

'Targeting collisions resulting in killed or serious injury (KSI) victims'

Superintendent Steve Lyne
Dorset Police

@SuptSteveLyne

Why important?

- 1.25m deaths a year globally (WHO, 2015)
- $\frac{3}{4}$ deaths are male – 73% under 25 years (WHO, 2015)
- Mitchell and Allsop (2014) predict a decline by 2030, excluding cyclists
- 2238 people killed or seriously injured in Dorset 2010 – 2015

Year	Number of casualties killed	Number of casualties seriously injured	Total
2010	18	331	349
2011	19	310	329
2012	24	369	393
2013	28	334	362
2014	19	371	390
2015	28	387	415
2010-2015 combined	136	2096	2238

Research Questions

- What factors cause killed and seriously injured collisions in Dorset?
- Do killed and serious injury collision hotspots exist in Dorset?
- If hotspots exist, what factors affect each one and do they differ between hotspots?

What factors cause killed and seriously injured collisions in Dorset?

- Do the top 5 match the fatal 5 priorities?
- Fatal 5 – v – causes:

Fatal 5 list (not ranked)	Ranked Causes for KSIs
Excess Speed	1 - Fail to look (n=452)
Seatbelt	2 - Poor turn (n=161)
Distraction	3 - Loss of control (n=134)
Careless Driving	4 - Alcohol (n=64)
Drink / Drug Driving	5 - Slippery road (n=62)
	5 - Fail to judge others vehicles (n=62)

- Driving too fast for conditions was 6th and Careless driving was 7th

But who is involved?

Vulnerable Road Users – always the same?

Seriousness	1 (most frequent)	2	3	4	5 (less frequent)
Killed	OAP	Pedestrian	Powered Two Wheeler	Children	Pedal Cycle
Serious Injury	Powered Two Wheeler	OAP	Pedestrian	Pedal Cycle	Children
Combined	OAP	Powered Two Wheeler	Pedestrian	Pedal Cycle	Children

Do killed and serious injury collision hotspots exist in Dorset?

- Yes they do
- 5 years of data v 1 year of data
- Using AccsMap for a different perspective
- Its not all about being linear
- Hotspots have clusters in connecting roads
- 300m sized hotspots

Hotspots exist!

Cluster ID	Rank	Location	Node No.	Grid Reference		Severity Ratio	Accidents						Casualties										
				Easting	Northing		Fa	Se	Sl	Tot.	p.a.	KSI	Fa	Se	Sl	Tot.	p.a.	KSI	Peds	Cyces	Child	OAPs	P2W
1	1	A3049 WALLISDOWN ROAD		406341	94118	1.000	0	10	0	10	1.7	10	0	10	0	10	2	10	3	4	0	3	2
2	1	B3063 CHARMINSTER ROA		409084	92554	1.000	0	10	0	10	1.7	10	0	10	0	10	2	10	6	3	0	3	2
3	1	A347 WIMBORNE ROAD BO		408614	93493	1.000	0	10	0	10	1.7	10	0	10	4	14	2	10	4	1	0	5	5
4	4	A35 CHRISTCHURCHROA		411787	92053	1.000	0	9	0	9	1.5	9	0	9	0	9	2	9	4	2	1	2	2
5	5	B3066 EXETER ROAD 25M		408664	90861	1.000	0	8	0	8	1.3	8	0	8	1	9	2	8	8	1	0	0	1
6	5	UC NEWSTEAD ROAD 30M		367523	78712	1.000	1	7	0	8	1.3	8	1	7	0	8	1	8	6	1	1	4	0
7	5	UC TALBOT HILL ROAD,N		407849	93595	1.000	1	7	0	8	1.3	8	1	7	0	8	1	8	1	6	0	1	2
8	5	A35 MANOR ROAD AT JCN		415187	93029	1.000	0	8	0	8	1.3	8	0	8	1	9	2	8	1	4	0	2	0
9	9	A348.30 MTRS NORTH O		405364	95569	1.000	0	7	0	7	1.2	7	0	7	2	9	2	7	1	2	1	1	3
10	9	B3066 HOLDENHURST ROA		409579	91465	1.000	0	7	0	7	1.2	7	0	7	0	7	1	7	5	1	0	0	1
11	9	A3060 CASTLE LANE EAS		412257	94221	1.000	0	7	0	7	1.2	7	0	7	2	9	2	7	3	1	1	3	2
12	9	C350 BRIDGE STREET ON		415909	92704	1.000	0	7	0	7	1.2	7	0	8	0	8	1	8	5	0	0	6	1
13	9	A35 POOLE ROAD, AT PO		405516	91988	1.000	0	7	0	7	1.2	7	0	7	0	7	1	7	1	5	1	0	0
14	9	A35 ST PAULS RD RAB W		409749	91775	1.000	1	6	0	7	1.2	7	1	7	1	9	2	8	4	2	0	1	1
15	15	A347 NEW ROAD AT THE		408442	97993	1.000	0	6	0	6	1.0	6	0	6	2	8	1	6	1	1	1	2	2

If hotspots exist, what factors affect each one and do they differ between hotspots?

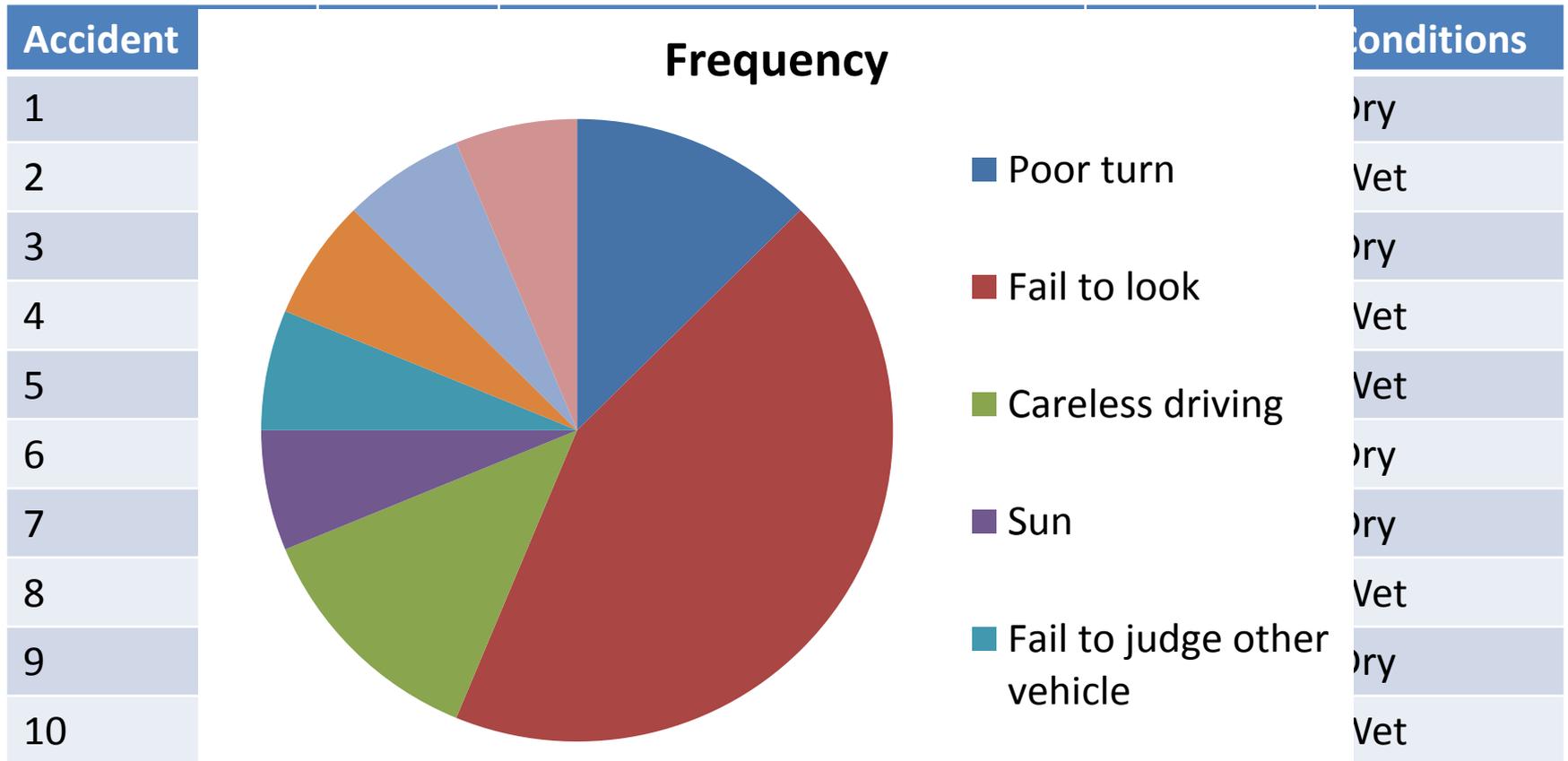
- Looked at top 5 hotspots to compare

Hotspot identification	Main time hotspot is active	Most frequent vulnerable road user involved	Most frequent weather when hotspot is active	Most frequent causation recorded in hotspot
1	0500 - 0859	Pedestrians	Fine without high winds	Driver / Rider failed to look properly
2	1500 - 1859	Pedestrians	Fine without high winds	Driver / Rider failed to look properly
3	1500 - 1859	Pedestrians	Fine without high winds	Poor turn or manoeuvre Fail to judge other persons speed Pedestrian failing to look properly
4	1500 - 1859	Pedestrians	Fine without high winds	Driver / Rider failed to look properly
5	1100 – 1459	Pedestrians	Fine without high winds	Driver / Rider failed to look properly

Hotspot 1 - highest levels of KSI in Dorset



Breaking down that hotspot



Who are involved?

Surely the vulnerable road users in a hotspot reflect what all the data says?

Hotspot	Pedestrians	Cyclists	Child	OAPs	P2W
1	10	3	4	0	3
2	10	4	1	0	5
3	10	6	3	0	3
4	10	4	1	0	5
5	9	4	2	1	2

Seriousness	1 (most frequent)	2	3	4	5 (less frequent)
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Policy implications

- **Theoretical Contribution**
- 1 – This research has demonstrated that hotspots exist and differ between locations. Academia should carry out further research and seize the opportunity to use radial hotspots instead of linear segment hotspots, in order to add to the evidence which has been briefly explored in this research. In particular, understanding the relationship between accidents and the centre of the hotspot will add value to future research in establishing an approach to the size of the radius.
- **Policy makers**
- 1 – The police service should review how effective the ‘Fatal Five’ is in responding to killed and serious injury collisions, and ensure the priorities reflect the top causes. Where priorities can be perceived to be a sweeping statement, such as careless or reckless driving, the exact type of driving should be documented to ensure it is targeted.
- 2 – Radial hotspots should be used to identify and drive police and partnership activity, rather than allowing a blanket approach to where resource is focused.
- 3 – Each hotspot should have the focus of police and partnership activity based on its own merits. A blanket approach to hotspots should not be used and policy makers should consider when a hotspot is most active to focus activity.
- 4 - Action Plans to tackle the hotspot should focus beyond driving, and consider those most likely to be involved in the collision. The approach should consider what enforcement can achieve along with environmental design and effective communication plans to inform those who are at greatest risk.