

SURVEILLANCE-BASED EPIDEMIOLOGY OF FATAL AND NON-FATAL SCHOOL INJURIES IN GERMANY



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1. Background

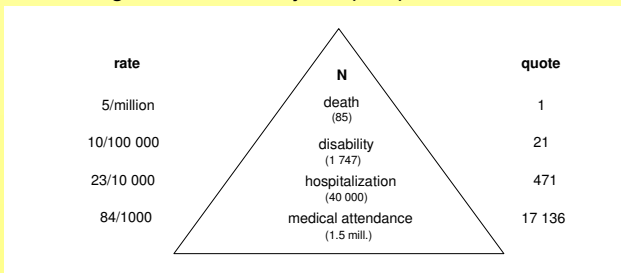
By the year 2011 fatal and non-fatal school injuries in Germany should be reduced by 30% (Potsdam Declaration 2005). The School Injury Surveillance System - Germany (SISS-Ger) delivers essential information for planning and evaluating prevention measures. Objective: To quantify and to describe the magnitude and time-trends of mortality and morbidity resulting from important types of school-related injuries - traffic-related injuries, sport injuries.

2. Methods

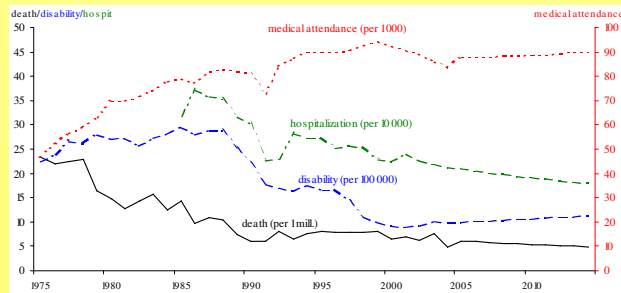
- The national School Injury Surveillance System (SISS-Ger) as part of Statutory Pupils' Accident Insurance monitors the extent and characteristics of injuries in order to guide prevention efforts.
- Population at Risk
 All children and adolescents from nursery school through university (17.4 million insured young persons, respectively 21.1% of the German population during their time at school including way to and from school).
- Core Data Elements
 Time and location of injury, activity before injury, accident mechanism (E-Codes), diagnosis (N-Codes), school type, demographics.

3. Results

3.1. The magnitude of school injuries (2004)



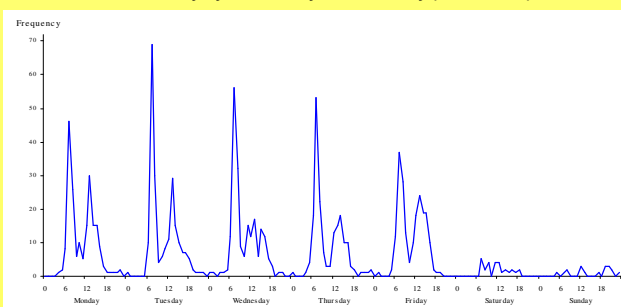
3.2. Trends and forecasts of school injury indicators (1975 - 2014)



Annotation:
 - Structural influences: - 1989-1991 German reunification
 - 1997 Introduction of a new social law - SGBVII which states that in to be entitled to receive monetary compensation, the necessary duration for a reduced earning capacity has been increased from 13 to 26 weeks - consequently, leading to fewer monetary compensations.
 - Forecast: Negative binomial regression (SAS 8.1 Unix) in respect to core factors such as observed structural influences and anticipated changes in expositions regarding the size of student body and number of comprehensive schools.

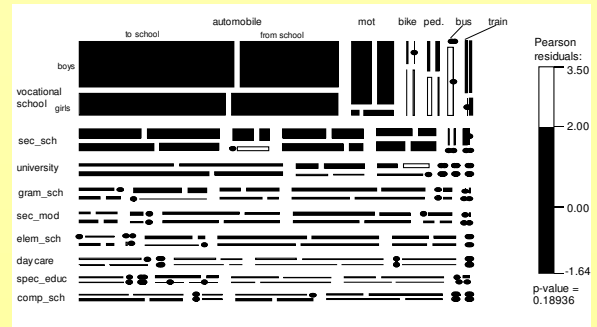
3.3. Fatal school injuries

- Traffic related mortality by time of day and weekday (1995 - 2004)



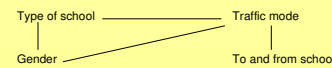
There are extreme peaks every work day. About two thirds of deadly injuries occur on work days before 12 o'clock noon, particularly commuting to school during rush hour between 7 and 8 a.m.

- Multivariate Analysis of traffic-related mortality (1995 - 2004)



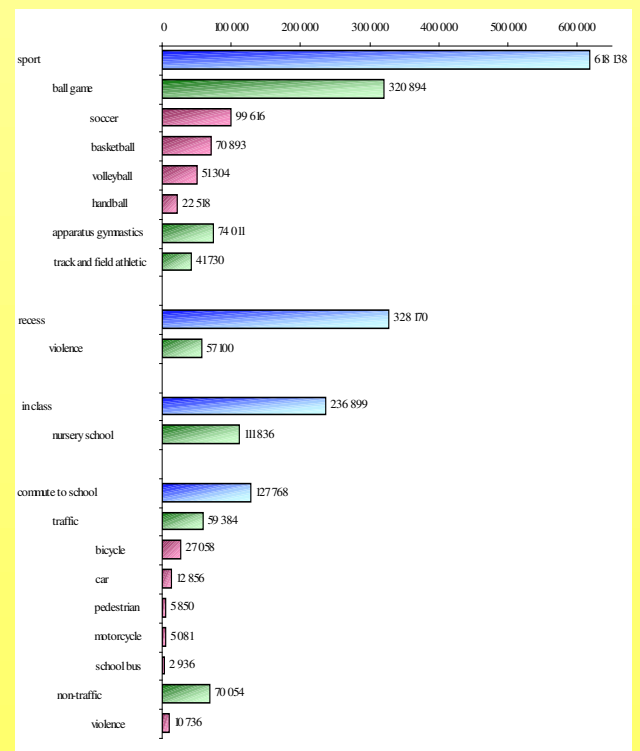
Legend:
 • Type of school: vocational school, sec_sch (secondary school), university, gram_sch (grammar school), sec_mod (secondary modern school), elem_sch (elementary school), day care, spec_sch (special education), comp_sch (comprehensive school)
 • Mode of traffic: automobile, mot (motorcycle), bike, ped (pedestrian), bus, train
 • commute: to school, from school

Hierarchical log-linear model with four interactions [type of school*traffic mode], [type of school*gender], [traffic mode*gender], [traffic mode*commute to and from school]



Lit.: The Strucplot Framework: Visualizing Multi-way Contingency Tables with VCD (Meyer.D. et al. 2005)

3.4. Distribution of non-fatal school injuries 2004



4. Conclusion

Priorities for action planning are:
high-risk and high-vulnerability groups, settings and activities

- injury mortality focusing on:
 vocational school, car-related injuries, young men, commute to school
- injury morbidity focusing on:
 sports-related injuries, ballgame (soccer) bicycle- and motorcycle-related injuries

For more detailed results on specific aspects see
www.unfallkassen.de -> Statistik und Epidemiologie