LINKING MULTIPLE SOURCES OF DATA TO ASSESS THE STATUS OF CHILD ROAD SAFETY IN LEBANON

Samar Al-Hajj, PhD
Assistant Research Professor
Health Management and Policy
OUTLINE

- Child Injury Status in EMR and Lebanon
- Child Road Safety: Study Design and Methodology
- Data Sources
- Key Findings
- Recommendations
Child Injury Status in Eastern Mediterranean Region (EMR)
# Child Injury Status in Lebanon

<table>
<thead>
<tr>
<th>1990 Rank</th>
<th>2017 Rank</th>
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<tbody>
<tr>
<td>Maternal &amp; neonatal</td>
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<tr>
<td>Other non-communicable</td>
<td>Other non-communicable</td>
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<td>Self-harm &amp; violence</td>
<td>Neoplasms</td>
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<tr>
<td>Other infectious</td>
<td>Self-harm &amp; violence</td>
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<td>Respiratory infections &amp; TB</td>
<td>Unintentional Inj</td>
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<td>Unintentional Inj</td>
<td>Transport injuries</td>
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<tr>
<td>Neoplasms</td>
<td>Respiratory infections &amp; TB</td>
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<td>Enteric infections</td>
<td>Other infectious</td>
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<td>Transport injuries</td>
<td>Cardiovascular diseases</td>
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<td>Digestive diseases</td>
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<td>Diabetes &amp; CKD</td>
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<td>Diabetes &amp; CKD</td>
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<td>HIV/AIDS &amp; STIs</td>
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<td>HIV/AIDS &amp; STIs</td>
<td>Chronic respiratory</td>
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<td>Nutritional deficiencies</td>
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<td>Nutritional deficiencies</td>
<td>NTDs &amp; malaria</td>
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<td>NTDs &amp; malaria</td>
<td>Substance use</td>
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<td>Musculoskeletal disorders</td>
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<td>Skin diseases</td>
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<tr>
<td>Skin diseases</td>
<td>NTDs &amp; malaria</td>
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<tr>
<td>NTDs &amp; malaria</td>
<td>Mental disorders</td>
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<tr>
<td>Mental disorders</td>
<td>Communicable, maternal, neonatal, and nutritional diseases</td>
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<tr>
<td></td>
<td>Non-communicable diseases</td>
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<tr>
<td></td>
<td>Injuries</td>
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Child Road Safety: Study Design and Population

**Study Design**
Retrospective study to determine the causes of child RTI, examines its extent, characteristics and risk factors, (2015-2017)

**Definition – Child RTI**
Child fatal or non-fatal injuries resulting from a road traffic collision for all types of road users (pedestrians, motorcyclist, cyclists and 4-wheel vehicle occupants)

**Population**
Children aged 0–17 years

**Data Collection Form**
Data Collection Form (CHIRPP, WHO, EU Road Injuries) Research Electronic Data Capture (RedCap) tool
Child RTI: Data Collection Form

- Patient’s demographics (age, gender, nationality).
- Victims involved (i.e. driver/passenger, pedestrian, cyclist, motorcyclist).
- Clinical presentation (Nature of injury, Body part injured, ISS, GCS).
- Collision information (time/location, weather conditions, car type).
- Disposition (treated and released, admitted, DOA, deceased in ER).
- Contributing factors (i.e. seat belt, alcohol).

\[\text{Patient Reference No.:}\]

- Gender: 1 - Male  2 - Female
- Age:
- Nationality: 1 - Lebanese  2 - Syrian  3 - Palestinian  4 - Other_____
- Injury Date (dd/mm/yyyy):
- Injury Time (hh:mm am/pm or 24 hr clock):
- Injury Location (i.e. closest intersection = Travel direction N, S, W, E):
  - Victim Arrival Mode: 1 - Walk 2 - Non-motorized vehicle 3 - Private vehicle 4 - Motorized 2- or 3-wheeler 5 - Taxi 6 - Public transport 7 - Police 8 - Ambulance 9 - Inter-hospital ambulance transport 10 - Aeromedical 99 - Unknown/other
- Was the child accompanied by an adult/guardian? YES/NO
- Injury severity score (if any)
- Deceased (within 30 days):
  - 1 - died on arrival
  - 2 - hospitalized and deceased within 30 days
  - 3 - hospitalized and not deceased within 30 days
  - 99 - Unspecified
- Victim involved:
  - 1 - Vehicle Driver
  - 2 - Passenger front seat
  - 3 - Passenger rear seat
  - 4 - Passenger driver side
  - 5 - Passenger side
  - 6 - Pedestrian
  - 7 - Bicyclist
  - 8 - Motorcyclist Driver
  - 9 - Motorcyclist Passenger
  - 10 - Other:
- Road Type:
  - 1 - Highway
  - 2 - Side street
  - 3 - Sidewalk
  - 4 - One-way traffic (for motorized vehicles)
  - 5 - Two-way traffic not physically divided
  - 6 - Physically divided roadway
  - 7 - At a junction
  - 8 - Roundabout
  - 99 - Unspecified
- Victim Safety equipment used:
  - 1 - Airbag
  - 2 - Seatbelt
Multiple Sources of Road Injury Data
Hospitals across Lebanon

- AUBMC
- Lebanese Hospital Geitaoui
- Bahman Hospital
- Sidon Hospital
- Hammoud Hospital Universit...
- Lebanese Italian hospital
- Bint Jbeil Governmental Hos...
- Hasbaya Governmental Hos...
- Hôpital Libano Français
- Khoury General Hospital
- Dar Al Amal
- Dar Al Hekme
- Keserwan Medical Center
- Hôpital Aboujaoudé
- El Youssef Medical Center
- Haykal hospital
- New Mazloum Hospital
- CHN
- Dr. Monzer al hajj hospital
- Tannourine Governmental H...
- Dar AlShifa Hospital
- Rachaya Governmental Hos...
- Medical 2000 Hospital
- Hospital Notre Dames Des S...
- Nd Maritime
- Notre Dame Des Savoie Hospi...
- Rafic Hariri University Hospital
- Sacre Coeur Hospital
- Hamed Farhat Hospital
- Sheikh Ragheb Hospital
Data Collection Emergency Departments: Electronic Health Records

Review of Patients Charts- Electronic Health Records (EHR)
1. Lack of Proper Coding
2. Missing Essential Variables
Data Collection Emergency Departments: Paper Based Health Records

- Paper Records
- Log Books
- Warehouse/Archive
Data Collection Internal Security Forces: Arabic Electronic Database
KEY FINDINGS

- Male 72%, Female 28%
- The average age of child sustaining RTI = 11 years old
- [6-14] highest proportion RTI 45%
- 50% of child RTI victims are vulnerable road users (Pedestrians and Motorcyclists, cyclists)
- Lebanese ~66%, Syrians ~28%, 2.5% Palestinian
KEY FINDINGS

- Beqaa, Akkar - leading high rates of Child RTI followed by the South and Baalbek
- Speed was the most common contributing factors 28%, distracted/careless driver 22%, and pedestrian careless crossing 16%.
- Head Injuries are the most common injuries ~26%
- Majority of deaths occur on 2-Way Road Not Divided ~54.4%, followed by highways ~20%
- RTI peaks in the summer season 32% and declines in the winter 20%
KEY FINDINGS

- [0-5] higher odds of fatal injuries: ~13.9% of children sustaining RTI injuries died as a result of their injuries.
KEY FINDINGS

- **453** children were underage drivers (4-wheel vehicles and motorcycles).

- Increased child risk of sustaining fatal injuries – **16.4%** of young 4-wheel vehicle drivers.
RECOMMENDATIONS

- Ensure Proper Reporting of RTI cases
- Ensure proper Coding of RTI cases (ICD)
- Ensure Harmonization between entities
- Facilitate access, exchange and transparency
- Establish National Injury Surveillance System
- Translate Findings into Evidence-Based road safety policies and behavior change programs
- Invest in Safer Road Infrastructure and Road Safety Law Enforcement