Meeting the Challenge of Collecting Injury Data, the Spanish Experience

7th PIN Conference

Brussels 17 June, 2013

MINISTERIO DEL INTERIOR

DGT Dirección General de Tráfico

Using several sources

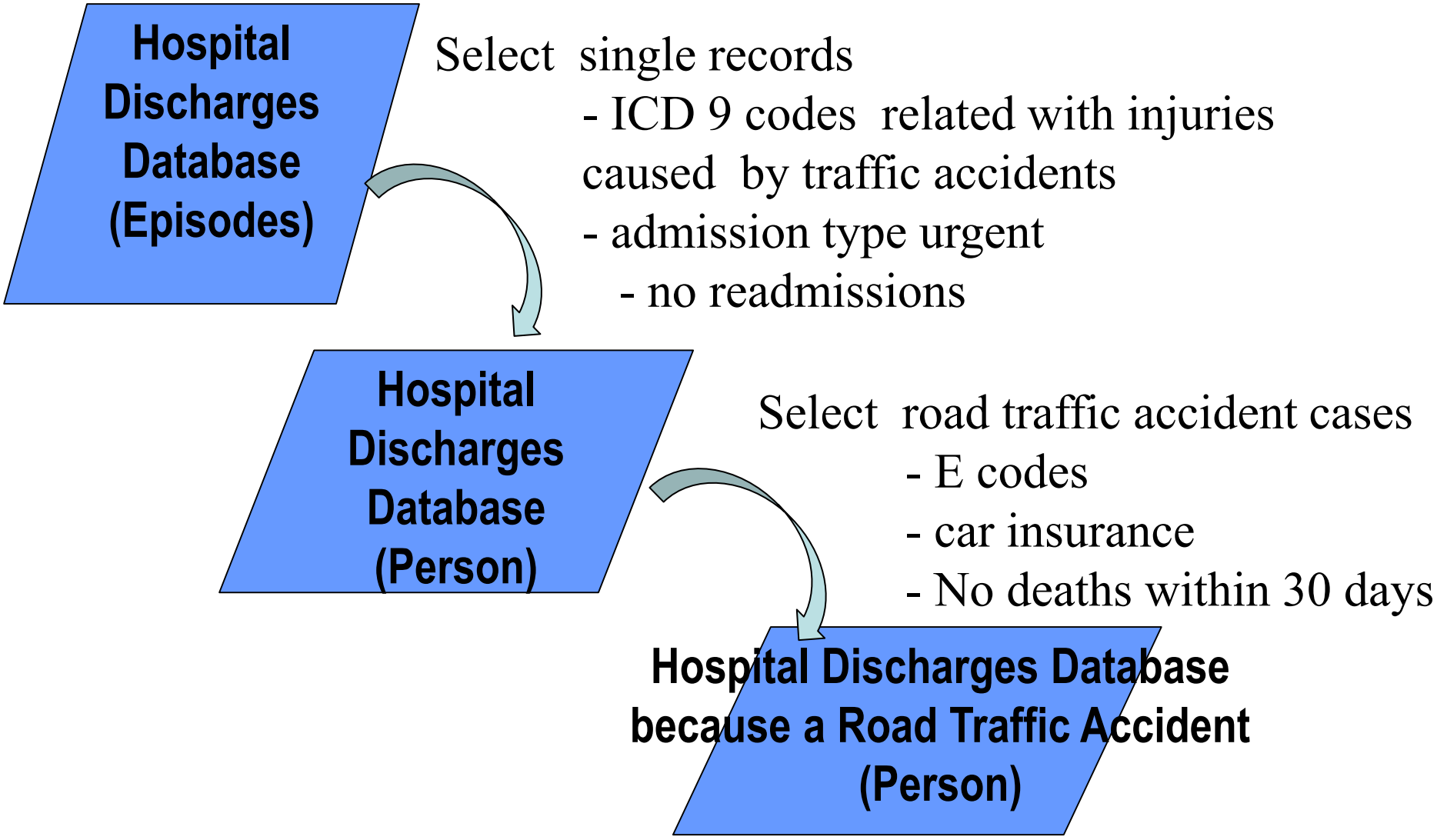
Seriously injured

Police Data	Hospital Data
- Any person injured who was hospitalized more than 24 hours	- Hospitalized as a consequence of a road traffic accident
-Detail information on circumstances of the accident, vehicles and people involved	-Detail information on exact location and type of lesions (International Classification of Diseases 9th revision)
-Date: when the accident happened	-Date: when the hospital discharge ocurred
National database	
Regulated by law	

Non fatal injuries:

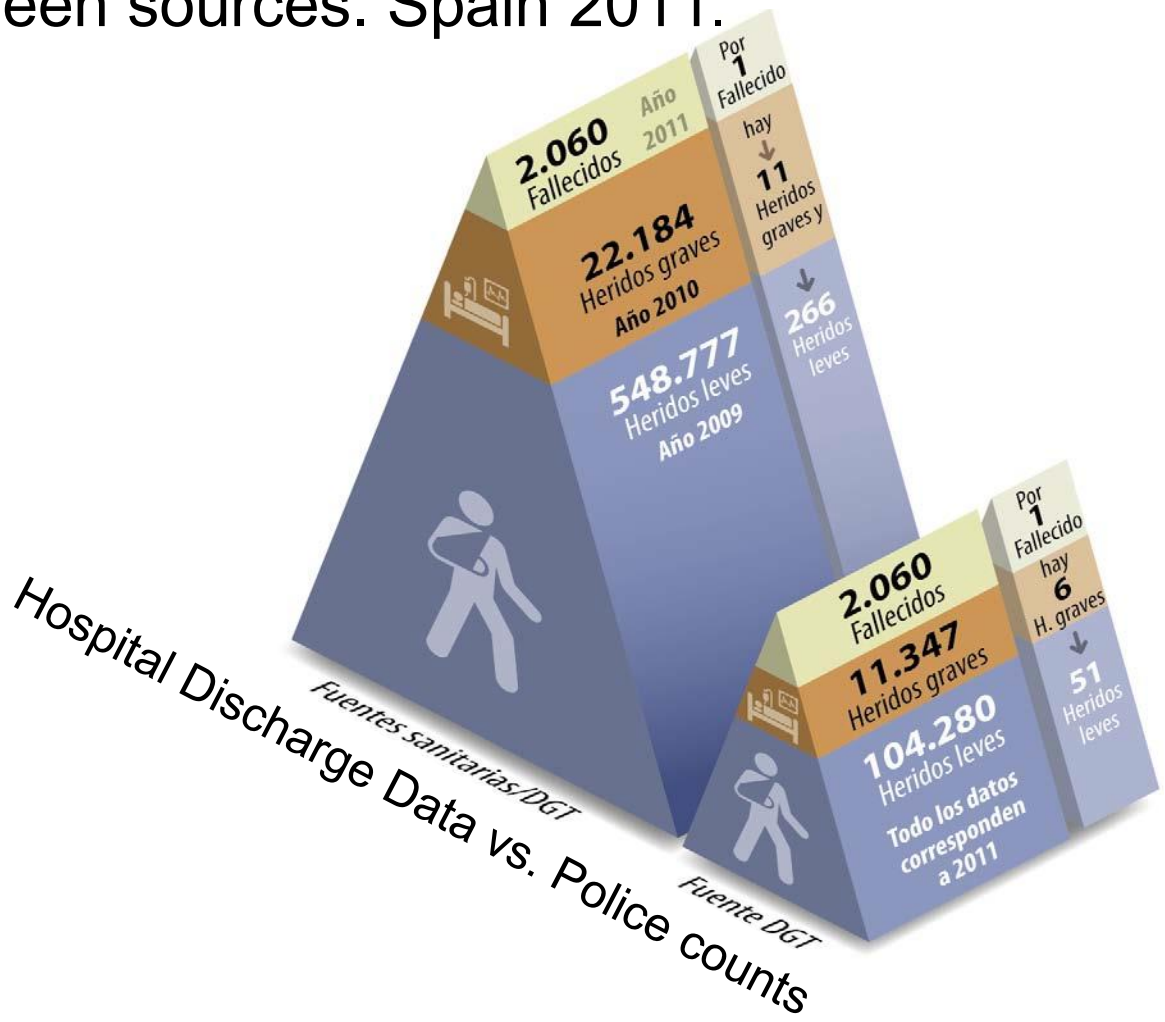
- European Health Survey
- Spanish Survey on Disability

Starting to work with Hospital Discharges Data



Using Hospital Discharges Data

Comparison between sources. Spain 2011.

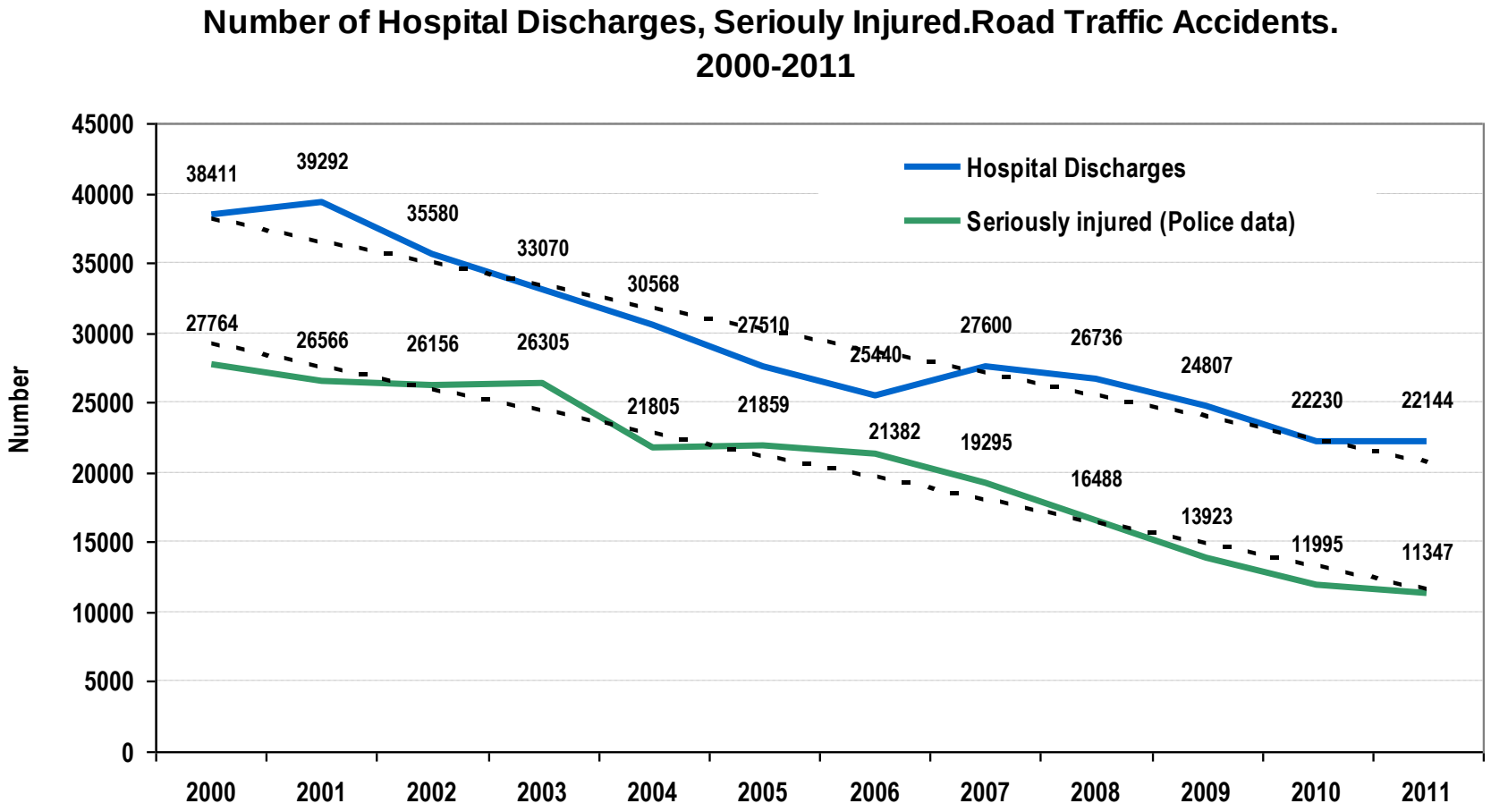


Hospital Discharge Data vs. Police counts

Source: Principales Cifras Siniestralidad 2011

Using Hospital Discharges Data

Comparison between sources. Spain 2000-2011.



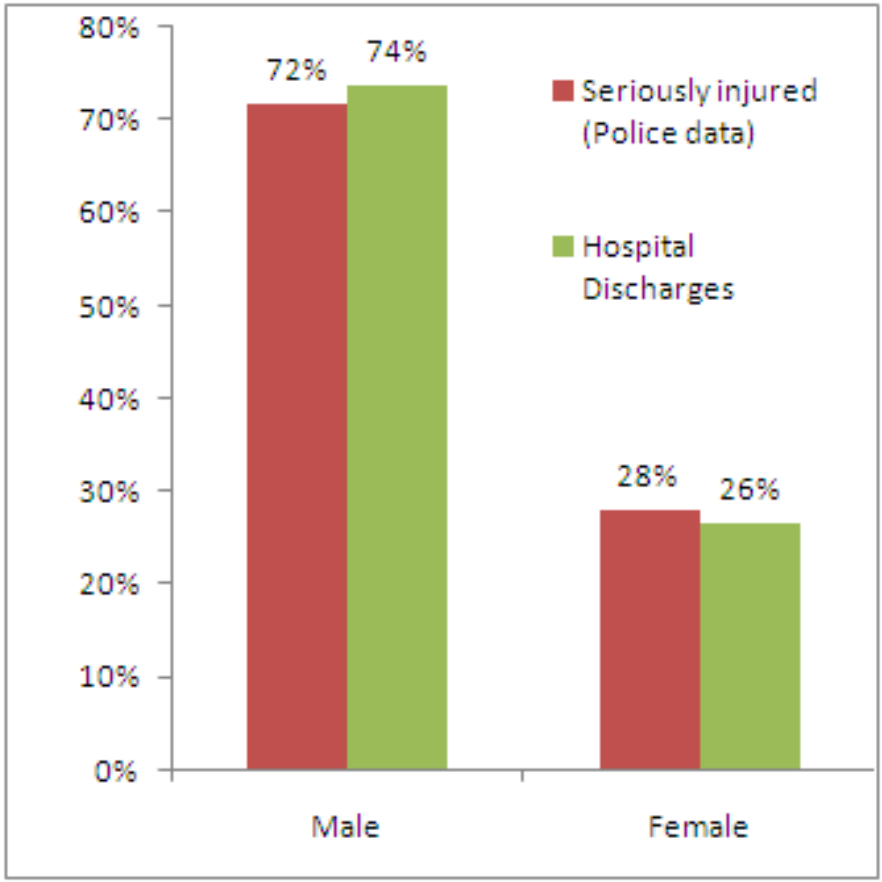
- Figures from Hospital Discharges are higher than figures from police data.
- Similar trends

Using Hospital Discharges Data

Comparison between sources. Gender. Spain 2011.

Year 2011

	Seriously injured (Police data)		Hospital Discharges	
	N	%	N	%
Male	8140	72%	16305	74%
Female	3164	28%	5836	26%
Unknown	43	0%	3	0%
Total	11347	100%	22144	100%

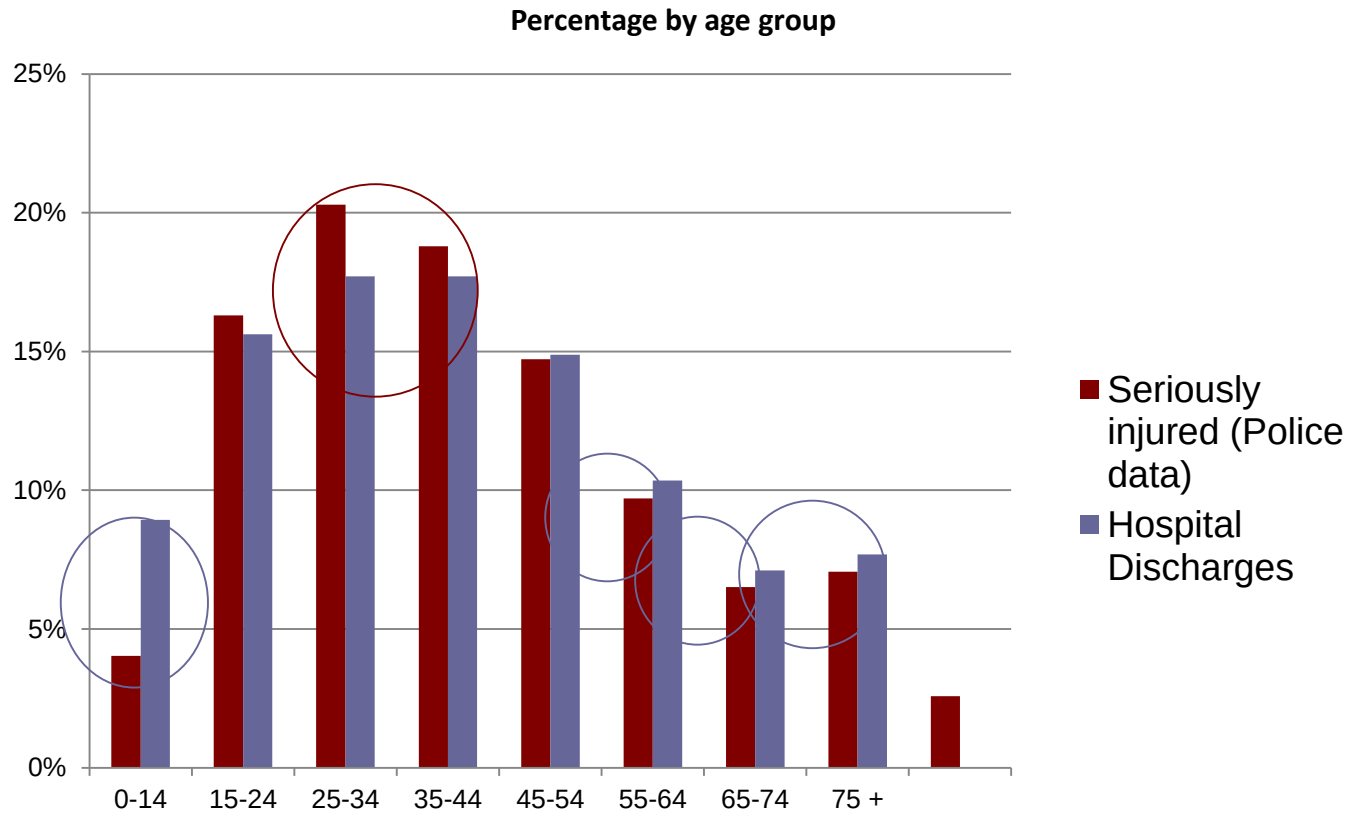


- Good coverage

Higher percentage of men in HDD

Using Hospital Discharges Data

Comparison between sources. Age groups. Spain 2011.



- Good coverage
- Higher percentages HDD in age groups 0-14, 55-64, 65-74 and 75+.
- Lower percentages HDD in age groups 25-34 and 35-44.

Using Hospital Discharges Data

Comparison between sources. Type of road user. Spain 2011.

	Seriously injured (Police data)			Hospital Discharges	
	N	%		N	%
Pedestrian	1916	17%	Pedestrian	2752	12%
Bycicles	589	5%	Bycicles	3323	15%
Mopeds	958	8%			
Motorcycles	2618	23%			
PTW	3576	32%	PTW	4640	21%
Passenger cars	4344	38%			
Goods vehicles	667	6%			
Buses	65	1%			
Others	190	2%			
			Driver no motorcycles	1360	6%
			Passenger no motorcycles	801	4%
			User no specified	6304	28%
Unknown (blank)	0	0%	Unknown (blank)	2964	13%
Total	11347	100%		22144	100%

?

- Different coverage.
- Use unreliable due to the high number of cases not specified.

Using Hospital Discharges Data

Describe injuries…

– Barell Matrix (e.g., amputations, traumatic brain injury, etc)

Tabla 78. Matriz de Barell, CIE-9-MC, distribución porcentual de las lesiones por accidente de tráfico. Año 2010 (22.699 altas y 42.467 lesiones)

			Fracturas	Dislocación	Esguince y torcedura	Interno	Herida	Amputaciones	Vasos sanguíneos	Contusión superficial	Aplastamiento	Quemaduras	Nervios	NE	Total
Cabeza y cuello	Lesión cerebral	1 Tipo I	2,56			5,05									7,61
		2 Tipo 2	,67			3,72									4,40
		3 Tipo 3	,30												,30
	Otros cabeza, cara y cuello	4 Cabeza	,00				1,01						,04	,27	1,32
		5 Cara	4,26	,01			1,83								6,10
		6 Ojo					,29			,28		,01	,01		,59
		7 Cuello	,01				,05					,00	,01		,08
		8 Cabeza, cara y cuello NE							,02	1,01		,02		,39	1,44
Médula espinal y espalda	Médula espinal	9 Cervical	,20			,10									,30
		10 Torácico/dorsal	,19			,02									,21
		11 Lumbar VCI	,13			,01									,14
		12 Sacro coccígeo	,02			,01									,03
		13 Médula/espalda NE	,01												,01
	Columna vertebral	14 Cervical	1,36	,19	1,16										2,70
		15 Torácico/dorsal	1,70	,01	,06										1,77
		16 Lumbar VCI	2,52	,01	,12										2,64
		17 Sacrococcígeo	,41	,03											,44
		18 Médula/espalda NE	,07												,07

3,6% Fracture

8,7% Internal injuries

12,3% Brain injury

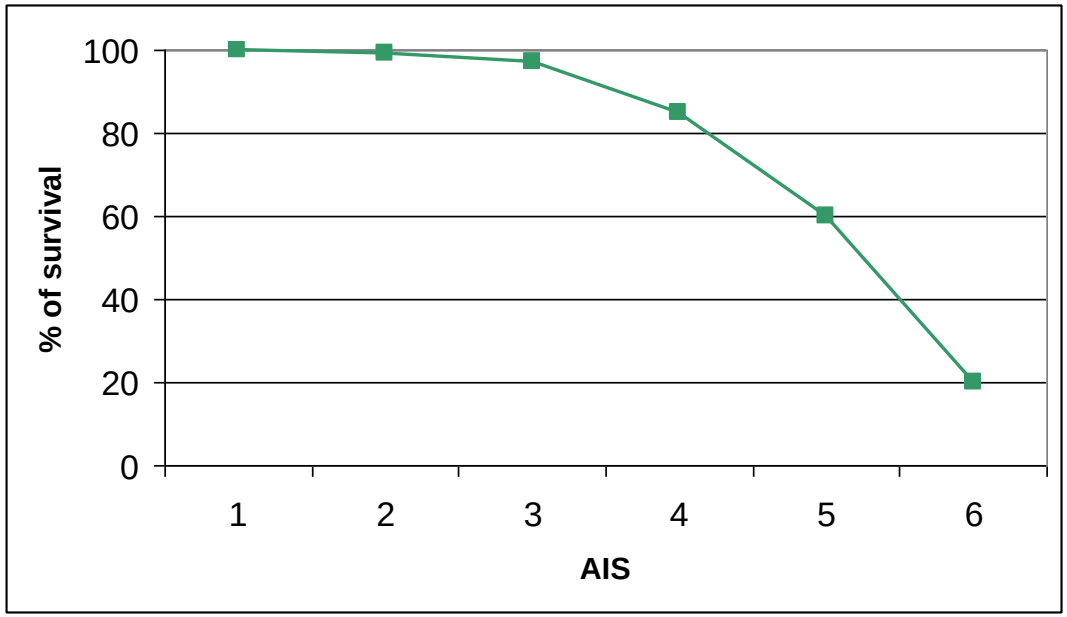
Source: Principales Cifras Siniestralidad 2011

Using Hospital Discharges Data

MAIS3+

- AIS codes measure the severity of the injuries
- AIS codes : NNNNNN . N ← severity

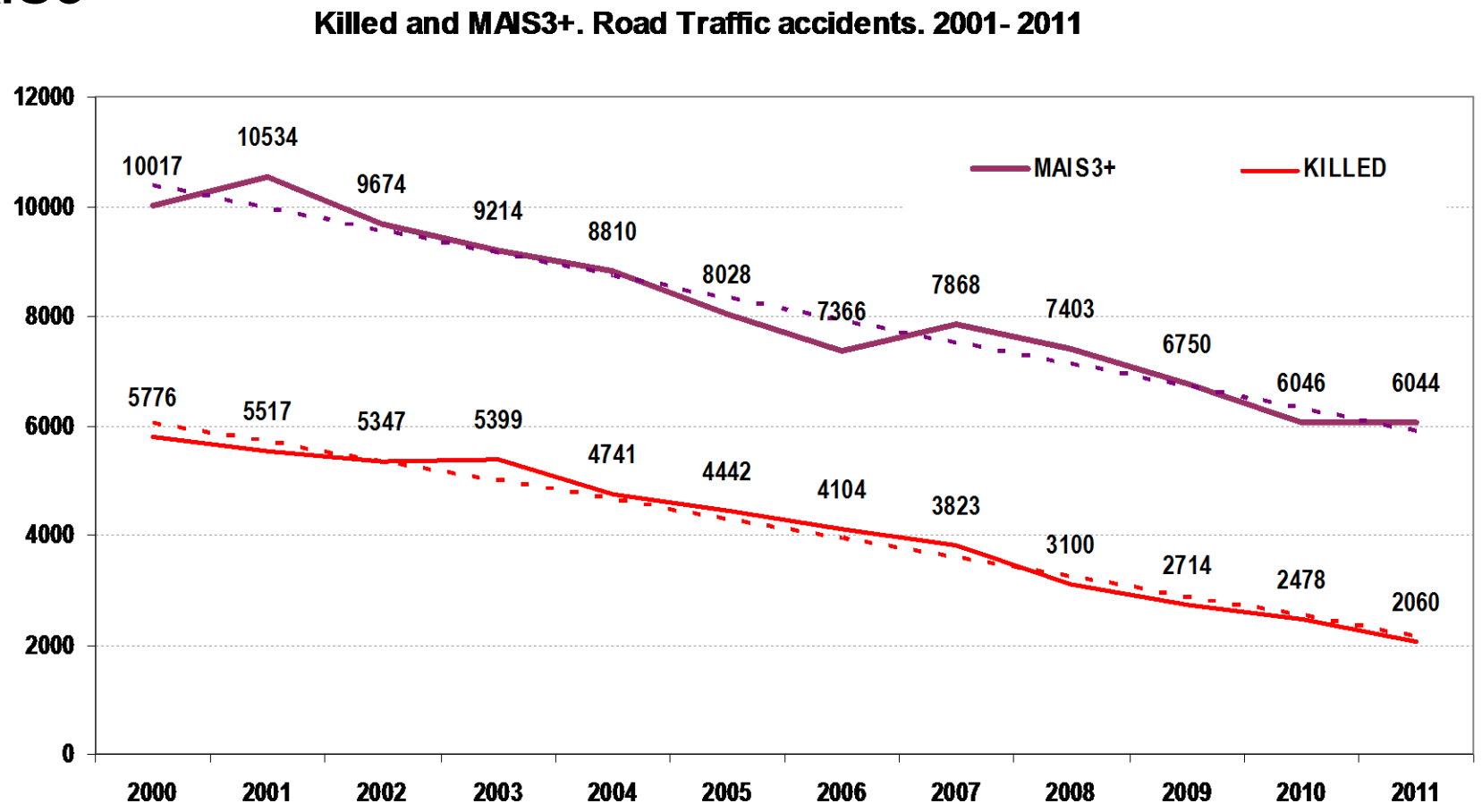
  (injury type and location)
- Severity from 1 to 6. (associated to the death probability)



Source: Fundamentos de Biomecánica en las Lesiones por Accidente de Tráfico

Using Hospital Discharges Data

MAIS3+



- In 2011 for each person killed on the road there were three people with severe injuries.

Conclusions

Using Hospital Discharges we can:

- Know the real scale of the problem (Comparison between sources)
- Learn about injuries, severity and location (Barell Matrix)
- Classify non fatal injuries by severity according to standard criteria (MAIS3+)

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