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Understanding and bridging the differences between national reported and WHO estimated road traffic fatalities

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Eleonora Papadimitriou
Senior Road Safety Data Expert

Background

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- In all countries around the globe, there are **different sources of data on road traffic fatalities from different sectors**:
  - ✓ Police data,
  - ✓ Health,
  - ✓ Insurance,
  - ✓ Transport, etc.
- There are considerable **challenges involved in the collection of complete, accurate and reliable data** on road traffic fatalities by all sectors:
  - ✓ **different definitions** may be used by different sectors, and
  - ✓ **under-reporting** is involved in data collection by all sectors.
- **The difference observed** between the **countries reported data on road traffic fatalities with the respective WHO estimates** is a concern for many countries interested in the reliability and accuracy of their data systems

Differences in EuroMed region

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Country	Official Data	WHO report	Difference in %
Egypt	6700	10466	56
Lebanon	649	1088	68
Tunisia	1505	2679	78
Morocco	3832	6870	79
Algeria	4540	9337	105
Jordan	768	1913	250

- Need to **better understand** the data properties and quality issues behind these differences.
- **Identify ways to improve** the quality of statistics and bridge the differences.

Different definitions

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- Police data are based on the international definition of **"fatalities occurring within 30 days from the crash"**
- The Health Sector data also include **fatalities occurring beyond that period**.
- The Health Sector data are the main source of **Vital Registration statistics (VRD)**, based on the death certificates issued by the hospitals, individual practitioners, etc.
    - Source of WHO estimated fatalities



Challenges in data quality

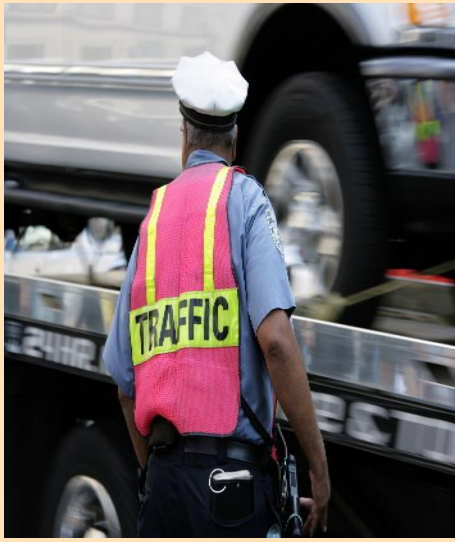
- Even for **countries with good data systems, a difference may occur** between their reported fatalities and WHO estimates, due to the different definitions.

Country	Country reported fatalities*	WHO estimated fatalities**	Difference in %
Belgium	724	1014	40.1
Chile	1623	2116	30.4
Italy	3385	4192	23.8
Japan	4373	5971	36.5
Netherlands	570	650	14.0
Republic of Korea	5092	6374	25.2
Spain	1680	1915	13.9

- **If one or both data sources used are not of good quality**, a larger difference between country reported and WHO estimated fatalities is expected.
- **Under-reporting of road traffic fatalities represents a real challenge** on the quality data collection in all countries.

Difficulties with Police data

- **Under-reporting of fatalities in the Police data files** may be due to:
  - The **non-use of the 30 days** definition;
  - The **insufficient follow-up of traffic casualties** up to 30 days;
  - Some road crashes are **just not reported to the Police** ('real' under-reporting);
  - Some crashes are reported, but **the Police cannot go to the crash scene** and follow them due to non-adequate human resources;
  - While the Police goes to the crash, **does not properly register the incident** due to lack of competence, insufficient training or skills.



Difficulties with Health Sector data

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- **Under-reporting of fatalities in the Health Sector data files** may be due to:
  - The **non-use of international protocols** for the classification of causes of death;
  - **Lack of knowledge of health sector practitioners** in properly assigning cause of death (especially outside public hospitals);
  - **Lack of skills in drafting death certificates** according to WHO standards;
  - **Poor coordination** between central and local authorities in the collection and processing of VRD.



Summary of WHO methodology

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- Country reported fatalities based on 30-days definition
- WHO estimated fatalities based on VRD
  - **Group 1:** Countries with good VRD statistics (completeness for the year estimated at 80% or more, average completeness for the decade including the country-year was 80% or more).
  - **Group 2:** Countries with other sources of information on causes of death (including recent studies submitted to WHO).
  - **Group 3**: Countries with population less than 150,000.
  - **Group 4:** Countries without eligible VRD.
    - A statistical model is used to estimate fatalities

Understanding the differences

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	Global Status Report statistics		VRD statistics**			
	National reported fatalities*	WHO estimated fatalities	Reported VRD	Year	Completeness	Country classification Group
Egypt	6700	10466	11000	2014	>80%	1
Lebanon	649	1088	-	1999	-	4
Tunisia	1505	2679	298	2013	22%	4
Morocco	3832	6870	781	2012	12%	4
Algeria	4540	9337	-	-	-	4
Jordan	768	1913	669	2012	60%	4

- **The only EuroMed country for which VRD meet the WHO quality criteria is Egypt,** while all other EuroMed countries are classified in Group 4, and the WHO statistical model is used to estimate their fatalities.
- However, there is **no single reason for the observed discrepancies**.

Different challenges in different countries (1/3)

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Egypt

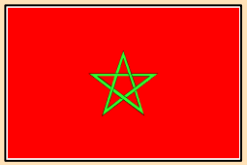


- WHO estimated number of fatalities is **based on the actual VRD reported**.
- However, there is a challenging situation as regards road fatalities data collection in the country. More specifically:
  - The **Police records fatalities occurring at the scene** of the crash;
  - The **EMS (Emergency Medical Services) record fatalities occurring during the transfer**;
  - The **Hospitals record fatalities occurring while in the hospital**;
- **The follow-up of crash casualties for 30 days to complete the Police data files is practically not carried out for all cases.**
- Therefore, the **national reported fatalities, based on the Police data, are clearly an underestimation of the actual fatalities.**

Different challenges in different countries (2/3)

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Morocco



- Several good practice elements in road safety data collection:
  - **engagement and systematic cooperation among key stakeholders**,
  - **compliance to international definitions and standards**,
  - **several steps of data cross-checking and validation** before the publication of country reported fatalities.

- However, **the VRD reported in Morocco are 5 times lower than those reported by the country**, leading to classification **in Group 4.**

Different challenges in different countries (3/3)

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Jordan



- Although the **difference between country reported fatalities and WHO** estimates is the largest in the region, there seems to be **good potential for improvement.**
- The **VRD reported are relatively close to the required level of completeness**.
- There are **known reasons for road fatality related VRD under-reporting** in the country:
  - the **non-inclusion of VRD of foreigners**,
  - A known **misclassification of the cause of death** for a part of the traffic victims.

Towards bridging the difference

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- **Credible data may play a key role as an effective tool for all agencies** in each country for cross-checking the accuracy of their statistics.

- A smaller discrepancy between WHO estimates (VRD) and national reported data demonstrates the accuracy of the national data systems, **enhances their credibility and reflects the efforts of all agencies** involved.



The perfect matching of country reported data and WHO estimates is not the ultimate objective, and a small difference is reasonable, as there is a known difference in fatality definition

Intersectoral cooperation

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- The first step is the identification of the problem, and the **establishment of cooperation** between the **Police**, the **Transport** Sector and the **Health** / VRD Sector.

- The **mobilization of all relevant authorities** is an important prerequisite in ensuring the engagement of the pertinent agencies to the common objective of improving road fatalities data.
- At the same time, countries are strongly encouraged to establish **cooperation with WHO** for the identification of the country-specific challenges, and the request for tailored advice and assistance.



An intermediate objective

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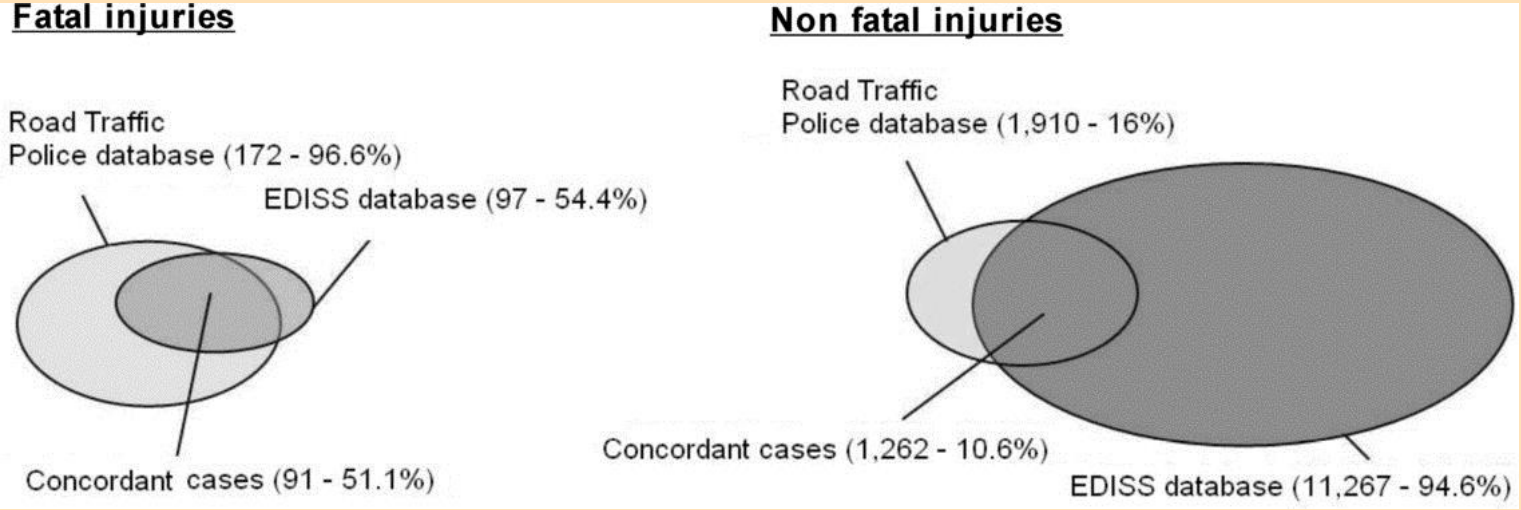
- **Shift to Group 2** - Countries with other sources of data on causes of death (including studies submitted to WHO)
- Cooperation of the Police and the Health Sector to implement one or more **regional studies to estimate the level of under-reporting** of road traffic fatalities.
- Based on the **linkage and matching of records in Police and Hospital databases** over a given area, with coverage by specific Police departments and Hospitals.
- **Can be implemented with relatively low resources**, and the cooperation with Universities or Research Institutes may open opportunities.



Example: the case of Greece

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- Regional study on under-reporting of traffic casualties
- **Cooperation between National Technical University of Athens** (national traffic accidents database) **and Athens Medical School** (EDISS injuries database)
- **Linkage and matching of Police and Hospital data over three regions**



The eventual objective

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- **Improve the quality of VRD** to meet the WHO criteria and **shift to Group 1**
  - adoption and use of the ICD-10 protocol of classification of diseases.
  - the adoption and use of the WHO death certificate model
  - Coverage of >80% of the population



- Several administrative steps, time and resources involved in improving VRD
- WHO may provide assistance for implementing a pilot project
- **Pilot project** based on 'simplified' death certificate model and on-line VRD transmission through a web platform and mobile phone application

- **A formal adoption of the process by the Ministry of Health**, and the engagement of Police, Hospitals and private doctors.

Continue efforts to improve all sectors' data

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- Even if the country is shifted to Group 2 or Group 1, incomplete and inaccurate Police data will result in the persistence of a large discrepancy - in this case due to the Police data and not to the VRD.
- Adoption and proper implementation of **international definitions** and protocols regarding road crash statistics,
- Exhaustive **follow-up of fatalities for 30 days** after the crash
- **Cross-checking of Police data with Health Sector data** and other Sectors data
- Strengthening of **cooperation among all agencies** involved in the collection, processing and publication of road crash statistics.

A joint EuroMed/WHO leaflet

- Aims at **assisting** EuroMed Partner countries **understand the differences between their reported data on road traffic fatalities with the respective WHO estimated** fatalities included in its Global Status Report of Road Safety, present ways to improve the quality of their statistics and bridge the differences.

- **The information in this publication may also assist other countries and regions** to address similar challenges.

- **Coming soon!...**

Thank you

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