THE FUTURE OF TRANSPORT

Crash Data systems: Successful Implementation to Safe Systems application in India

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27/09/22

Background

- Crash Data is essential for good road safety strategy development
- Broadly available in High Income Countries
- Patchy in Low and Middle Income countries
- LMICs are where the most pressing road safety problems are globally

LMICs, HICs, road safety and crash data

- The road systems in LMICs differ significantly from HICs
  - HIC approaches will not work the same in LMICS
- We need to fully understand the safety challenges in LMICs –
  - This needs good Crash Data from these countries
  - Crash data has a vital role to play in implementing Safe System solutions

- Example of real success in India

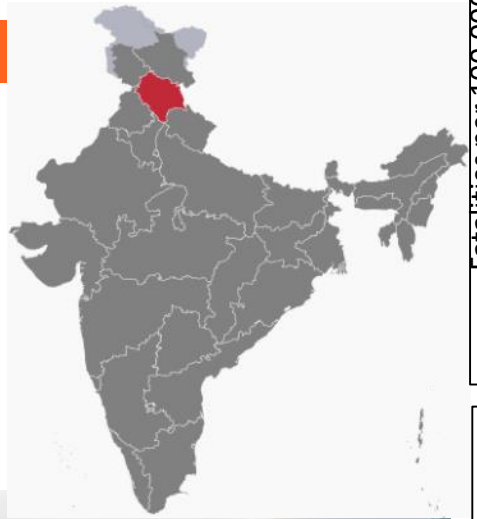
State of Himachal Pradesh (HP) – India

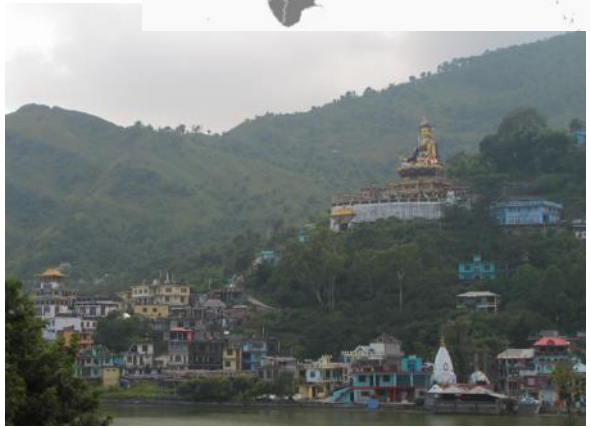
Features of the State

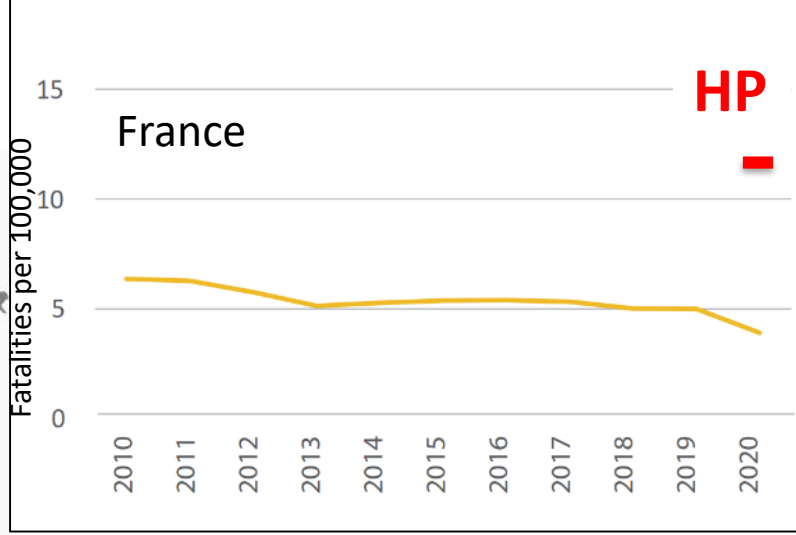
- Rural / hilly
- 7M people
- 31,000 km road
- 300+ Police stations

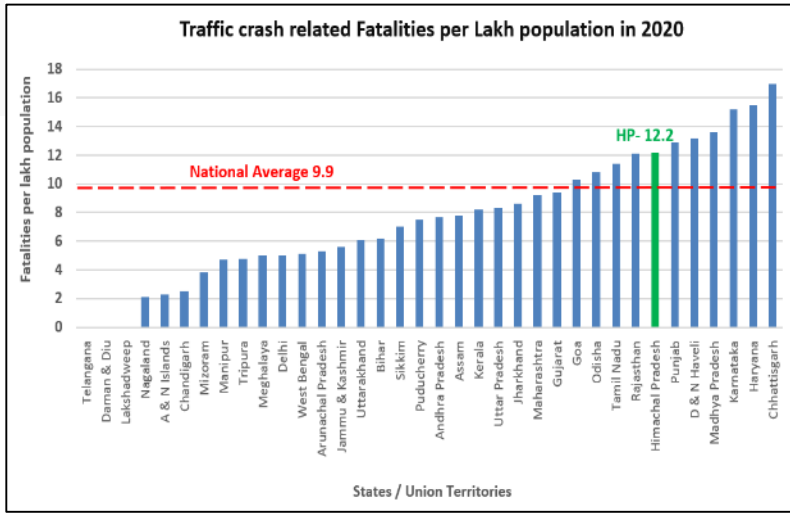
- 1,400+ Road fatalities per year
  - 2,541 - France

- Road death rate 12.2 per 100,000 population (2020)









TRL in Himachal Pradesh since 2015 towards institutional changes

Himachal Pradesh State Roads Transformation Programme (HPSRTP) funded by World Bank

Phase 1 – Implemented iMAAP in 2015

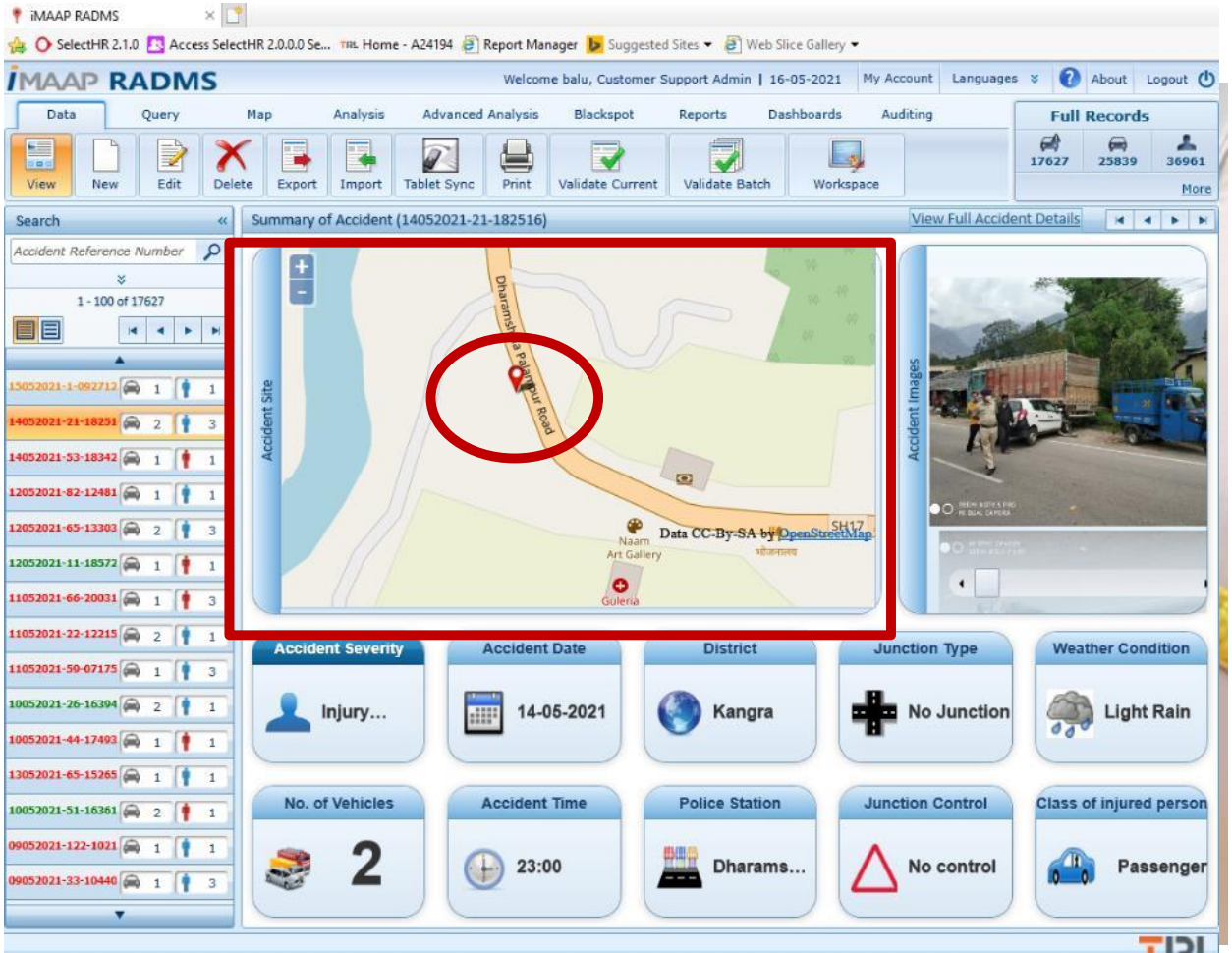
Data Collection (2016 – ongoing)

Evidence based interventions (2018 – ongoing)

Phase 2 -Crash data-led Safe System approach 2021-23

Crash data innovation

- Mobile devices used to collect crash data at scenes
- Scene photographs
- Available with crash details
- Accurate locations



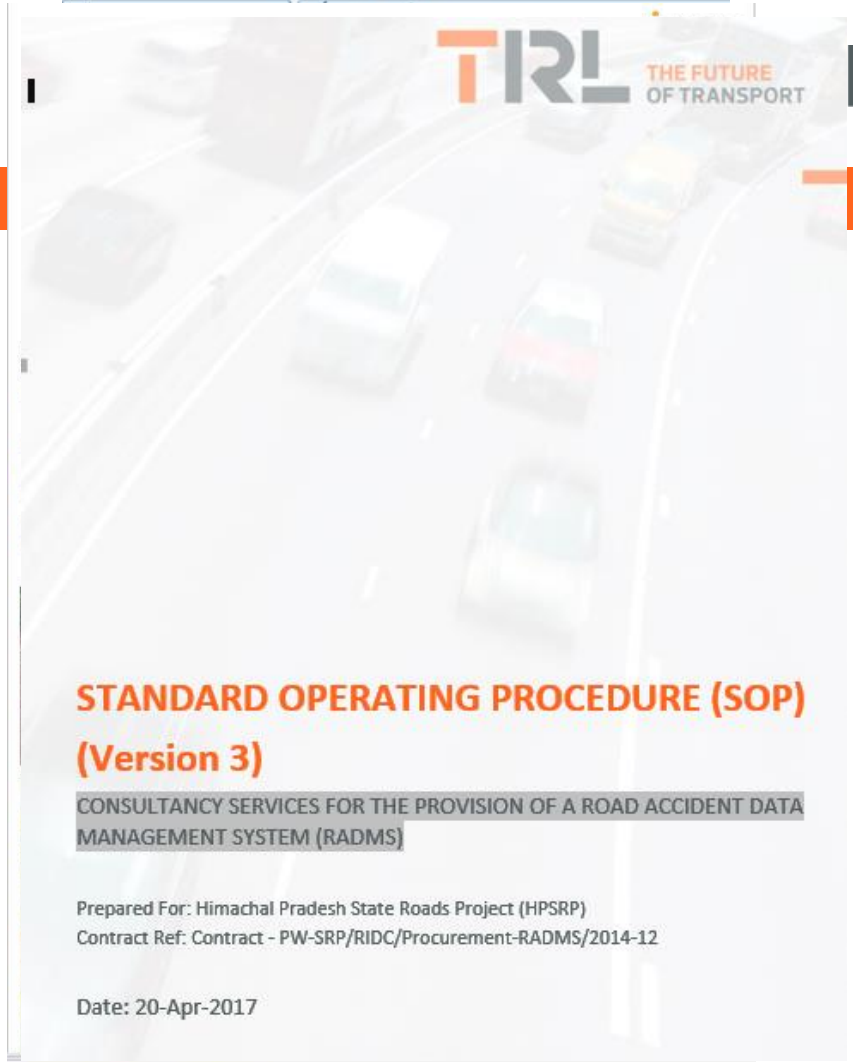
iMAAP implementation: RADMS

Success factors:

- Systems/ road safety review
- Training 300+ police stations

- Accident Data Management Cell (ADMC) developed
- Agreed S.O.P. for police:
  - **S**tandard **O**peration **P**rocedures

- 2017 – support project to the crash data system
  - National blackspot advice developed



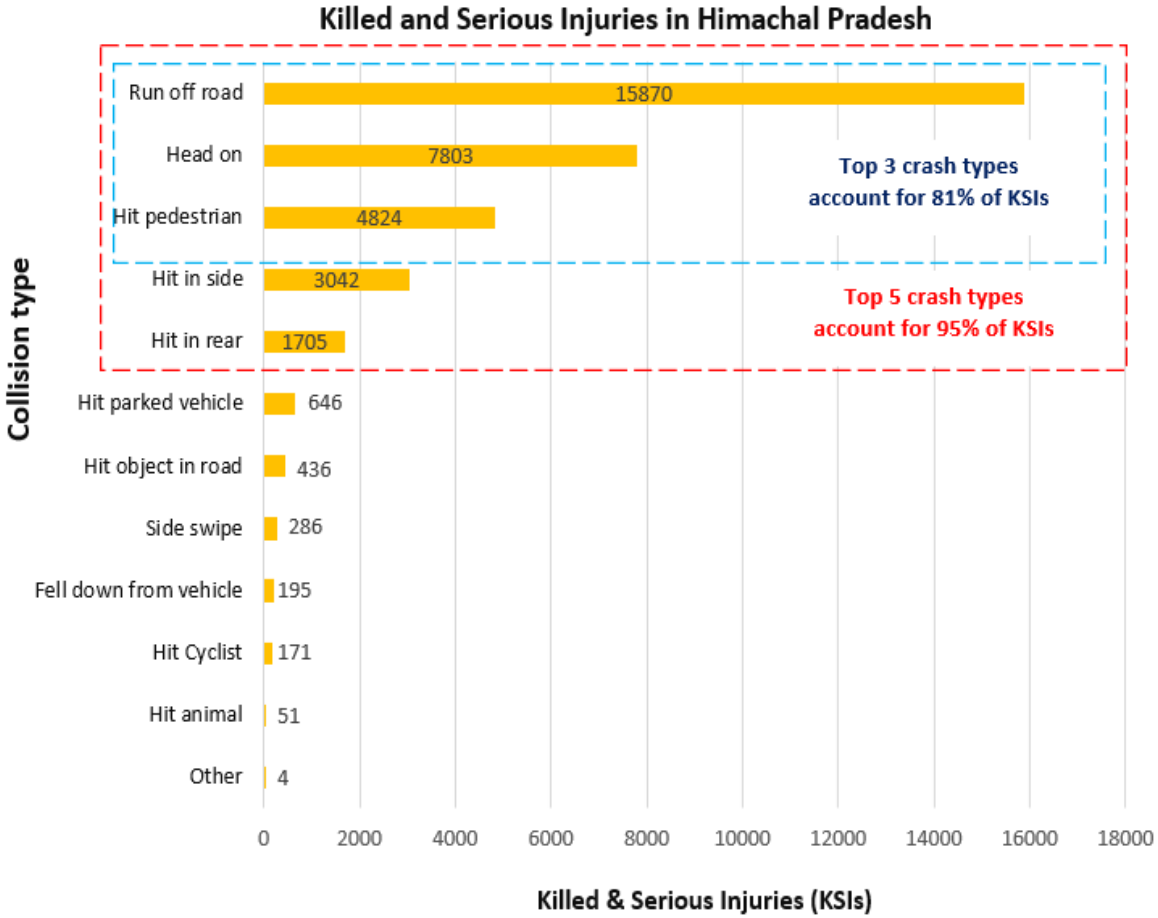
Phase 2: Data-led interventions/ Road Safety Action Plan

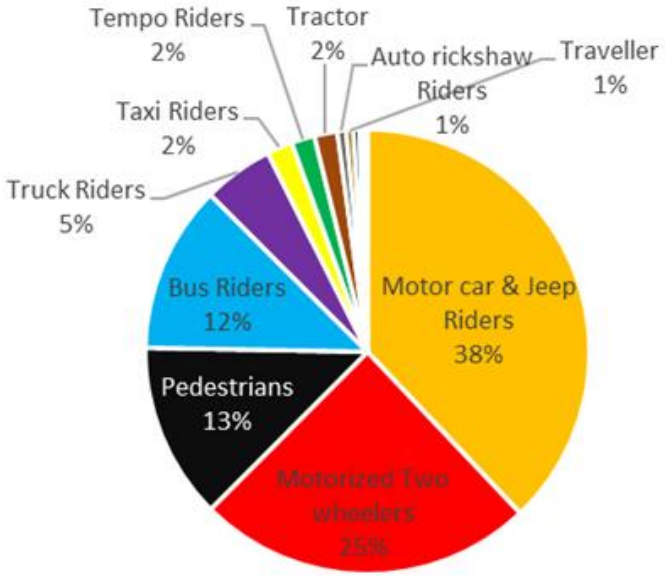
Consultancy Services for Road Safety Advisory for the State of Himachal Pradesh

- Technical support/ capacity building
- Focus: Engineering and Police/ Emergency Response
- development 4 demonstration corridors
- Focus on 3 Regions
  - **Trial/Testing/ Evaluation innovative approaches**
- Road Safety Action Plan for the State
  - Wide roll-out of successful measures 2023+

Safe Systems based approaches – supported by good crash data

Digging in to identify real risks and safety issues

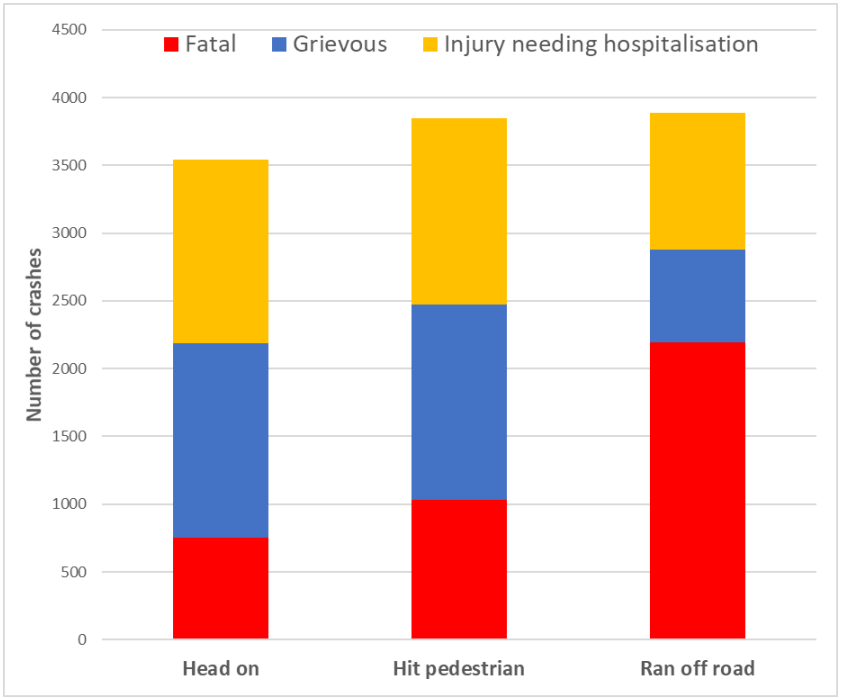




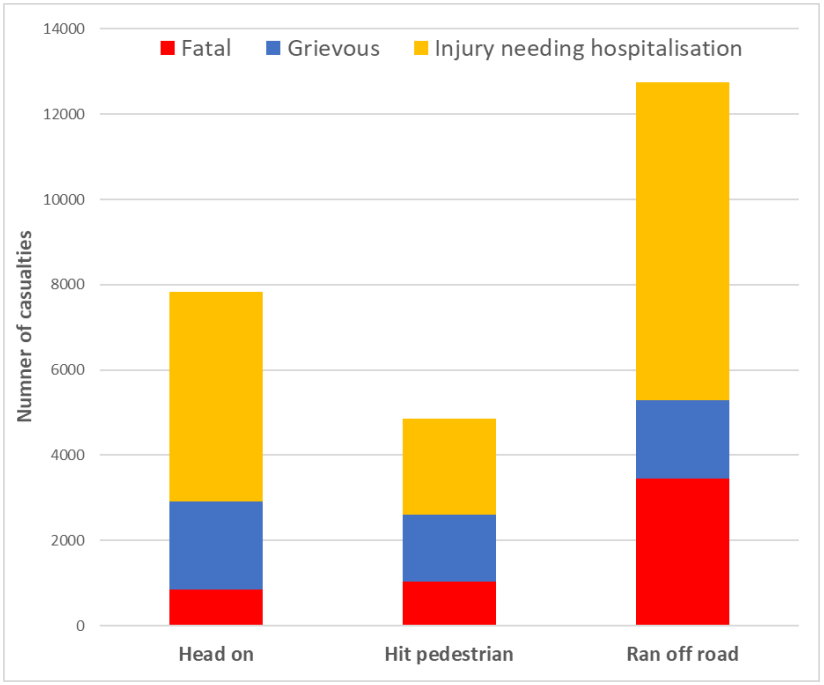
KSIs by type of road user

Patterns – KSIs - top 3 crash types:

Crash numbers:



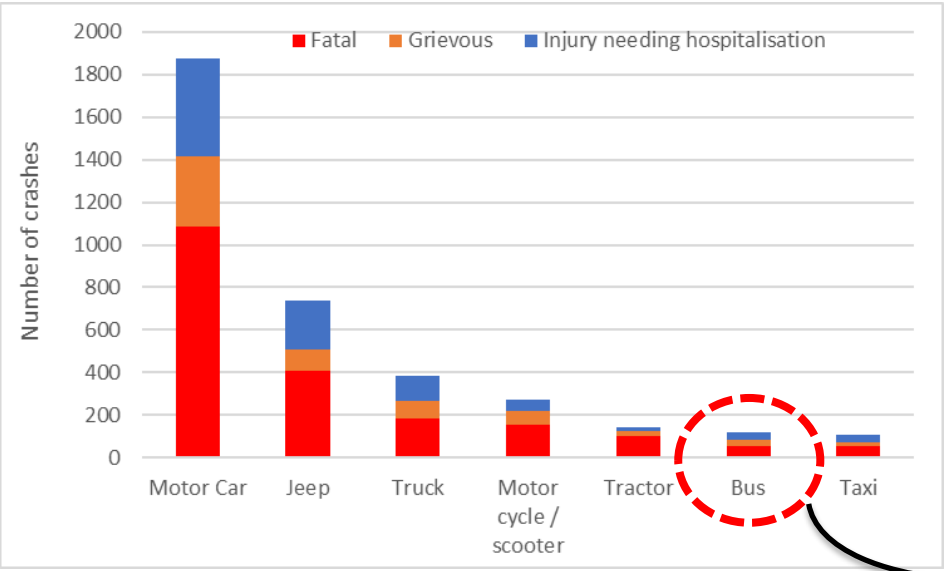
Casualty numbers:



HICs – expect greater casualties per crash for Head on

Patterns – top 3 crash types – Head on, Ped and RoR

Crash numbers:

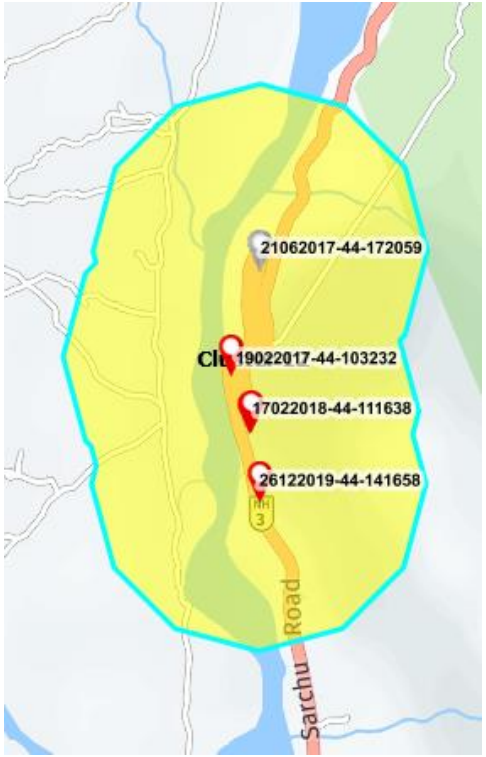


Casualty numbers:

Identifies buses/ drivers a target for interventions – across pillars

Reactive use of crash data: Hotspots/ Blackspots

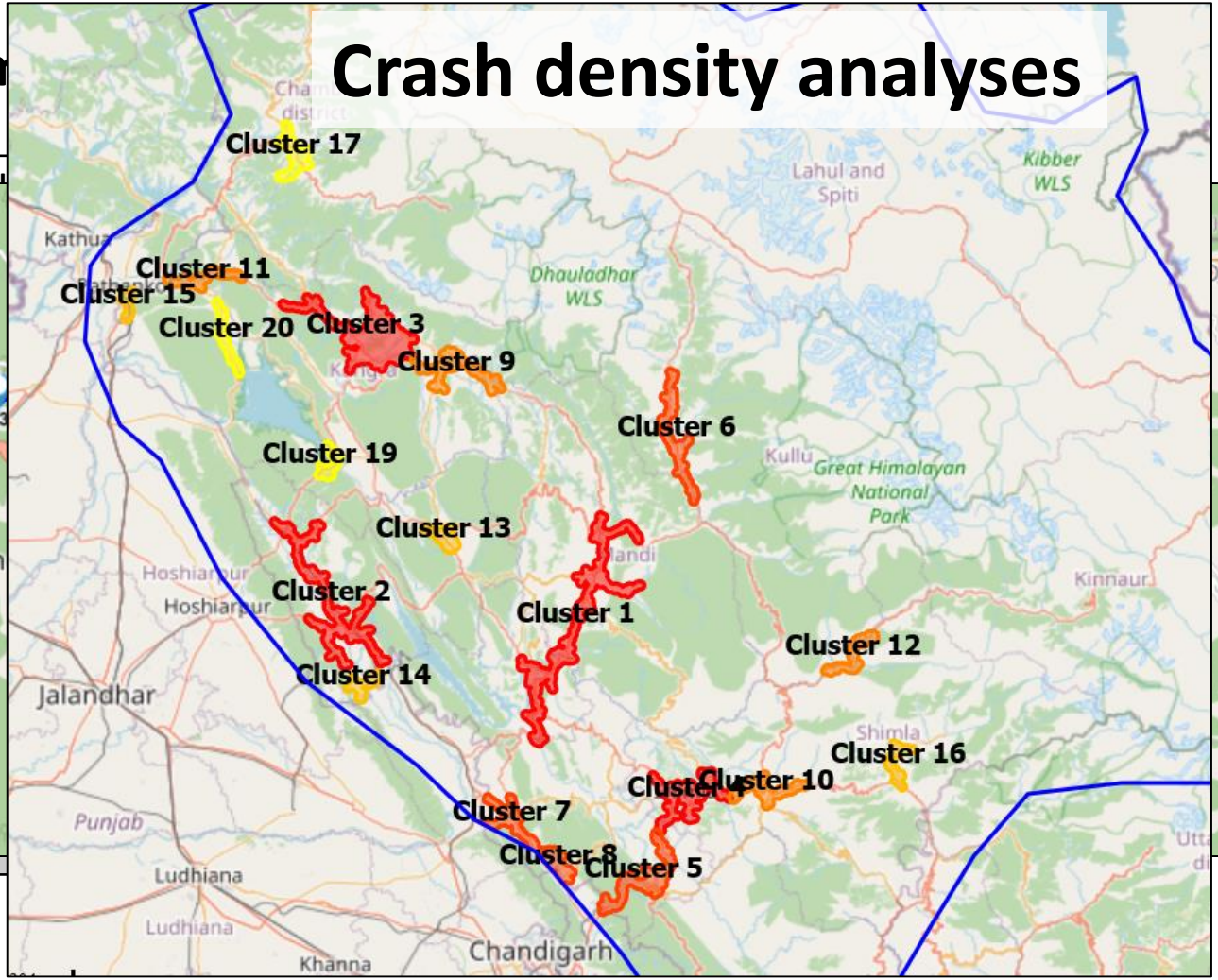
- Investigating crash prone sections
- Cluster/ route analysis
  - Barrier improvements?
  - Lighting at some locations?
  - Delineation?
  - Speed management?

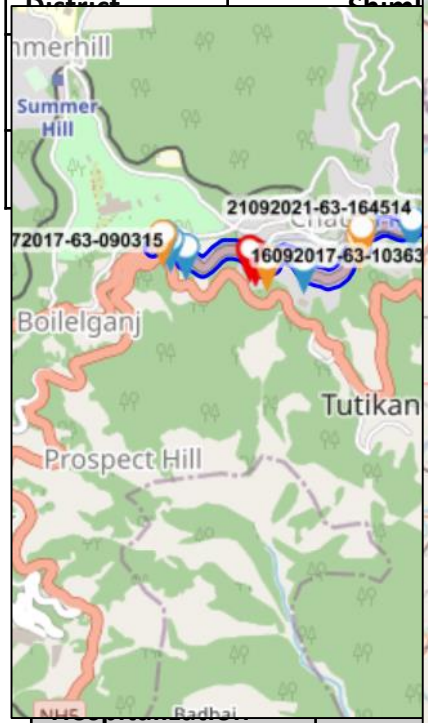


Accident Reference Number	19022017-44-103232	21062017-44-172059	14012018-44-175233	17022018-44-111638	26122019-44-141658
Accident Time	20:00	22:00	18:30	19:00	19:45
No. of Injuries	3	0	12	3	5
Light Condition	Darkness-no street lights	Darkness-no street lights	Darkness-no street lights	Darkness-no street lights	Darkness-no street lights
Weather Condition					
Vehicle Type 1	Motor Car	Truck	Motor Car	Motor Car	Motor Car
Accident Factor	Dangerous driving	Turning without care	Turning without care	Blind bend	Speed
Horizontal Features	Slight road curve	Sharp curve	Sharp curve	Sharp curve	Straight road

Route 1 – Shim

Crash density analyses

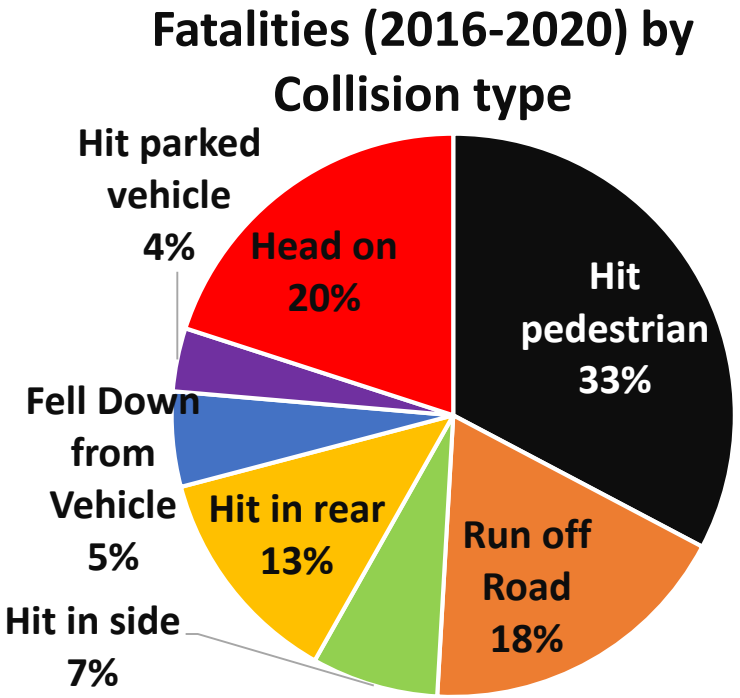




Route 1 - Fatalities by collision type

Shimla Cart road & MDR-16

Total Fatalities by Collision Type						
Collision Type	2016	2017	2018	2019	2020	Total
Hit pedestrian	5	2	3	3	5	18
Run off Road		2	2	5	1	10
Hit in-side	1	1			2	4
Hit in rear	1	1	1	3	1	7
Fell Down from Vehicle		1		2		3
Hit parked vehicle		1	1			2
Head on	3	2	1	5		11
Hit object in road						0
Total	**10**	**10**	**8**	**18**	**9**	**55**



Route Action Plan: iRAP & Crash patterns

- ✓ **Footpath, walkway & safe crossing points for pedestrians**
- ✓ Crash barriers
- ✓ Edge line & center lines (with chevron marking) to reduce head-on collisions
- ✓ Extra widening on curves
- ✓ Road studs on edge lines
- ✓ Speed limit signs & no overtaking signs
- ✓ Redesign of junctions

Crash data indicates pedestrian casualties occur even on rural sections

Summary: Crash data used intensively - Safe System approaches

12 minutes not enough – scratching surface – come and talk to me!

- LMIC Technical assistance projects don't generally have good crash data
- Supports far better targeting of limited resources:
  - Focus on Crash Types resulting in most KSIs
  - Identify target regions and corridors where efforts will have greatest impact
  - Shapes the Safe System trial approaches
  - Can be evaluated
- Underlines why crash data is so relevant to Safe System strategies
  - Safety Performance Indicators reducing focus on Crash Data????

Identifies real issues, permits evaluation and identifies different patterns from HICs

Police assigned factors