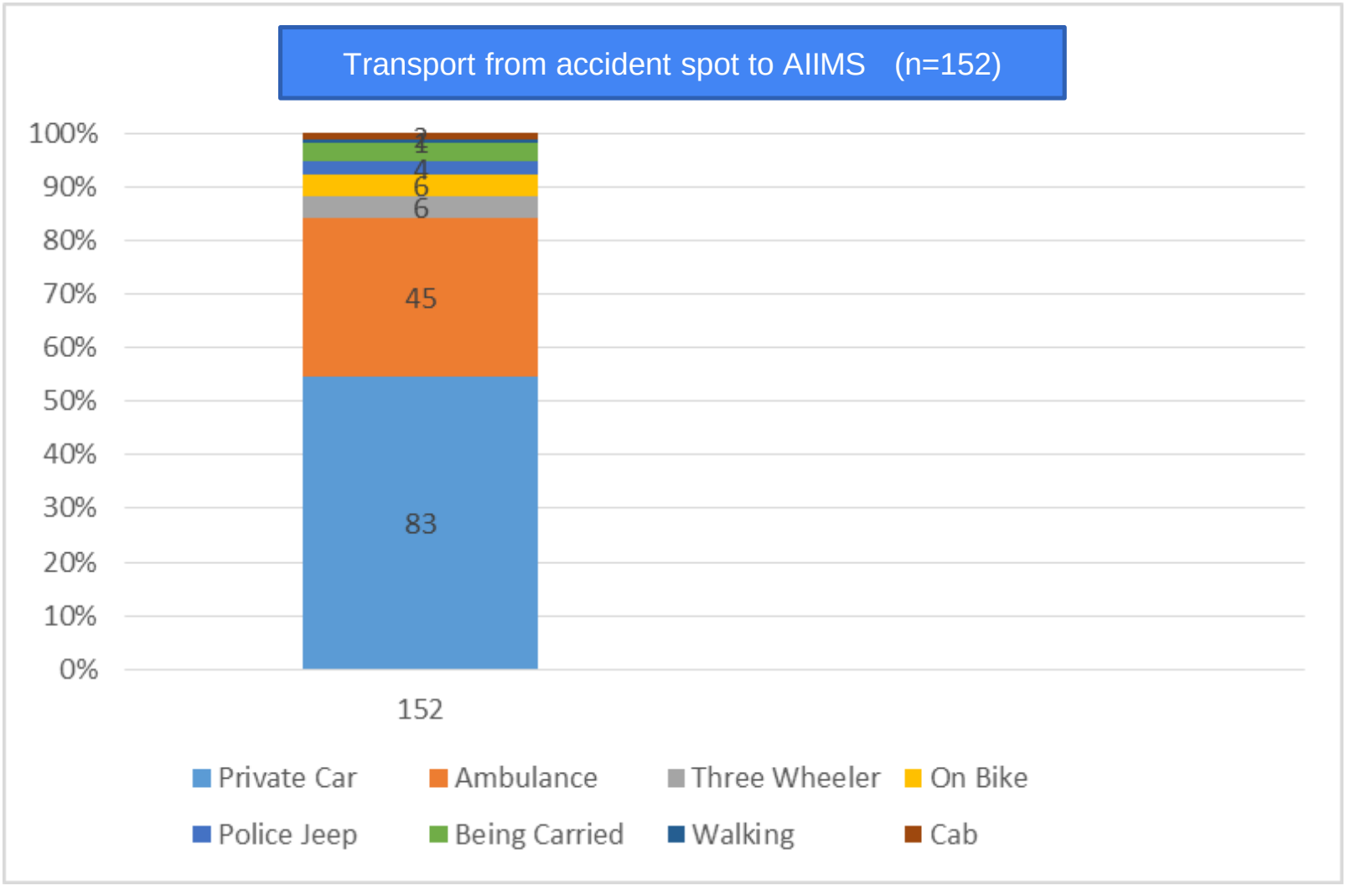
Based on the understanding developed, it seems that there is limited evidence of treatment enroute – the accumulated dirt and rust on equipment would support this view.

Trauma Care Pathway : Rural (Year 2019)



Trauma Care Pathway : Urban/ Semi Urban (Year 2019)




Transport from accident spot to AIIMS (n=152)
100%
90%
80%
70%
60%
50%
40%
30%
20%
10%
0%
83
45
6
6
4
1
1
152
Private Car
Ambulance
Three Wheeler
On Bike
Police Jeep
Being Carried
Walking
Cab

Role of bystanders

- Theory of planned behaviour (TPB) – is a psychological theory that links beliefs to behavior.
- The theory maintains that three core components - attitude, subjective norms, and perceived behavioral control, together shape an individual's behavioral intentions (Intention to help an accident victim)

J Inj Violence Res. 2023 Jan;15(1):33-43.
doi: 10.5249/jivr.v15i1.1770

Original Article

Predicting youth Intention to help a road accident victim in fast urbanizing district of India: A PLS-SEM approach based on the Theory of Planned Behavior

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Vikas Rajpurohit [f]

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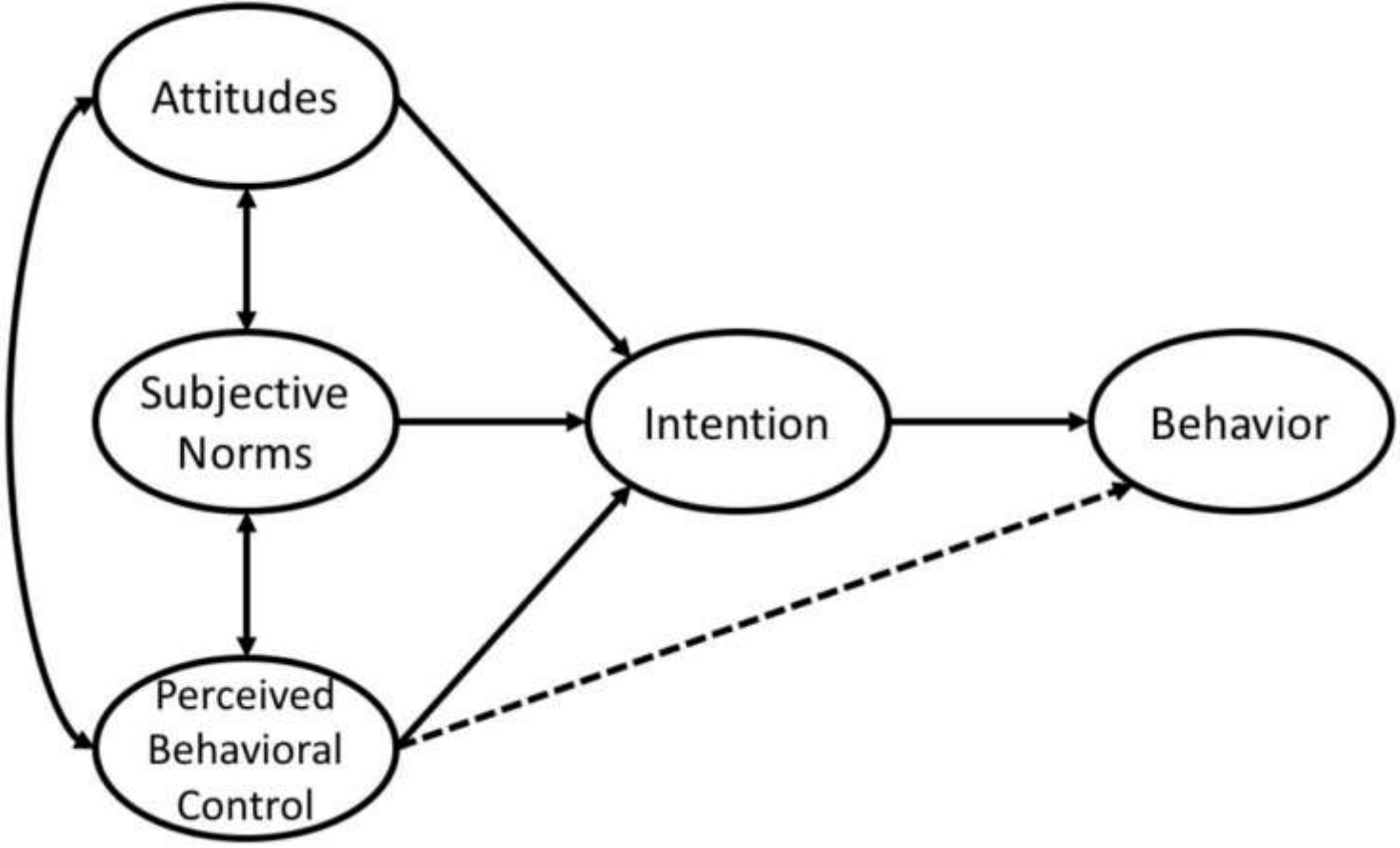

Attitudes
Subjective Norms
Perceived Behavioral Control
Intention
Behavior

Progress so far

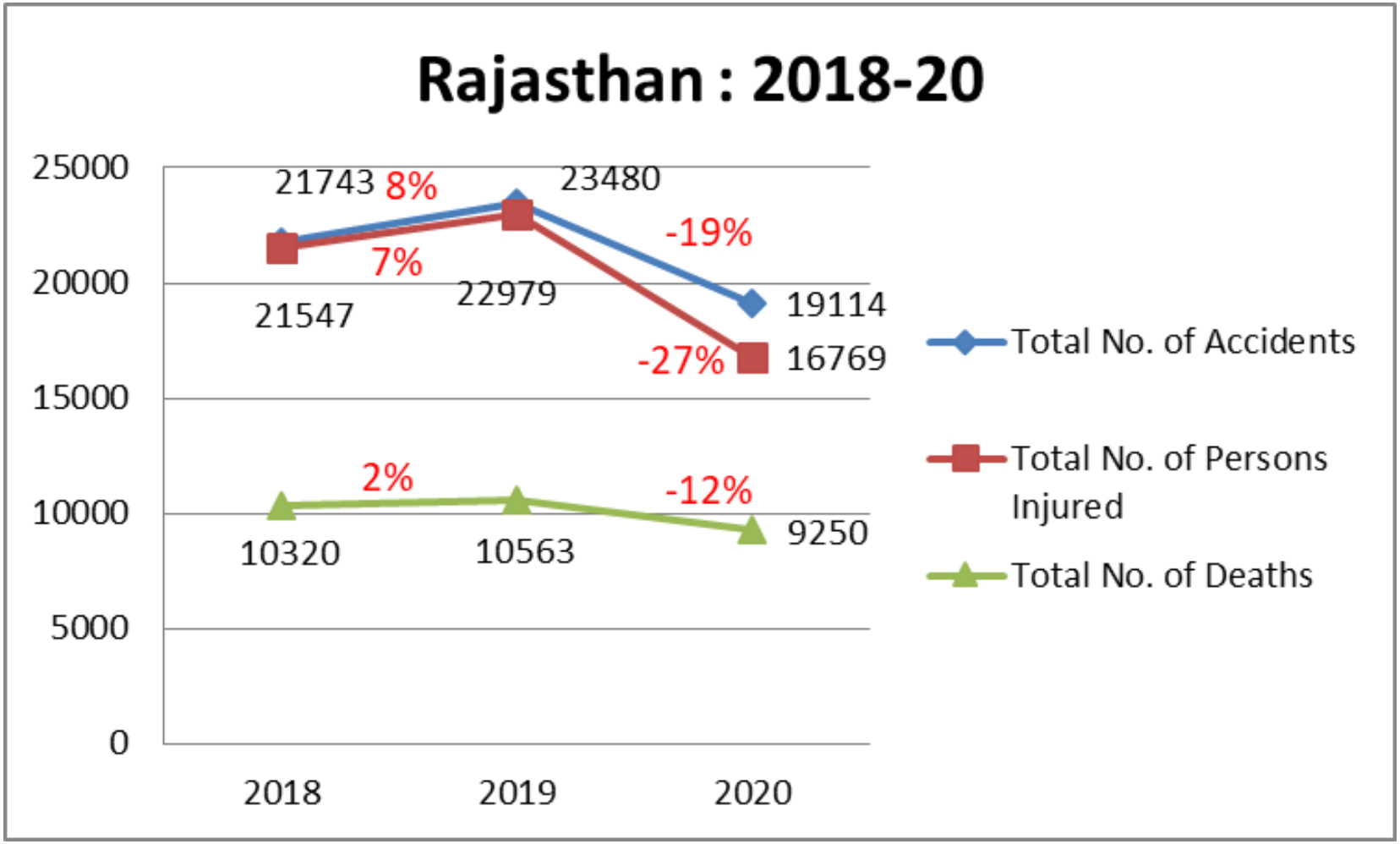
ROAD ACCIDENT DATA

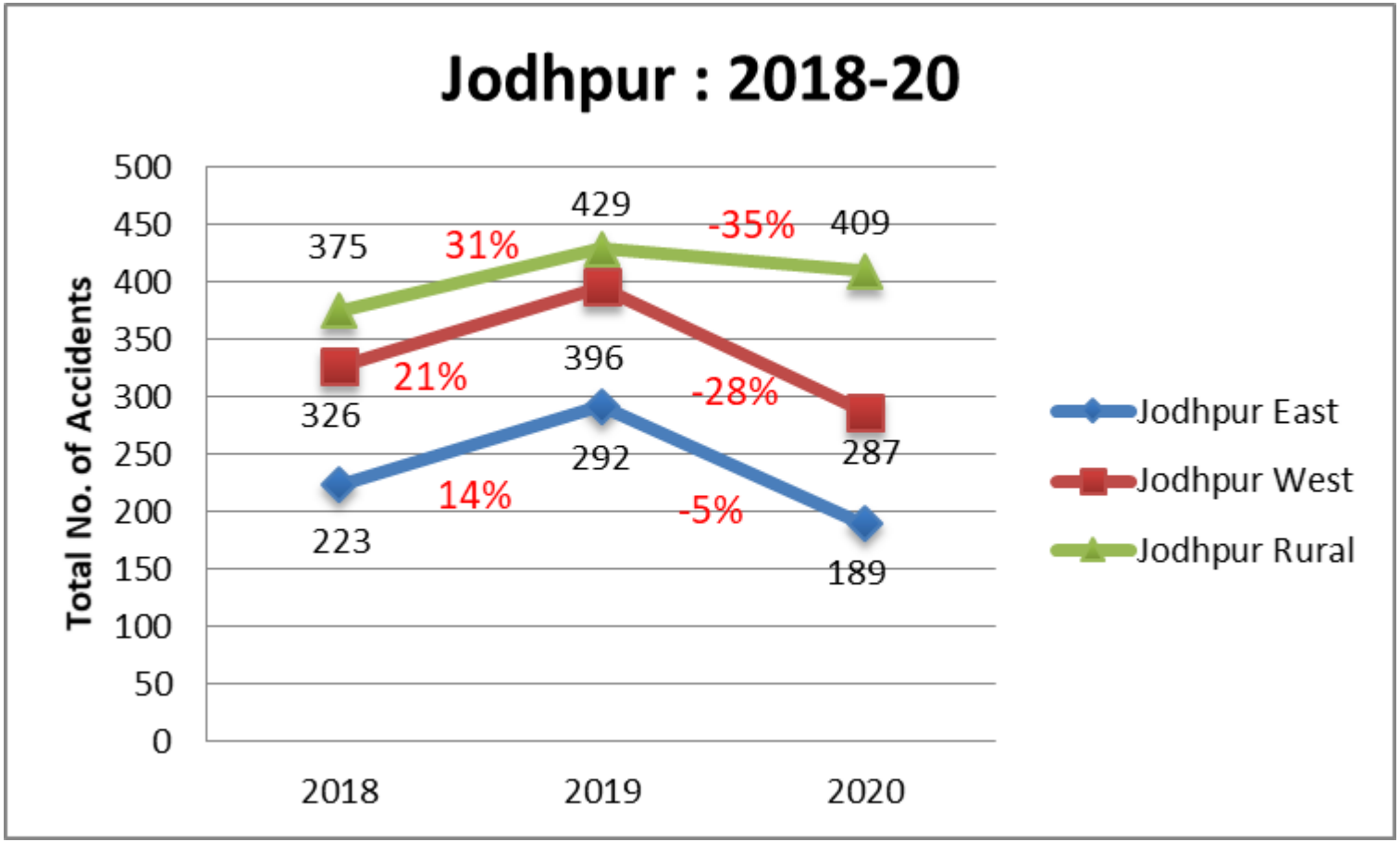
Road Accident Data 2018
Road Accident Data 2019
Road Accident Data 2020

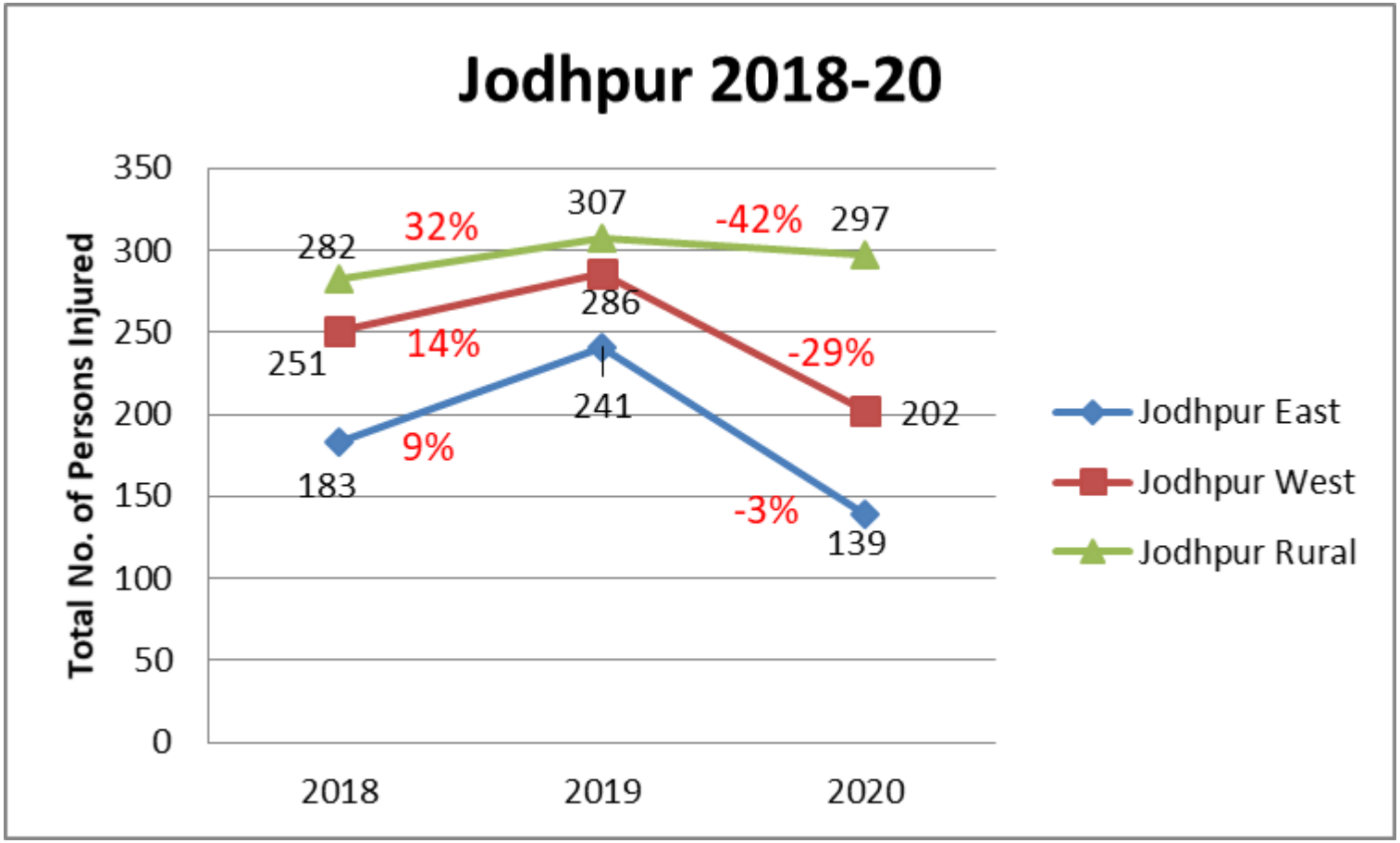
कार्यालय महानिदेशक पुलिस, राजस्थान, जयपुर।

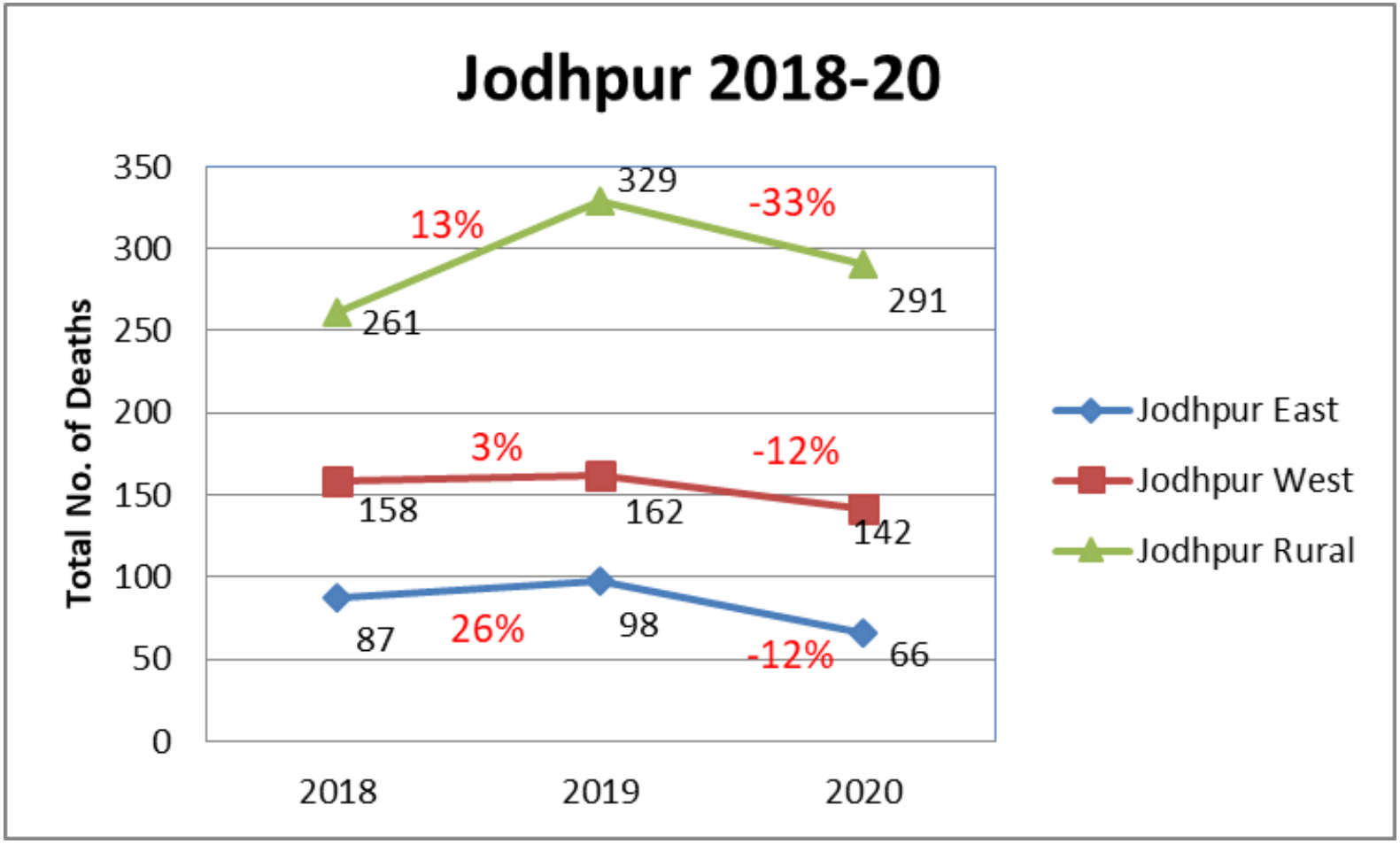
सड़क दुर्घटना का तुलनात्मक प्रतिवेदन वर्ष 2018 एवं 2019 (1 जनवरी से 31 दिसम्बर)

क्र.सं.	नाम जिला	कुल दुर्घटना			प्रतिशत (दुर्घटना)	घायल			प्रतिशत (घायल)	मृतक			प्रतिशत (मृतक)
		वर्ष 2018	वर्ष 2019	बढ़ोतरी/कमी		वर्ष 2018	वर्ष 2019	बढ़ोतरी/कमी		वर्ष 2018	वर्ष 2019	बढ़ोतरी/कमी	
1	जयपुर पूर्व	964	1056	92	10	739	884	145	20	182	198	16	9
2	जयपुर पश्चि	944	1077	133	14	779	849	70	9	283	276	-7	-2
3	जयपुर उत्त	237	228	-9	-4	208	192	-16	-8	52	49	-3	-6
4	जयपुर दक्षि	636	684	48	8	339	326	-13	-3	175	198	23	13
5	जयपुर ग्रामी	1131	1224	93	8	1079	1130	51	5	579	562	-17	-3
6	झुंझुनूं	570	618	48	8	491	614	123	25	264	230	-34	-13
7	सीकर	837	992	155	19	846	944	98	12	422	462	40	9
8	दौसा	537	623	86	16	554	582	28	5	312	312	0	0
9	अलवर	1344	1212	-132	-10	908	881	-27	-3	632	513	-119	-19
10	भिवाड़ी	0	209	209	0	0	185	185	0	0	93	93	0
11	बीकानेर	416	519	103	25	365	486	121	33	299	336	37	12
12	श्रीगंगानगर	329	362	33	10	307	388	81	26	307	320	13	6
13	चूरू	367	386	19	5	392	400	8	2	248	254	6	2
14	हनुमानगढ़	296	297	1	0	377	345	-32	-8	203	173	-30	-15
15	भरतपुर	649	714	65	10	477	480	3	1	362	360	-2	-1
16	धौलपुर	343	381	38	11	331	392	61	18	174	235	61	35
17	सवाईमाधोपु	327	361	34	10	375	373	-2	-1	134	165	31	23
18	करौली	250	268	18	7	238	347	109	46	110	113	3	3
19	अजमेर	1057	1174	117	11	969	1141	172	18	536	529	-7	-1
20	भीलवाड़ा	892	945	53	6	824	956	132	16	419	445	26	6
21	नागौर	626	679	53	8	610	624	14	2	423	461	38	8
22	टोंक	437	523	86	20	573	512	-61	-11	222	255	33	15
23	जोधपुर पूर्व	223	292	69	31	183	241	58	32	87	98	11	13
24	जोधपुर पश्चि	326	396	70	21	251	286	35	14	158	162	4	3
25	जोधपुर ग्रा	375	429	54	14	282	307	25	9	261	329	68	26
26	जैसलमेर	169	161	-8	-5	250	244	-6	-2	106	115	9	8
27	बाड़मेर	524	538	14	3	594	529	-65	-11	333	346	13	4
28	जालौर	271	335	64	24	269	383	114	42	165	203	38	23
29	पाली	625	686	61	10	632	859	227	36	356	378	22	6
30	सिरोही	377	402	25	7	496	541	45	9	229	258	29	13
31	उदयपुर	1247	1218	-29	-2	1336	1246	-90	-7	565	503	-62	-11
32	चित्तौड़गढ़	542	552	10	2	569	552	-17	-3	270	246	-24	-9
33	प्रतापगढ़	193	199	6	3	210	226	16	8	120	123	3	3
34	डूंगरपुर	455	480	25	5	479	500	21	4	214	200	-14	-7
35	बांसवाड़ा	460	497	37	8	506	563	57	11	237	218	-19	-8
36	राजसमन्द	544	561	17	3	733	569	-164	-22	258	267	9	3
37	कोटा शहर	466	491	25	5	478	486	8	2	89	96	7	8
38	कोटा ग्रामी	326	293	-33	-10	390	327	-63	-16	138	129	-9	-7
39	बूंदी	539	487	-52	-10	637	547	-90	-14	182	152	-30	-16
40	झालावाड़	498	514	16	3	765	691	-74	-10	170	147	-23	-14
41	बारां	392	416	24	6	504	650	146	29	142	154	12	8
42	जीआरपी अजमे	0	0	0	0	0	0	0	0	0	0	0	0
43	जीआरपी जोधपु	2	1	-1	-50	2	1	-1	-50	0	0	0	0
कुल योग		21743	23480	1737	8	21547	22979	1432	7	10370	10563	243	2


Rajasthan : 2018-20
25000
20000
15000
10000
5000
0
21743
8%
23480
-19%
7%
21547
22979
19114
-27%
16769
2%
-12%
10320
10563
9250
2018
2019
2020
Total No. of Accidents
Total No. of Persons Injured
Total No. of Deaths


Jodhpur : 2018-20
Total No. of Accidents
500
450
400
350
300
250
200
150
100
50
0
2018
2019
2020
375
429
409
326
396
287
223
292
189
31%
-35%
21%
-28%
14%
-5%
Jodhpur East
Jodhpur West
Jodhpur Rural


Jodhpur 2018-20
Total No. of Persons Injured
350
300
250
200
150
100
50
0
2018
2019
2020
282
307
297
251
286
202
183
241
139
32%
-42%
14%
-29%
9%
-3%
Jodhpur East
Jodhpur West
Jodhpur Rural


Jodhpur 2018-20
Total No. of Deaths
350
300
250
200
150
100
50
0
2018
2019
2020
329
261
291
13%
-33%
158
162
142
3%
-12%
87
98
66
26%
-12%
Jodhpur East
Jodhpur West
Jodhpur Rural

Snapshot of Form 8

c	टाइफाइड	0	25
d	अस्थमा (COPD), Respiratory Infection	0	49
e	टीबी (Tuberculosis)	0	15
f	पीयुओ (Pyrexia of unknown origin)	0	130
g	Diaria with dehydration	0	130
h	Hepatitis	0	20
53.5	**आपातकालीन सेवाओं (इमरजेन्सी) में भर्ती हुए रोगियों की संख्या**	2	17
	भर्ती हुए रोगियों का बीमारी के अनुसार विवरण		
a	Trauma(Accident,Injury,Poisoning etc.)	0	10
b	Burn	0	0
c	Obstetrics complications	0	0

d	Snake bite	2	7
e	Acute Cardiac Emargencies	0	0
f	CVA(Cerebovascular Disease)	0	0
g	Others	0	0
53.6	आपतकालीन सेवाओं में इलाज के दौरान मृत रोगियों की संख्या	0	0
54	**ऑपरेशन (C-Section के अलावा)**		
54.1	ऑपरेशन मेजर (सामान्य एवं लोकल निश्चेतन दारा)	0	8
54.2	इसमें से Gynaecology-Hysterectomy Surgeries	0	0

Report of Trauma

Report of Trauma (Accident ,Injury, Poisoning etc.)

Upto Month : March 2022

S.No	Locations	Number of Trauma (Accident , Injury, Poisoning etc.)	Number of Burn	Number of Obstetrics complications	Number of Snake bite
1	Bap	0	0	0	11
2	Baru	2	0	0	3
3	Bawri	24	5	0	0
4	Bhopalgarh	161	8	5	27
5	Bilara	7058	30	20	18
6	Borunda	0	5	0	0
7	Dhundhara	22	0	0	6
8	Jhanwar	0	0	0	0
9	Luni	114	8	17	3
10	Banaad	87	0	0	0
11	Mathaniya	8	1	0	0
12	Osian	343	0	0	45
13	Tiwari	12	0	0	0
14	Lohawat	0	0	0	4
15	Dechu	15	6	0	3
16	Setrawa	0	0	0	10
17	shergarh	239	10	2	33
	Rural Total :	8085	73	44	163
	District Private Hospitals	40	2	34	0
9	DH Phalodi	1454	74	0	236
20	Mathura Das Mathur Hosp (Medical College)	132487	5	0	8
22	Paota Hospital (Medical College)	423	5	0	0
Urban		134364	84	0	244
Total		**142489**	**159**	**78**	**407**

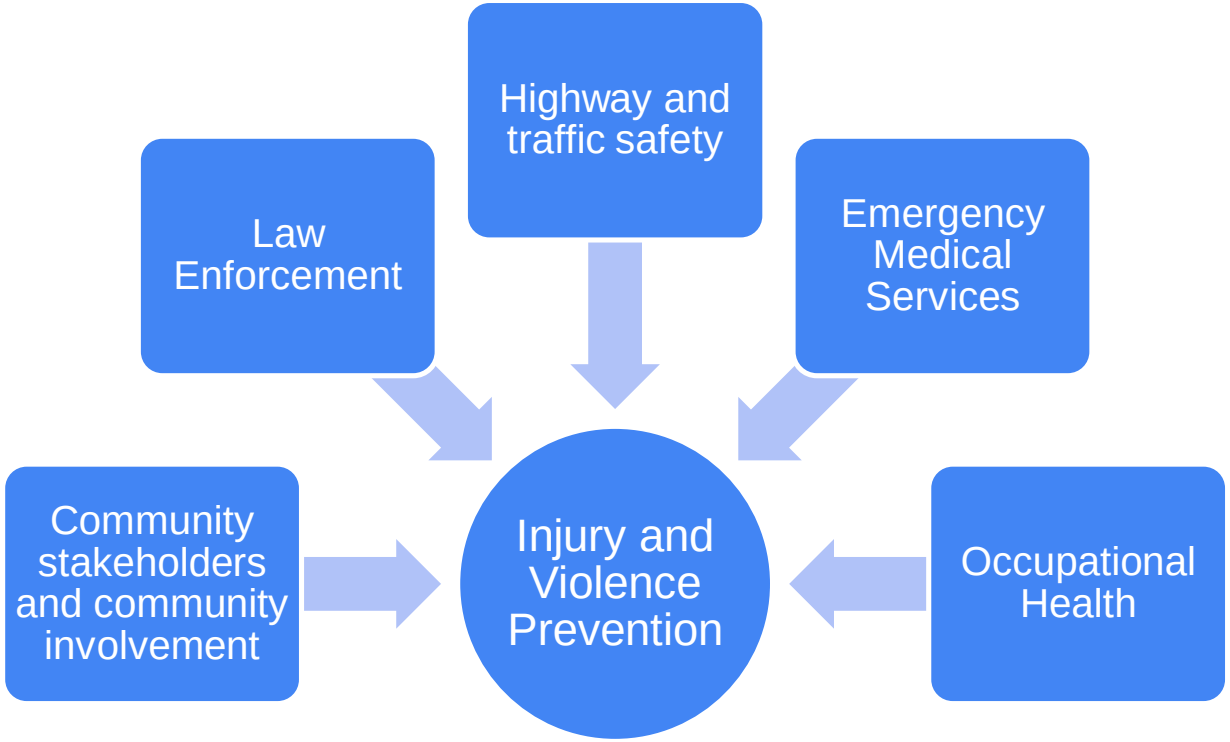
Report of Trauma (Accident ,Injury, Poisoning etc.)

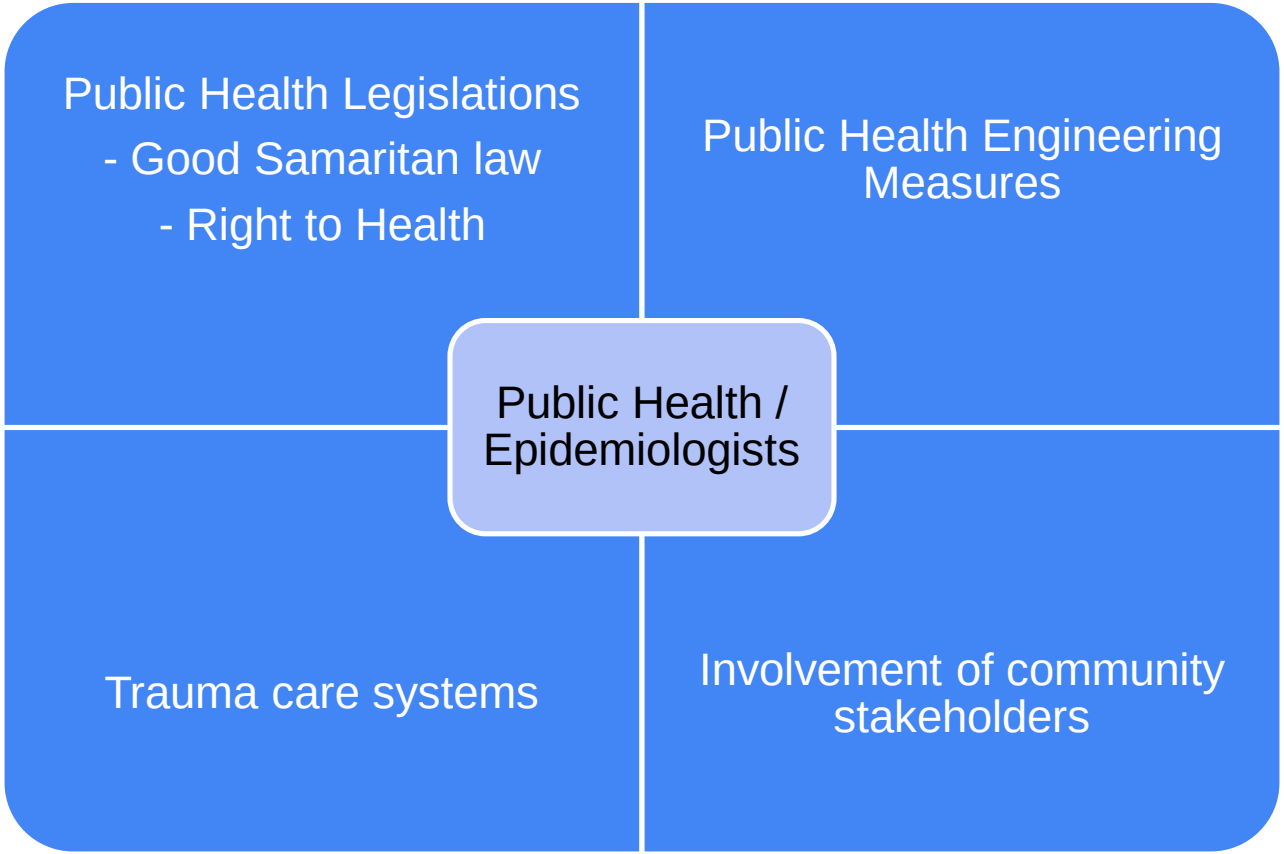
Upto Month : March 2023

S.No	Locations	Number of Trauma (Accident ,Injury, Poisoning etc.)	Number of Burn	Number of Obstetrics complications	Number of Snake bite
1	Balesar	0	0	0	0
2	Chamu	13	3	0	0
1	Bap	0	0	0	20
2	Baru	10	1	0	6
3	Kelansar	0	0	0	0
4	TEPU	0	0	0	0
1	Bawri	56	5	1	0
2	HATUNDI	10	4	42	0
	Private Hospitals	0	0	1	0
1	Asop	0	0	0	0
2	Bhopalgarh	1334	8	35	29
1	Bilara	1352	21	0	11
2	Borunda	15	3	0	3
1	Sdh Salawas	0	0	0	0
1	Dhava	13	0	0	0
2	Dhundhara	34	0	0	0
3	Jhanwar	0	0	0	0
4	Luni	146	26	0	7
1	Banaad	12	0	0	0
2	Keru	0	0	0	0
	Private Hospitals	10	0	0	0
1	Satellite Hospital Mathaniya	46	2	0	2
1	BAPINI	0	0	0	0
2	Osian	380	0	0	0
3	Samraoun	0	0	0	0
4	Tiwari	45	2	0	0
1	AOU	0	0	0	16
2	Lohawat	0	0	0	0
3	Peelwa	48	1	4	0
1	Dechu	81	17	16	15
2	Setrawa	0	0	0	26
3	Shergarh	180	39	0	44
4	Tena	0	0	0	0
Rural Total		**3785**	**132**	**144**	**189**
	District Private Hospital	437	11	153	4
1	DH Pipar city	0	0	0	0
2	DH Phalodi	1486	1021	0	216
16	Mandor Hospital (Medical College	13	1	0	0
17	Mathura Das Mathur Hospital (medical College	95552	0	0	0
26	Satellite Hospital Digari Kala (CMHO office)	8	4	0	0
30	UCHC Residency (CHC)	2	0	0	0
Urban Total		**97061**	**106**	**0**	**222**
Total		**101283**	**249**	**297**	**415**

The Way Forward

Multi- disciplinary Integrated approach




Public Health Legislations
- Good Samaritan law
- Right to Health
Public Health Engineering Measures
Public Health / Epidemiologists
Trauma care systems
Involvement of community stakeholders

IAE
INDIAN ASSOCIATION OF EPIDEMIOLOGY

(Regd. No. S/ 25118 of 1993)

Sarita Vihar, Delhi

Mailing Address:
529-C, Nirman Bhawan,
New Delhi 1100108

Dear All,

IAE is organizing the 13th National Conference on "Epidemiology Driven Collaboration and Resources Sharing to Achieve More in National Health Programmes and Activities" from 29th to 30th April, 2023 at India Habitat Centre.

Hon'ble Secretary (H&FW), Special Secretary (Health) & Director General of Health Services will address the participants during Inaugural Session.

During the conference, we will have scientific sessions on various National Health Programmes. Sessions will be chaired by concerned Joint Secretaries, Co-chaired by National Programme Manager in Directorate General of Health Services and renowned epidemiologists.

Contribution of Public Health Specialists and Epidemiologists is often underestimated. This is an opportunity not only to learn from others but also to showcase the valuable and effective contribution of Public Health Specialists & Epidemiologists in preventing diseases, disabilities and ultimately improving the health status of people in our country.

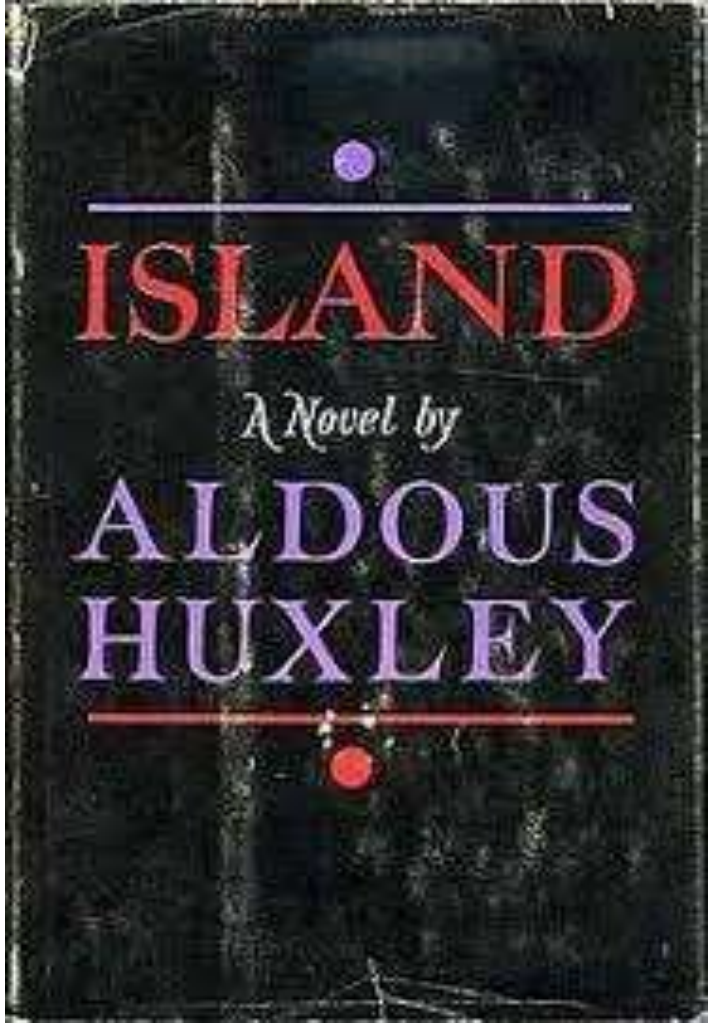
Let us stand together for our pride and due recognition by raising our knowledge and skill & contributing more to the society.

I therefore request all concerned to register and join the conference to witness this important occasion. You are also invited to be a member of IAE.

Regards.

Anil Kumar
28.04.2023
(Dr Anil Kumar)

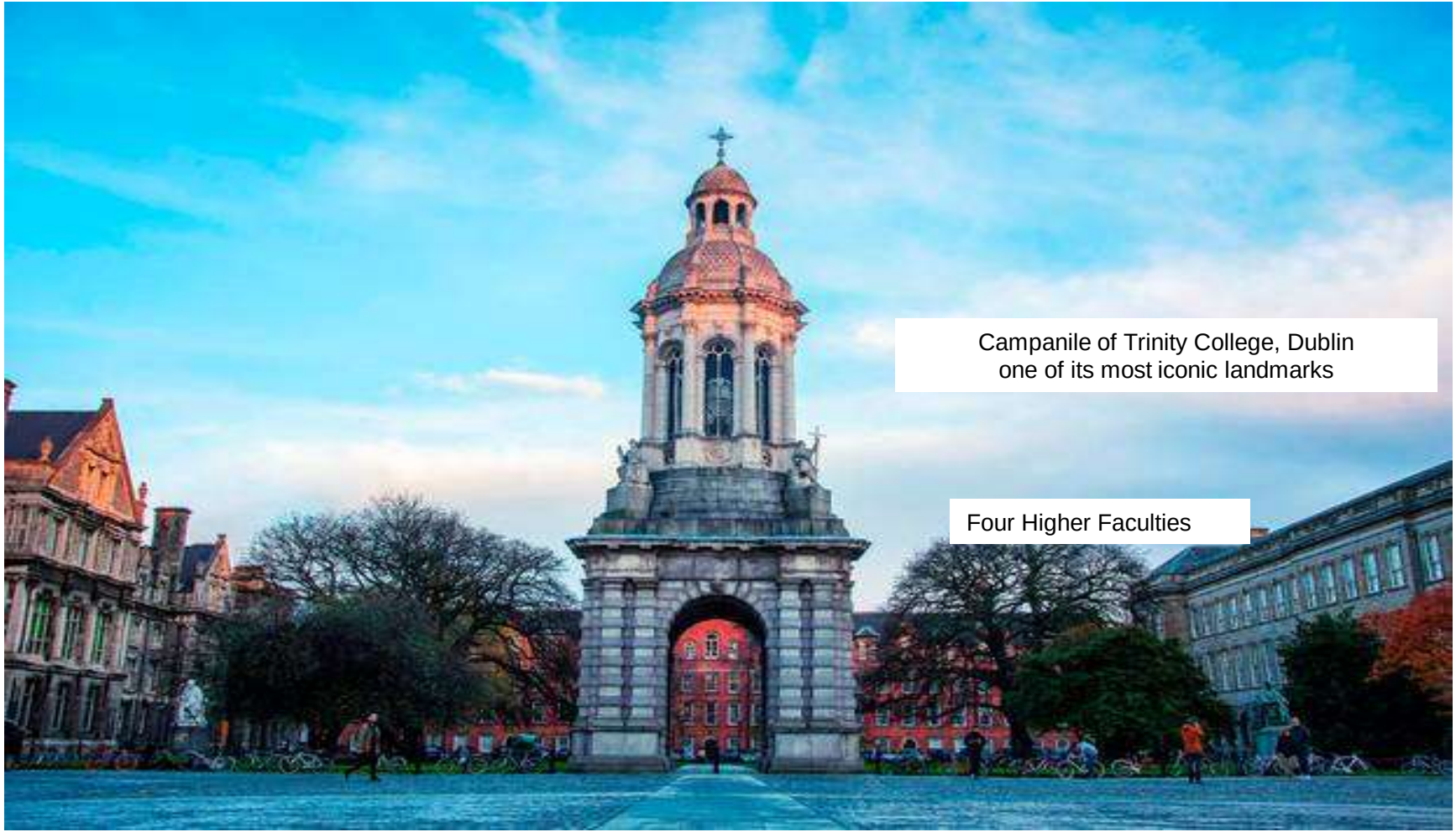
President



Dialogue between Dr Will & Pala queen

- Dr Will - "So you think our medicine's pretty primitive?"
- Pala Queen - "That's the wrong word. It isn't primitive. It's fifty percent terrific and fifty percent nonexistent. Marvelous antibiotics—but absolutely no methods for increasing resistance, so that antibiotics won't be necessary. Fantastic operations—but when it comes to teaching people the way of going through life without having to be chopped up, absolutely nothing.
- And it's the same all along the line. Alpha Plus for patching you up when you've started to fall apart; but Delta Minus for keeping you healthy. Apart from sewerage systems and synthetic vitamins, you don't seem to do anything at all about prevention.
- And yet you've got a proverb: prevention is better than cure."
- "But cure," said Will, "is so much more dramatic than prevention. And for the doctors it's also a lot more profitable

THANK YOU


Campanile of Trinity College, Dublin
one of its most iconic landmarks
Four Higher Faculties

Divinity
with a cross

Science
with a staff

Medicine
with a writing tablet

Law
with a fasces

Clinical Procedures Performed at DH/CHC (Year 2022)

Clinical Procedures	DH (n=4)	CHC (n=8)
	No. of hospitals	No. of hospitals
	Count	Count
Triage	4	8
Resuscitation	4	8
Stabilisation of injury patients	4	8
Management and referral, as appropriate	4	8
Medico Legal Reporting	4	8

Common Surgical Procedures	DH (n=4)	CHC (n=8)
	No. of hospitals	No. of hospitals
	Count	Count
Suturing	4	8
Wound debridement	4	8
Incision & drainage of abscess	4	8
Burn management	4	5
Splinting	4	5
Casting	4	3
Traction (closed fracture)	4	3
Open Treatment of Fracture	3	1
Chest tube insertion	0	3
Tetanus prophylaxis	4	8
Acute pain management	4	8

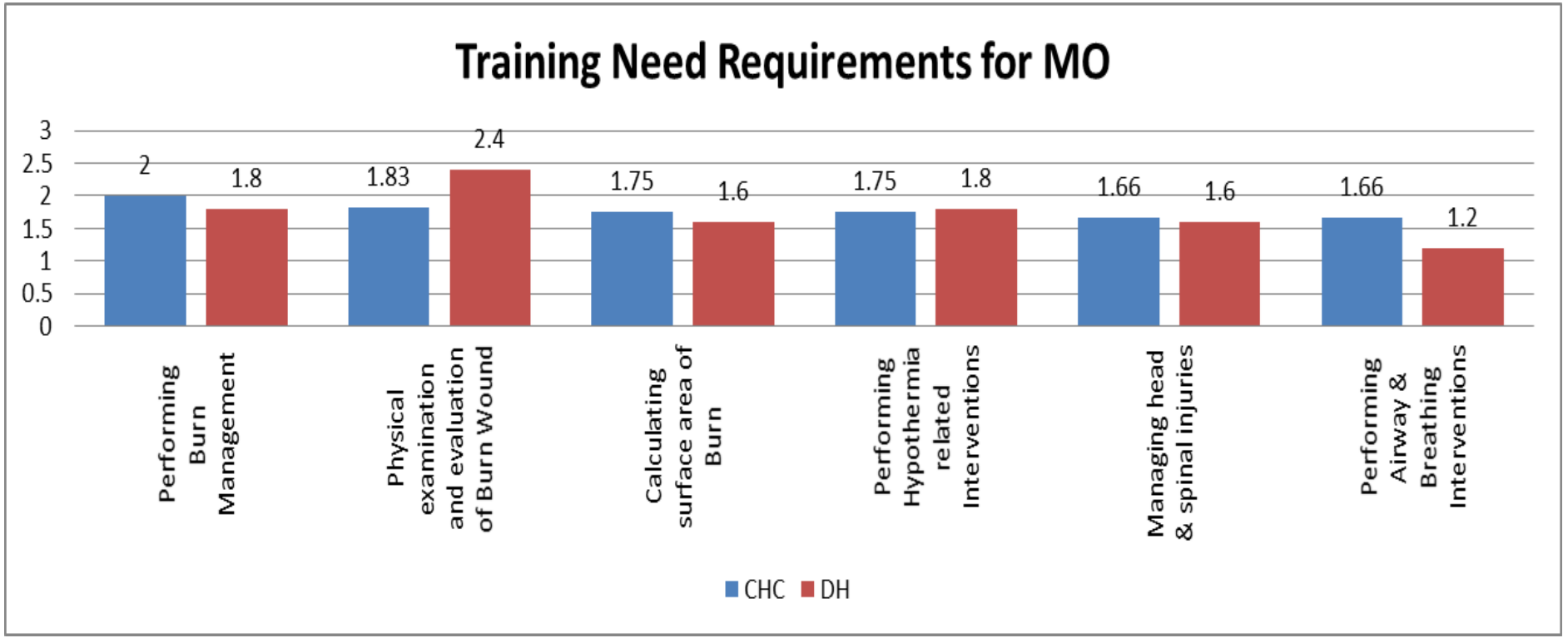
Note : Procedures for Burn Management & Treatment of Fracture were areas of concern at CHC level whereas Chest Tube Insertion was area of requirement at both DH & CHC level.

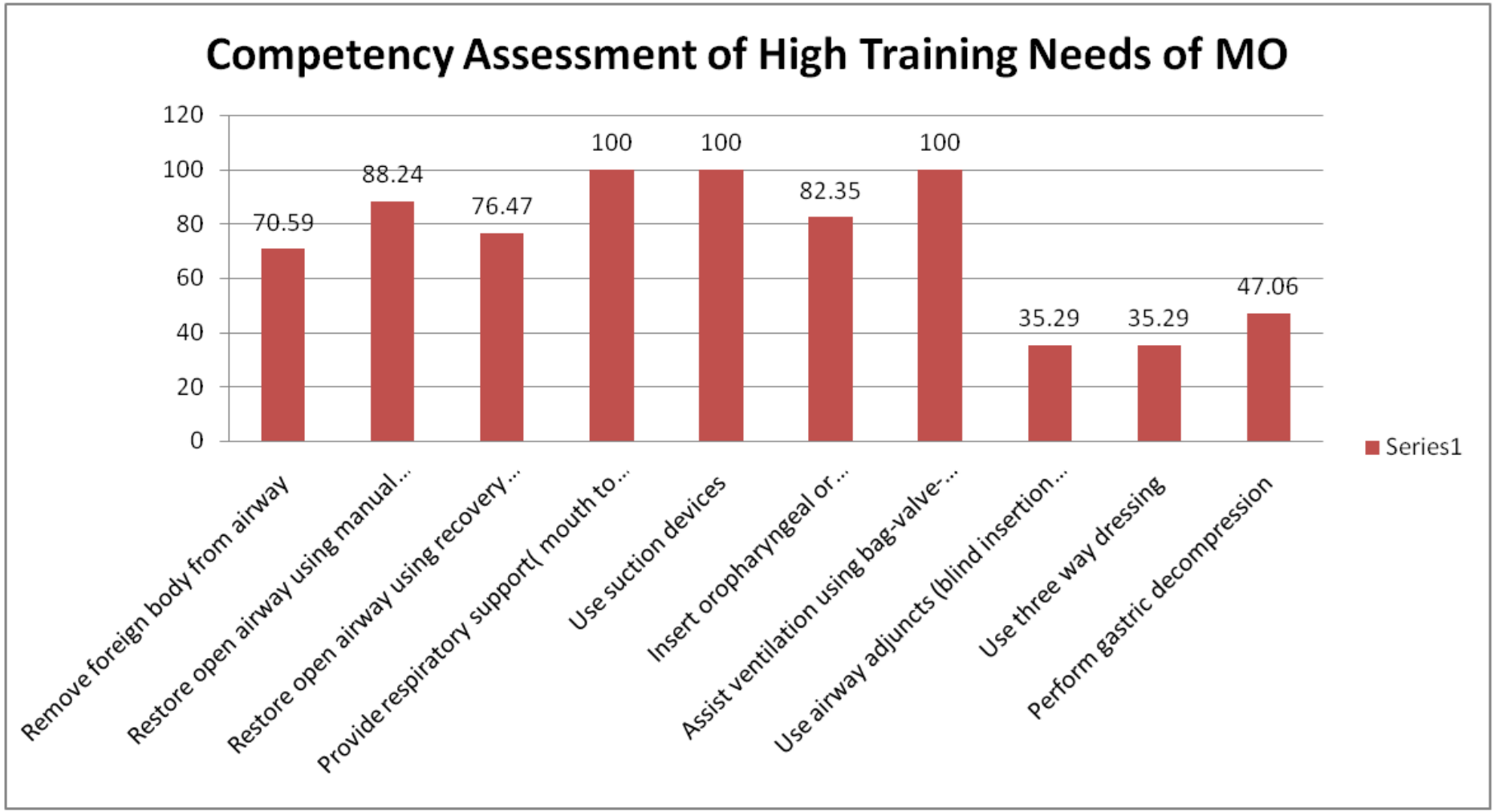
Specific Skills – Training Needs analysis

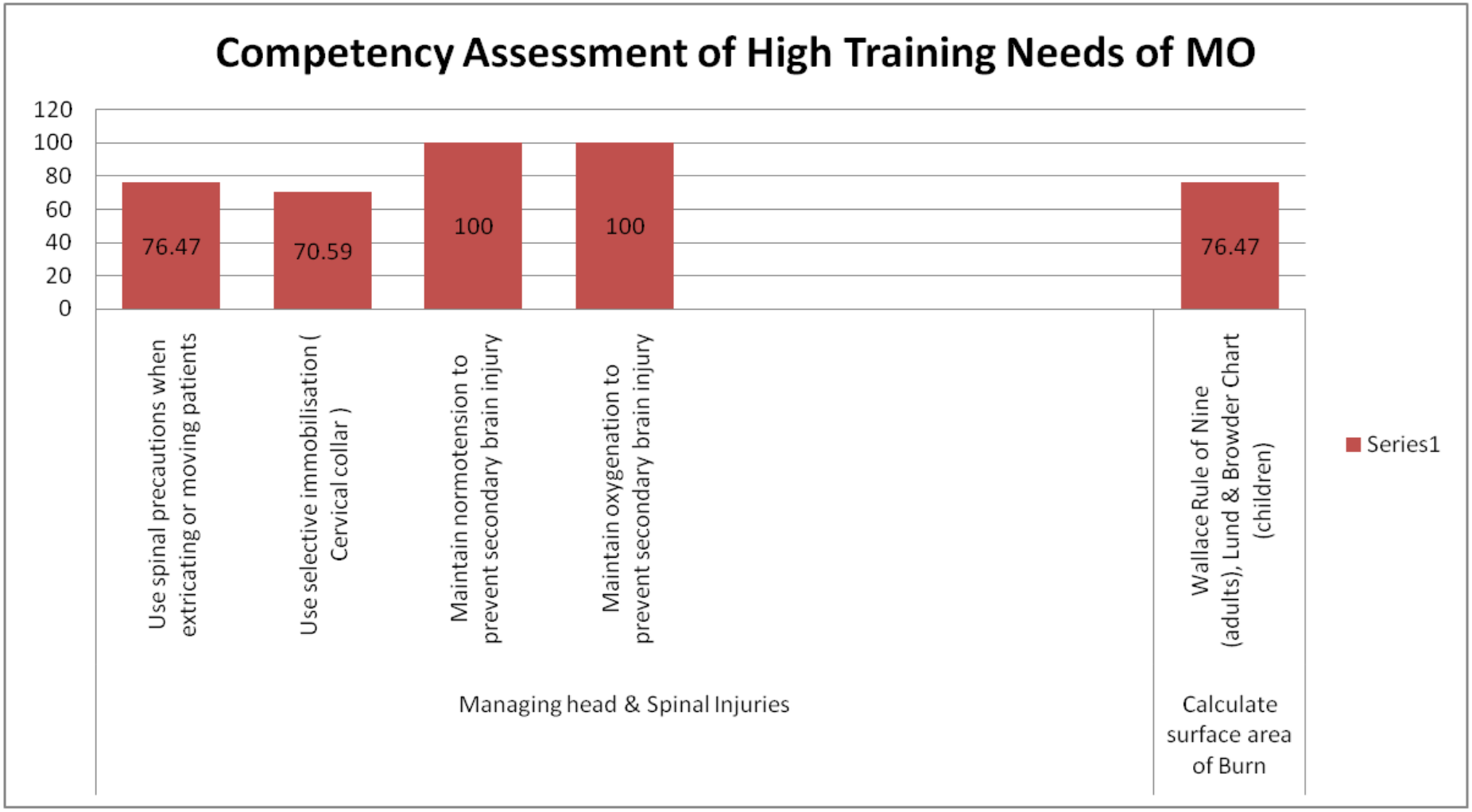
SPECIFIC SKILLS			
Process	**A (Importance of the task)**	**B (Confidence in Performing the Task)**	**A-B(Training need)**
Scene Management (SM)			
Assess scene safety			
Establish need for additional help			
Assess cause of injury			
Provider safety (PS)			
Receive training in universal precautions			
Limit exposure to HIV , Hepatitis B & C using available supplies			
Performing Initial Assessment of Patient			
Evaluate adequacy of airway			
Evaluate adequacy of breathing			
Evaluate extent of external bleeding			
Recognize level of consciousness (AVPU, GCS Scale)			

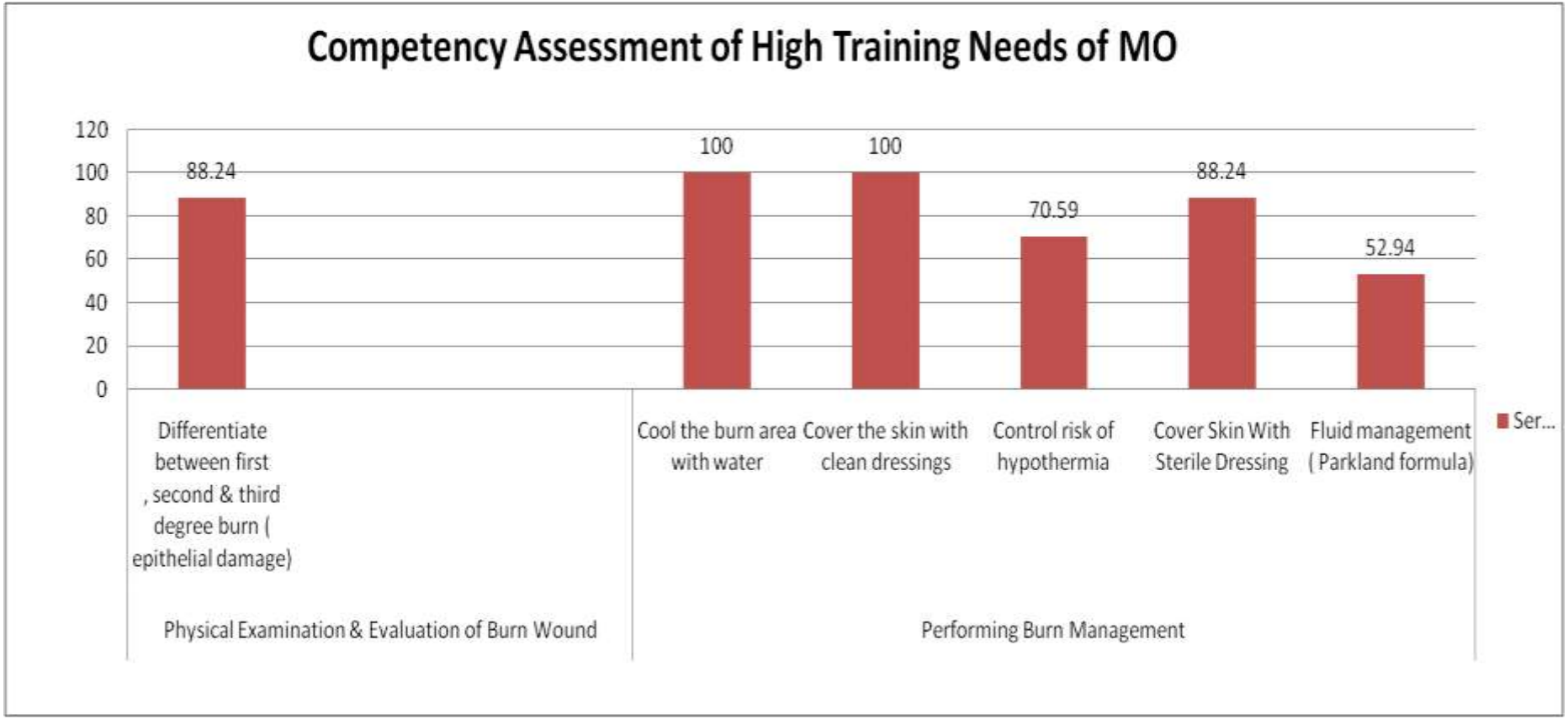
NOTE
Rating A provides an index of how important the task is to the respondent's job
Rating B provides an index of how well it is currently being performed
•Where a task gets a high rating on A but a low rating on B, the training need is high and should be the top priority for training (important task, not well performed).
• Where the task is rated low on A and low on B, then the task could be considered for training, but as a lower priority (unimportant task, not well performed)

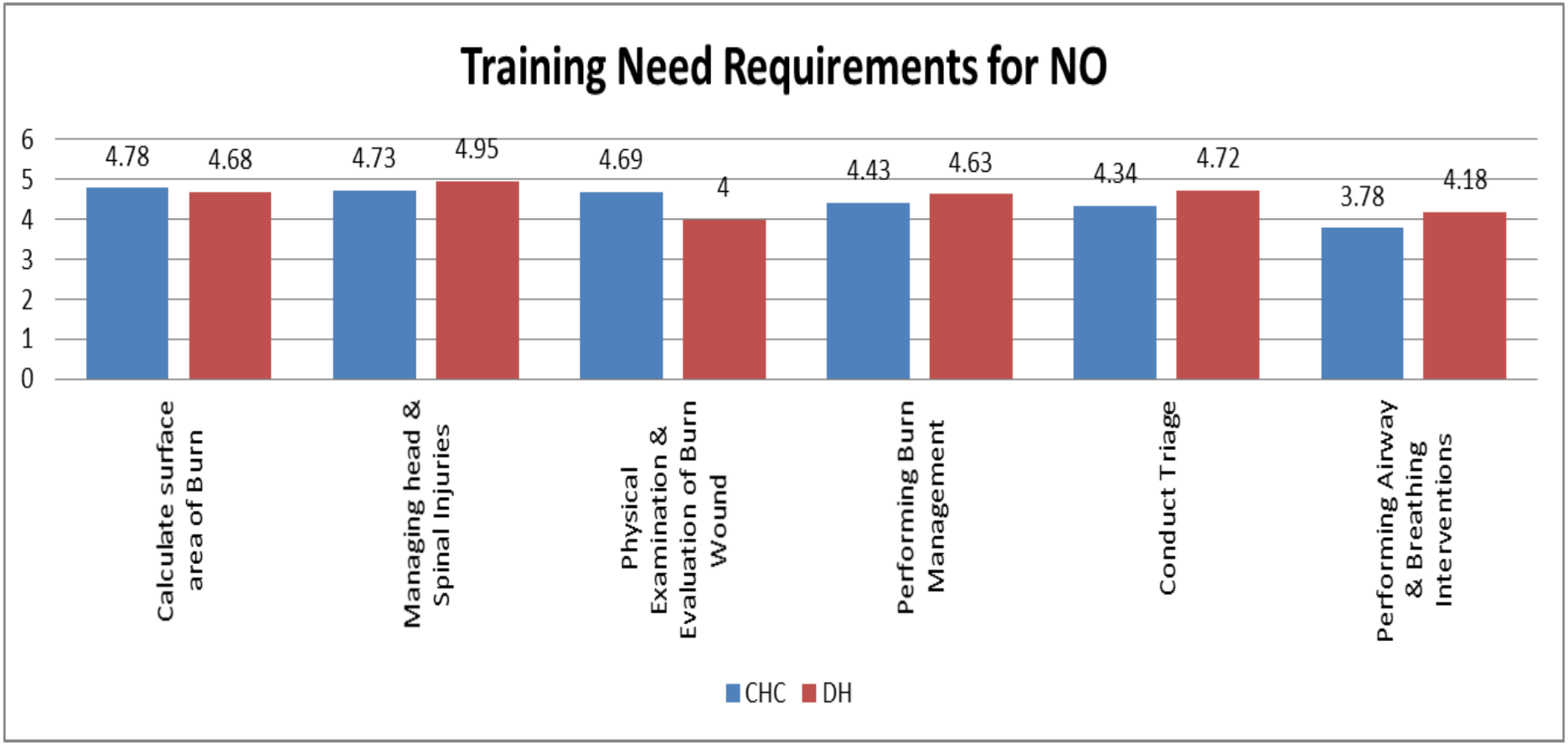
Training Need Requirements for MO		
	CHC	**DH**
Performing Burn Management	2	1.8
Physical examination and evaluation of Burn Wound	1.83	2.4
Calculating surface area of Burn	1.75	1.6
Performing Hypothermia related Interventions	1.75	1.8
Managing head & spinal injuries	1.66	1.6
Performing Airway & Breathing Interventions	1.66	1.2


Training Need Requirements for MO
3
2.5
2
1.5
1
0.5
0
2
1.8
1.83
2.4
1.75
1.6
1.75
1.8
1.66
1.6
1.66
1.2
Performing Burn Management
Physical examination and evaluation of Burn Wound
Calculating surface area of Burn
Performing Hypothermia related Interventions
Managing head & spinal injuries
Performing Airway & Breathing Interventions
CHC
DH


Competency Assessment of High Training Needs of MO
120
100
80
60
40
20
0
70.59
88.24
76.47
100
100
82.35
100
35.29
35.29
47.06
Remove foreign body from airway
Restore open airway using manual...
Restore open airway using recovery...
Provide respiratory support(mouth to...
Use suction devices
Insert oropharyngeal or...
Assist ventilation using bag-valve-...
Use airway adjuncts (blind insertion...
Use three way dressing
Perform gastric decompression
Series1


Competency Assessment of High Training Needs of MO
120
100
80
60
40
20
0
76.47
70.59
100
100
76.47
Use spinal precautions when extricating or moving patients
Use selective immobilisation (Cervical collar)
Maintain normotension to prevent secondary brain injury
Maintain oxygenation to prevent secondary brain injury
Wallace Rule of Nine (adults), Lund & Browder Chart (children)
Managing head & Spinal Injuries
Calculate surface area of Burn
Series1


Competency Assessment of High Training Needs of MO
120
100
80
60
40
20
0
88.24
100
100
70.59
88.24
52.94
Differentiate between first , second & third degree burn (epithelial damage)
Cool the burn area with water
Cover the skin with clean dressings
Control risk of hypothermia
Cover Skin With Sterile Dressing
Fluid management (Parkland formula)
Physical Examination & Evaluation of Burn Wound
Performing Burn Management
Ser...


Training Need Requirements for NO
6
5
4
3
2
1
0
4.78
4.68
4.73
4.95
4.69
4
4.43
4.63
4.34
4.72
3.78
4.18
Calculate surface area of Burn
Managing head & Spinal Injuries
Physical Examination & Evaluation of Burn Wound
Performing Burn Management
Conduct Triage
Performing Airway & Breathing Interventions
CHC
DH

Training Need Requirements for NO		
	CHC	DH
Calculate surface area of Burn	4.78	4.68
Managing head & Spinal Injuries	4.73	4.95
Physical Examination & Evaluation of Burn Wound	4.69	4
Performing Burn Management	4.43	4.63
Conduct Triage	4.34	4.72
Performing Airway & Breathing Interventions	3.78	4.18

Competency Assessment for High Training Needs of Nursing Officers

Competency	Parameter	Percentage
Calculating surface area of Burn	Wallace Rule of Nine (adults), Lund & Browder Chart (children)	15.06 %
Managing head & spinal injuries	Use spinal precautions when extricating or moving patients	8.89 %
	Use selective immobilisation (Cervical collar)	8.89 %
	Maintain normotension to prevent secondary brain injury	15.56 %
	Maintain oxygenation to prevent secondary brain injury	55.56 %
Physical examination and evaluation of Burn Wound	Differentiate between first , second & third degree burn (epithelial damage)	35.56 %

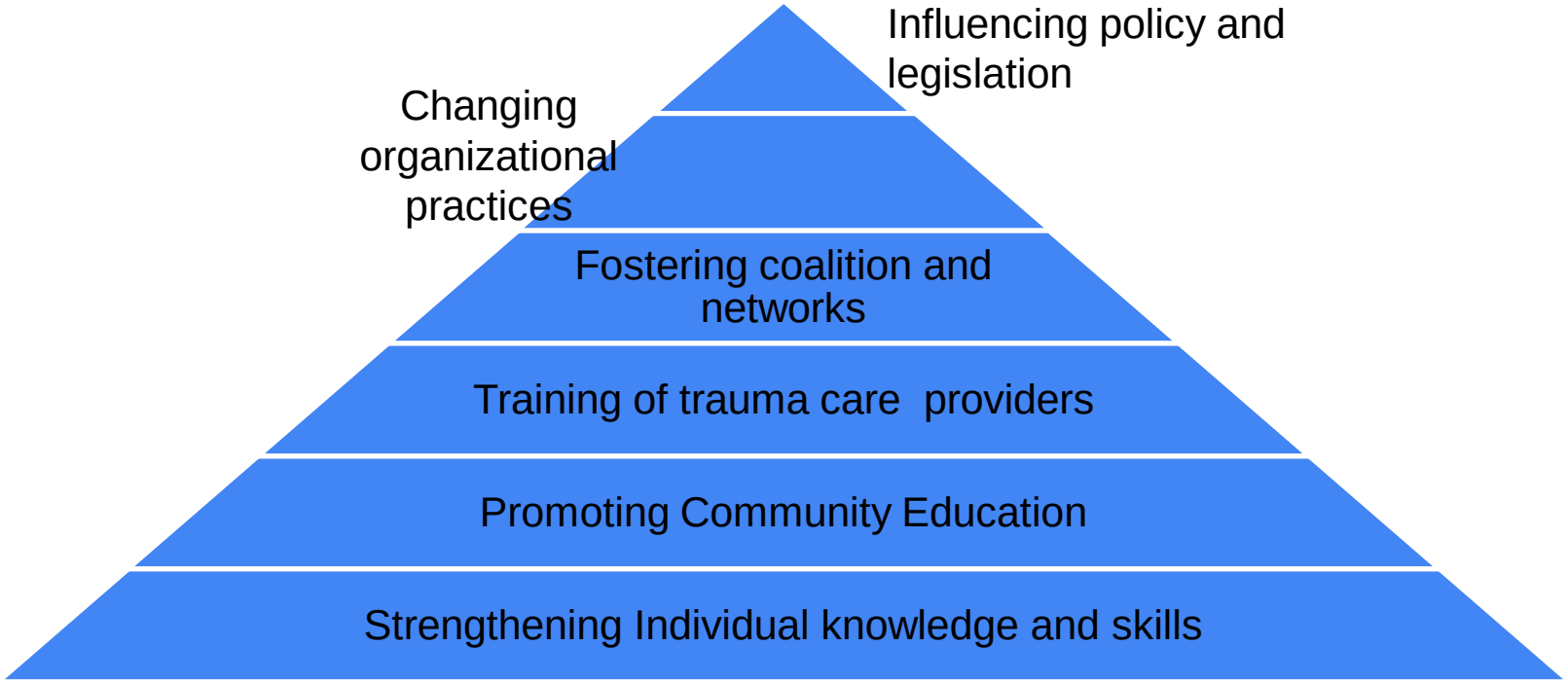
Trauma care continuum

- Poor trauma outcomes is a social issue
  - Longer travel distance
  - Poor cellphone service
  - Fewer first responders
    - Fewer physicians
  - Fewer equipped facilities

Right to Health bill , Rajasthan

- First state in the country
- The Act gives every resident of Rajasthan the right to emergency treatment care without prepayment of fees at designated health centers (accessible and equitable health care)
- -- a provision that was contentious.
- How accidental emergency care is defined ??

Understanding spectrum of prevention



Spectrum of Prevention

- Huxley outlined the importance of prevention in his novel Island during a conversation between two of the characters on his island,

*Pala: **"So you think our medicine's pretty primitive?"***

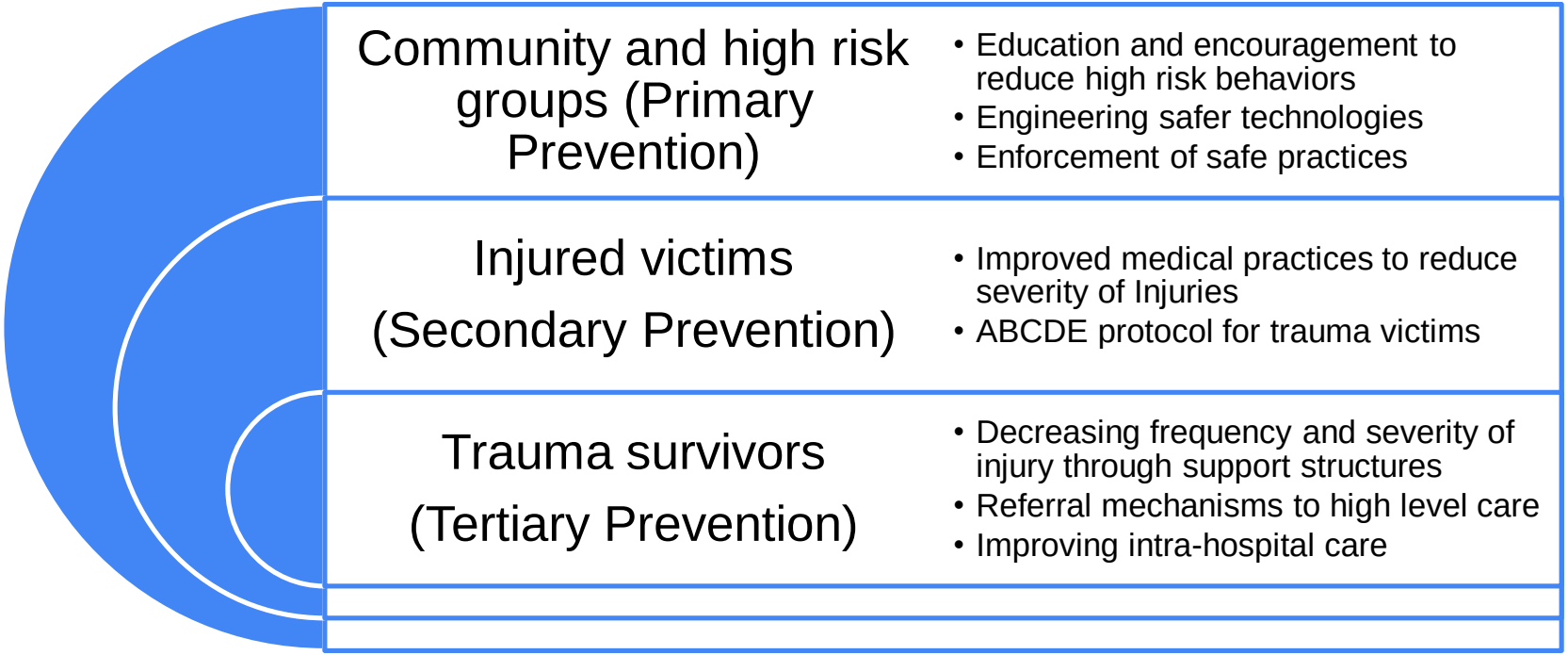
"That's the wrong word. It's 50 percent terrific and 50 percent non-existent . . Fantastic operations –

but

when it comes to teaching people the way of going through life without having to be chopped up, absolutely nothing. And it's the same all the way along the line. Alpha Plus for patching you up when you've started to fall apart but Delta Minus for keeping you healthy".

Thanks

Levels of Prevention in Injuries and Trauma



YouTube Link of Videos for Burn Management

SNO.	TOPIC	LINK
BURN		
1	Hypothermia Prevention	https://youtu.be/4Jw6C91PdsE
2	Burn care Wound Dressing	https://youtu.be/vBJWt1iKm4Y
3	Burn Care Peripheral Venous cutdown	https://youtu.be/QIJAejo17zs
4	Burn care Administering oxygen through Mask	https://youtu.be/k2QF0_HkXFM

YouTube Link of Videos for Trauma Management

TRAUMA		
1	Shock Management	https://youtu.be/DBHlVF5jjRM
2	Splinting	https://youtu.be/yF78cOMkTck
3	Vital Assessment for Trauma Patients	https://youtu.be/3pxjY8eRybc
4	Pelvic Binder Placement	https://youtu.be/CX-YzL4ItNI
5	Logrolling	https://youtu.be/jb5Z5vpG7uo
6	Helmet Extrication & Cervical Collar Placement	https://youtu.be/RdwlYIynbo0
7	Glasgow Coma Scale	https://youtu.be/biYG1L5JVeM
8	Cricothyroidotomy	https://youtu.be/l4I8oNs4ZJo
9	Ambu bag placement	https://youtu.be/zAzqtAarhF8
10	Airway assessment	https://youtu.be/laZW-w7JiIU

https://apps.who.int/gb/ebwha/pdf_files/WHA72/A72_31-en.pdf

https://www.who.int/docs/default-source/emergencies-trauma-care/who-tools-for-strengthening-emergency-care-systems---feb-2020.pdf?sfvrsn=56f2ccf3_2

https://www2.worldhealthsummit.org/fileadmin/user_upload/4_Documents/4.13_2021/Essential_Surgery_and_Trauma_Care_-_World_Health_Summit_2020_Proceedings.pdf

https://gh.bmj.com/content/5/6/e002187

- Competency based Undergraduate curriculum for the Indian Medical Graduate 2018 – mention Principles of Pre-hospital care and Casualty management of a trauma victim management as competencies (Orthopaedics; PMR and General Surgery)

Accident Site among hospitalized trauma, patient in AIIMS Jodhpur

Location of accident		
Urban	54	61%
Rural	26	30%
Semi Urban	8	9%