

MDIM - Minimum dataset for injury monitoring Background and model – MDIM in Norway and Syria

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Background

In the first ICE-symposium in Washington in 1994, in one workshop a Minimum Basic Data Set (MBDS) for unintentional injuries was discussed. A report was given to the plenum with the conclusions from the workshop.³

There are a lot of different data sets on unintentional injuries around the world. The working group distinguished between three different types of data sets with regard to 1) the level of detail of the information and 2) the purpose of collecting the data set:

Level of detail of information	Type of data set	The purpose of collecting the data set
General case indicators + evt. free text	MBDS (A Core Set)	Policy setting Identify "hot spots" Follow trends National and international comparisons
More detailed indicators + evt. free text	Standard data set (SDS) ICD - X, chapter XIX, XX NEISS, NOMESCO, EHLASS, HASS, PORS	Identify more detailed "hot spots" Identify some preventive means (Research, to some extent)
Case stories	Expanded data sets (EDS) Modules on: Traffic, Burns, Falls, Products etc.	Identify preventive means Research

There are no sharp borderline between these three groups. When using a MBDS in order to fulfill the purpose of getting trends and making comparisons nationally and internationally, high accuracy is necessary, the amount of the non-registered cases should be known. When using a SDS, more money and time is required to get the same quality of data than when using a MBDS. In my country, it is probably impossible to get a sound SDS in the daily routine in the health system without extra registration resources. An EDS is mainly for preventive purposes, it is not necessary to know the exact number of that specific injury which is studied. A study of just one injury might give valuable information for prevention. It would be very costly to collect an EDS for all injured patients in the health system.

One of the problems in injury surveillance when using a SDS, is that the accuracy is seldom high enough for making valid statistics, and that the level of detail is seldom high enough to give an understanding of the causes to enable design of preventive means. The challenge is to design a surveillance system which gives accurate statistics and enables an identification of the injuries for collection of an EDS.

In the report from the workshop (Lund, Holder and Smith 1994), some suggestions to the content of a MBDS is given. During the years, there have been some attempts in Norway to establish a MBDS in primary care and general practice.^{1,2} ICD - X was introduced in Norway in 1999. An abbreviated version of chapter XX is collected for all in-patients due to injuries together with some other variables. This dataset might be classified as a MBDS. In the city of Oslo (population of 500 000), a MBDS is introduced for registering all injured persons visiting the primary health system. The Ministry of Health in Norway has now asked the National Institute of Public Health to come up with a proposal for a MDIM for local registration, which might be a national recommendation.

ICECI-working group on MDIM (Minimum Data Set for Injury Monitoring) was established in 1998

During the discussions of the ICECI (International Classification of External Causes of Injury) at the world conference in Amsterdam in May 1998, a proposal of having a MBDS compatible to ICECI was put forward. A working group consisting of people from different parts of the world was established:

Johan Lund, Norway, chair
Alex Butchart, South Africa
Yvette Holder, PAHO (Pan American Health Organization)/WHO
Sayed Ali Hussein, WHO/EMRO (East Mediterranean Regional Office)
Ronald Lett, Canada, consultant for Uganda
Anne Lounamaa, Finland
Susan Mackenzie, Canada.

During the work, the abbreviation MDIM was introduced instead of MBDS, which has some unwanted connotations. A proposal to a MDIM was given in November 1998. I will show this proposal here, together with some experiences from Norway and Syria.

What is MDIM?

A Minimum Dataset for Injury Monitoring (MDIM) is for monitoring injuries in a population using the fewest possible variables. The number of fewest possible variables is to some degree dependent on the available registration resources. The absolute minimum variable, is: Injury - Yes/No. We wanted to go a bit further on, and included some more variables in the proposed MDIM.

A MDIM is supposed to be collected as a routine activity, mainly in the health system without additional economic or personal resources,

It consists of relevant variables to describe different characteristics of:

- injured person
- accident
- injury
- consequences.

Purposes with MDIM

A MDIM can serve many purposes. The two main purpose are:

- a) monitoring:
 - determine size of injury problem (number, frequency, incidence), especially directed to authorities responsible or working with prevention of the different accident and injury types
 - establish priorities, policy setting
 - study injury risk over time
 - identify "hot spots" in a spatial/geographic sense
 - evaluate injury and accident prevention activities.
- b) identification of cases for in-depth investigations.

Other purposes are:

- c) allocation of resources to the national health system
- d) assisting in developing injury prevention activities, however, a MDIM does not contain many details of the causes.
- e) assisting in evaluation of injury prevention activities (by studying trends)
- f) formulation of hypothesis for further investigation.

Content of MDIM

It is suggested to have a minimum core of variables and some optional variables due to local needs and/or restricted registration resources. These variables are listed below. The letters N and S in the margin indicate that this particular variable is contained in the Minimum Data Set introduced by the health authorities in Oslo, Norway (N) in 1998 and in Syria (S) in 1998. I got the opportunity to act as a WHO short term consultant in October 1998 to give advice to the Syrian authorities how to revise an existing national injury monitoring system in the primary and secondary health system. The MDIM proposal from the working group influenced this revision. On the other hand, the experience in Syria influenced the Minimum Core values of Place of occurrence and Activity of victim when injury occurred.

Minimum Core

- N, S Registration unit, type/number (for identification of the source of the data)
- N, S Personal data of victim: age, sex, municipality/suburb of residence (for rates calculation)
- N, S Intent
- N, S Place of occurrence
- N, S Activity of victim when injury occurred
- N, S Nature of injury (health system most often register diagnoses)

Optional variables (useful, but depending on your registration resources)

- N Municipality/suburb where injury happened
- N Date and time of injury
- N Mechanism of injury (abridged E-code)
- Body part injured
- N Severity
- S Disposition
- N Free text describing the accident/injury event.

Three important variables in the proposed MBDS:

In the following, the values of three important variables will be shown:

- Intent
- Place of occurrence
- Activity of victim when injured

Also with regard to the variables, the principle of having optional values depending on registration resources/local needs is followed:

Intent

- N, S Accidental/unintentionally
- N, S Violence/interpersonal
- N, S Intentional self harm
- N, S Other
 - Optional:
 - Operation of war, civil insurrections, terrorism
 - Legal intervention
 - Undetermined
- N Unspecified

Place of occurrence

- N, S Street, highway incl. sidewalks, bicycle paths, traffic accident (traffic accident is asked for here in order to avoid an additional variable: Traffic accident – Yes/No)
- N, S Street, highway, incl. sidewalks, bicycle paths, all other accidents
- N, S Home and residential area
- N, S Other

Optional:

- N - Day care for children, kindergarten
- N - Playground, excl. at home and at school
- N - School, educational area, incl. playground, excluding day-care for children
- N - Sports and athletics area, incl. at school and at institution
- N - Old peoples home, nursing home
- N, S - Farm, excluding home
- Commercial area
- N - Countryside, open nature, water
- N, S Unspecified

Activity of victim when injury occurred

- N, S Paid work, incl. exercise, motion, sport during paid work
- N, S Education, incl. sport in education
- N, S Other sport, exercise, motion
- N, S Other

Optional:

- Travel to/from work (in some countries, these accidents are occupational accidents, in other countries they are not.)
- Travel to/from education
- Leisure/play activities
- N - Sport in education
- N, S Unspecified

Accident-types for monitoring when combining place of occurrence and activity when injured

Minimum cores of place of occurrence and activity will give:

- N, S Street, highway, traffic accidents
- N, S Street, highway all other accidents
- N, S Occupational accidents
- N, S Home accidents
- N, S Educational accidents, incl. sport accidents
- N, S Other sport accidents
- N, S Other accidents

The specified group of accidents in this minimum core will in Norway constitute of app. 60 - 70% of all medically treated injuries.

Optional:

- N, S Farm accidents, excluding home accidents
- N Kindergarten/day care accidents
- N Playground accidents
- N School area accidents
- Sports accidents during education
- Sport area accidents
- N Old people home/nursing home accidents

- Commercial area accidents
- Recreational/cultural/public areas accidents
- Accidents when travelling to/from work
- Accidents when travelling to/from education
- Leisure/play accidents
- N Accidents in countryside, open nature, water

Some of the optional accidents types are sub-groups of the accident types in the minimum core. The accident types in the optional group will in Norway constitute of app. 20 - 30% of all medically treated injuries.

The accidents are defined using two dimensions. A home accident can also be an occupational accident. In the table below, a proposal for a standard is given. When the accidents are put into a table like this, it is possible to count the accidents by either dimension (place of occurrence and activity) and as a combination of those two dimensions.

Place of occurrence	Activity of victim when injured								
	Paid work ¹	To/fr work	Edu-cation ¹	To/fr edu.	Sport in educ. ²	(Other) sport ¹	Play/ Leisure	Other ¹	Unspe cif. ¹
Street, highway, traffic acc. (T) ¹	T	T	T	T	T	T	T	T	T
Street/highway, all other acc. (S/H) ¹	Pw	Tfw	E	Tfe	SE	S	S/H	S/H	S/H
Home (H) ¹	Pw	Tfw	E	Tfe	SE	S	H	H	H
Day care for children/ Kindergarten (K)	Pw	Tfw	E	Tfe	SE	S	K	K	K
Playground (P)	Pw	Tfw	E	Tfe	SE	S	P	P	P
School, educational area (S/E)	Pw	Tfw	E	Tfe	SE	S	S/E	S/E	S/E
Sports, athletics area (S/A)	Pw	Tfw	E	Tfe	SE	S	S/A	S/A	S/A
Old peoples home/ nursing home (O/N)	Pw	Tfw	E	Tfe	SE	S	O/N	O/N	O/N
Farm, excl. Home (F)	Pw	Tfw	E	Tfe	SE	S	F	F	F
Commercial area (C)	Pw	Tfw	E	Tfe	SE	S	C	C	Co
Countryside, open nature (N)	Pw	Tfw	E	Tfe	SE	S	N	N	N
Other (O) ¹	Pw	Tfw	E	Tfe	SE	S	P/L	O	O
Unspecified (U) ¹	Pw	Tfw	E	Tfe	SE	S	P/L	O	U

¹These accident types are defined when using the recommended mandatory dataset.

²Sport in education may or may not be included in education.

MDIM – ICECI relationship

It is important that there is compatibility between ICECI and a MDIM.

From a MDIM is possible to expand into various directions and modules depending on your study/prevention area and your registration resources:

- traffic accidents
- violence
- child accidents
- sport accidents
- etc. etc.

A MDIM is a tool for local, regional, national and international comparisons on the main accident and injury types, a tool which require a minimum of resources.

References

1. Grimsmo A and Johnsen K (1999) Data assisted review of medically treated injuries in general practice. *Eur J Gen Pract* 5: 59-65.
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3. Lund J, Holder Y and Smith RS (1994) Minimum Basic Data Set (MBDS), Unintentional Injuries, pp. 34-1 – 34-4 in *Proceedings of the International Collaborative Effort on Injury Statistics, Volume 1*, U.S. Department of Health and Human Services, Bethesda, USA, 1994