

The UK Burden of Injury Study

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Background

- Measurement of the burden of conditions is needed to:
 - Provide information on societal impact
 - Persuade policy makers to invest in prevention (WHO spends 0.6% on injuries which account for 14% global DALYs)
 - Assess effectiveness of policies and interventions

Aim

The aim of the study was to provide estimates of the UK burden of injury

The study was commissioned by the Department of Health's Policy Relevant Research Panel

Objectives

To measure the impact of varying severities of injuries for children and young people, adults and older people in relation to:

1. The effects on health related quality of life and disability.
2. The consequences for health and social care services in terms of resource utilisation.
3. The effects on the economy and the labour market in terms of working days and working life years lost.
4. The personal impact of injury to the individual and their experiences following the injury.
5. The total UK burden of injuries by combining study specific disability data with administrative health and mortality datasets.

Design

A mixed methodology study, incorporating quantitative and qualitative components, including a prospective longitudinal multi-site study involving patients with a broad spectrum of injuries, and extrapolation of the impact of their injuries to the UK utilising routinely collected data.

Design of quantitative component

- Recruit 1320 participants from ED and inpatient settings in 4 centres; 50% ED treated, 50% admitted
- Pre-injury, 1, 4, 12 month assessment of HRQoL, work limitations, health and social care service utilisation
- Once returned to 'normal' no further follow up
- Categorisation by previously used groupings – Dutch studies
- Need for data imputation for some categories recognised
- Mapping study specific data to incidence data from electronic ED, inpatient and mortality datasets to provide UK estimates
- Calculation of aspects of the economic costs of injury

Design continued

- Mortality data: 2005; no electronic – published ONS England and Wales, and from Scotland and Northern Ireland from PHOs.
- Inpatient data: HES (England) and PEDW (Wales) – factored to UK
- ED incidence: based on 5 hospitals in All Wales Injury Surveillance System (AWISS)
- Mapping of AWISS codes to Dutch/GBD injury groups and ICD10
- Calculation of DALYs – Global Burden of Diseases Study
Methodology: - Years of Life Lost (YLLs); Years Lived with Disability (YLDs)

Results

- 1517 recruited, 5-99 yrs, 54% male, 92% unintentional injuries
- Response rates: 65%, 80%, 86%
- Assigned to 13 Dutch categories, but few in some categories (poisoning, internal organ)
- Mostly AIS severity 1,2 and 3
- Of 12 month responders, 71% (n=230) still affected
- Disability weights and durations calculated for hospitalised/not

Coverage of ED and HDR cases in BOI studies

Injury Groups		ED (AWISS*)	HDR (PEDW**)
EURO COST 39	Coded	92.5	92.4
	Not coded	7.5	7.6
EURO COST 10	Coded	94.4	97.4
	Not coded	5.6	2.6
MEERDING 13	Coded	91.1	87.4
	Not coded	8.9	12.6
GBD 33	Coded	67.4	78.3
	Not coded	32.6	21.7
Haagsma 44	Coded	65.6	58.0
	Not coded	34.4	42.0

*AWISS - All Wales Injury Surveillance System

** PEDW – Patient Episode Database for Wales

Number of events or costs and population rate per 100,000 for UK in 2005

	NUMBER	RATE/100,000
Hospitalisation	750,999	1240
ED attendances	7,982,947	13,339
Deaths	22,185	36.8
ED cost	£48M	
Inpatient costs	£2.15B	
DALY/£30k	£31.5B (est)	

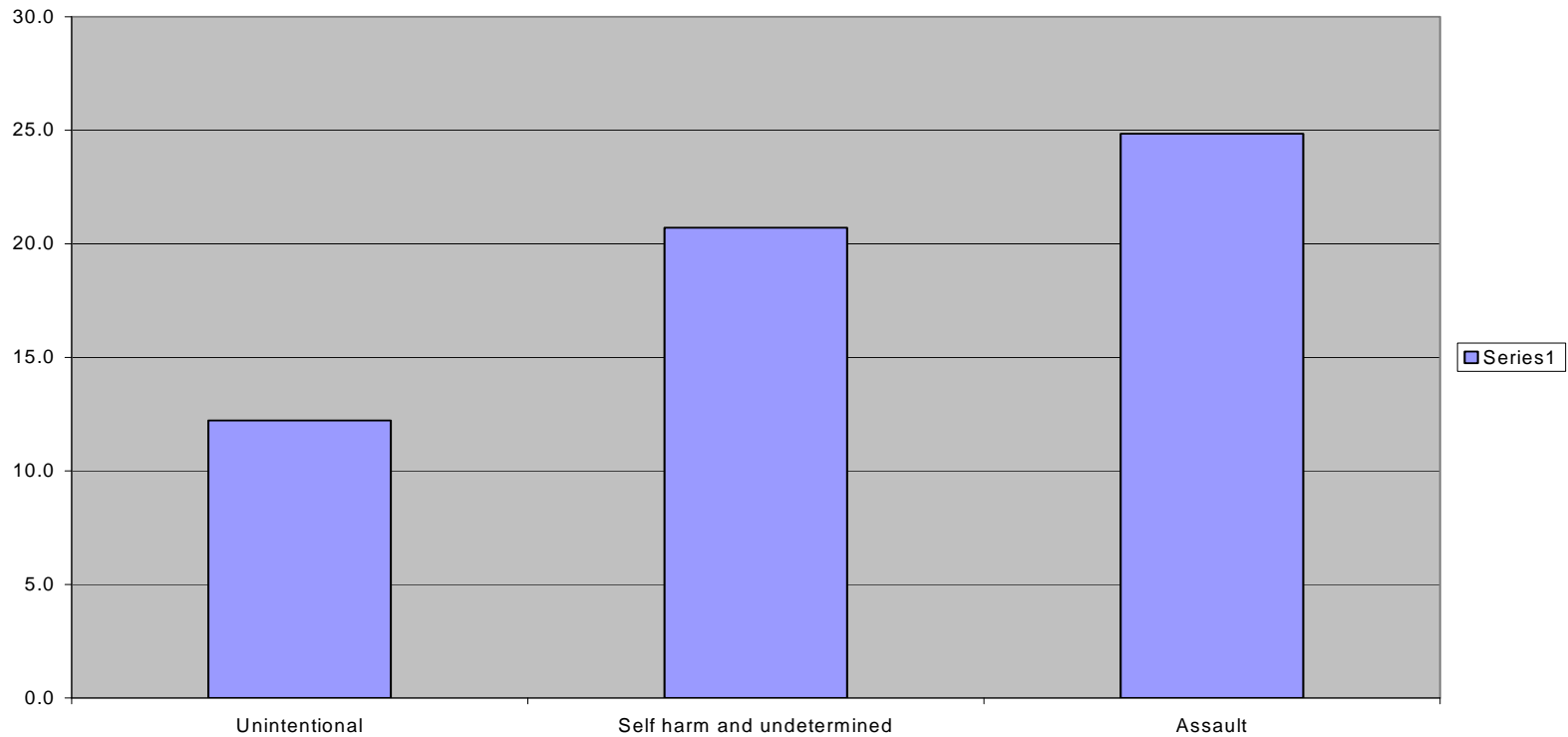
UK Population level DALYs – all injuries (method 2*)

UK YLDs – within 12 months	152,301
UKYLDs – permanent disability	1,101,240
UK YLLs	320,721
UK DALYs	1,574,262
% contribution of YLDs to DALYs	79.6

***Method 2 assumes a zero difference in EQ5D scores if participants had indicated at an earlier stage (1 or 4 months) that their injury no longer affected them**

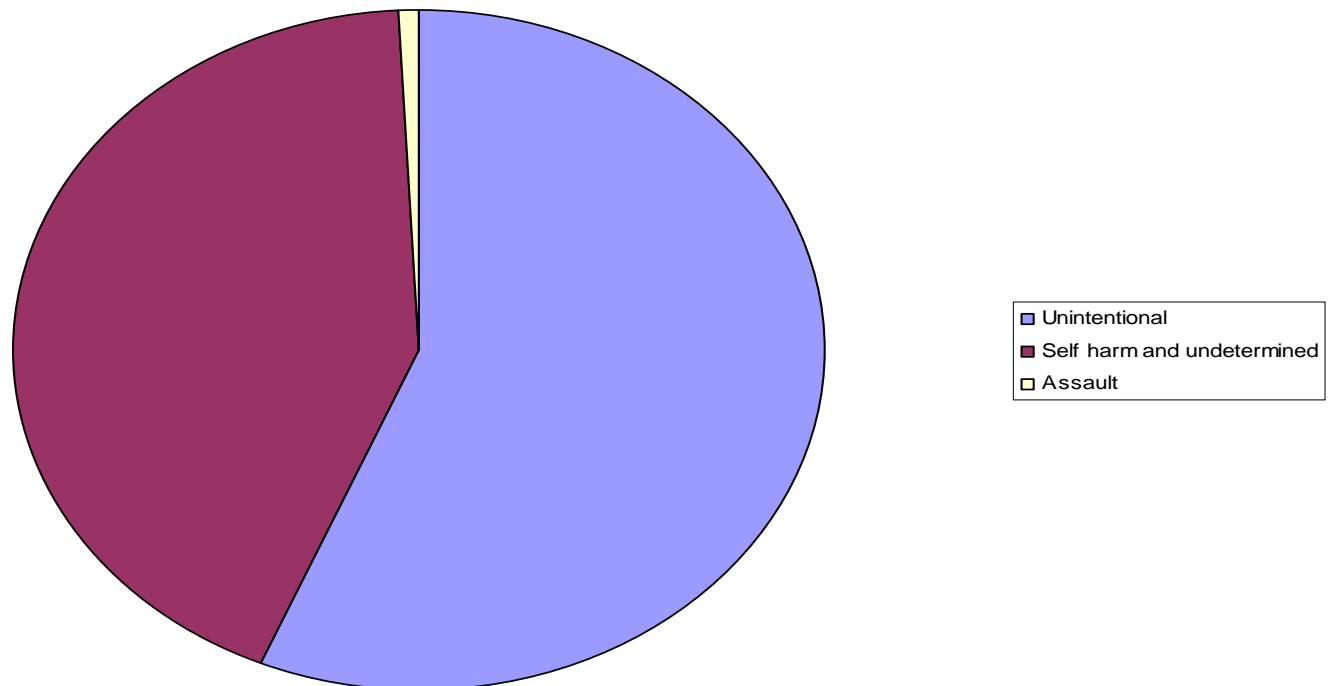
Wales 2003-7, YLL average per death, by intent

Wales 2003-7 Average YLL per category of injury deaths



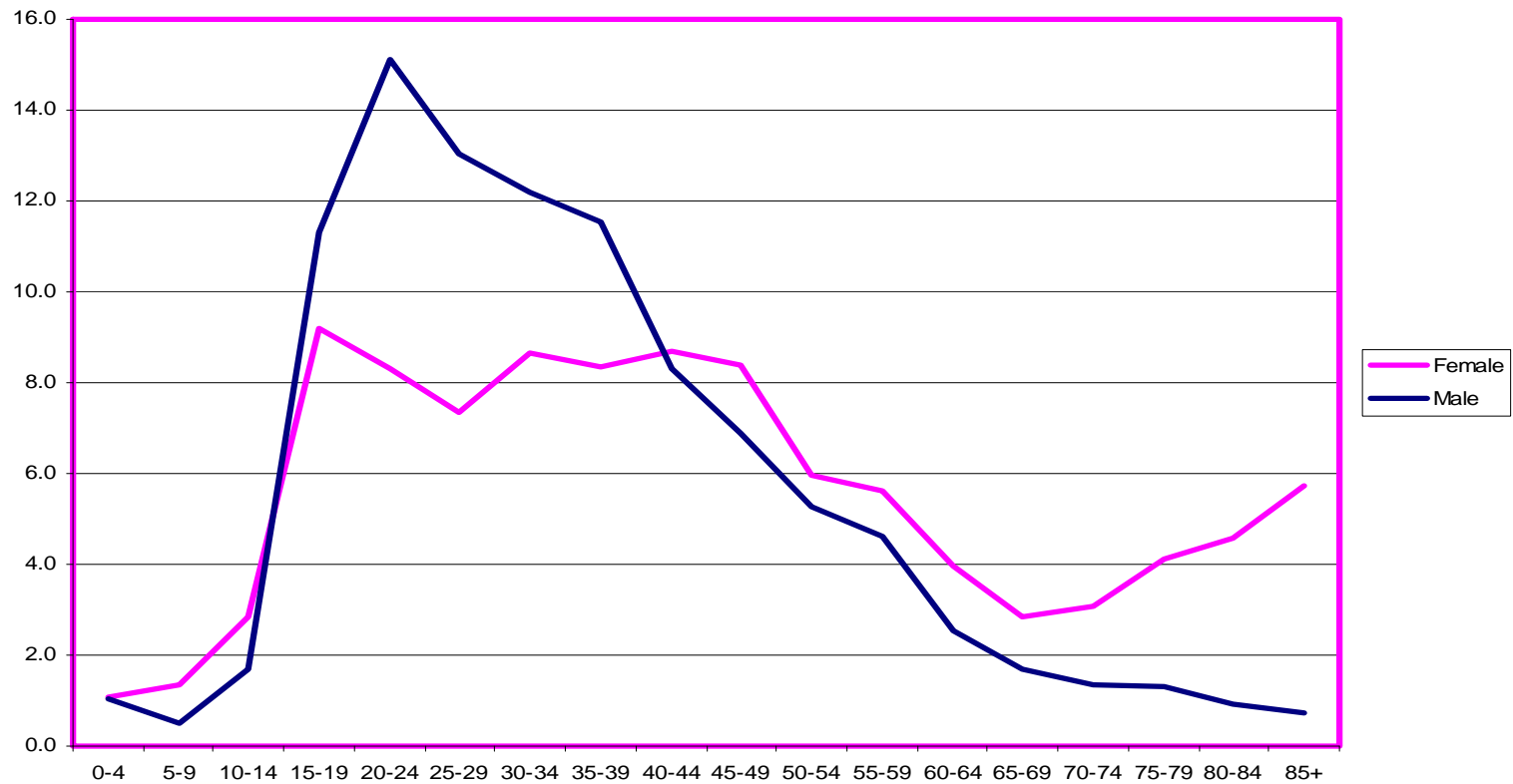
Wales 2003-7, YLL % by intent

Wales 2003/7 Injury YLL % Distribution



Wales 2003-7, YLLs % by agegroup and gender

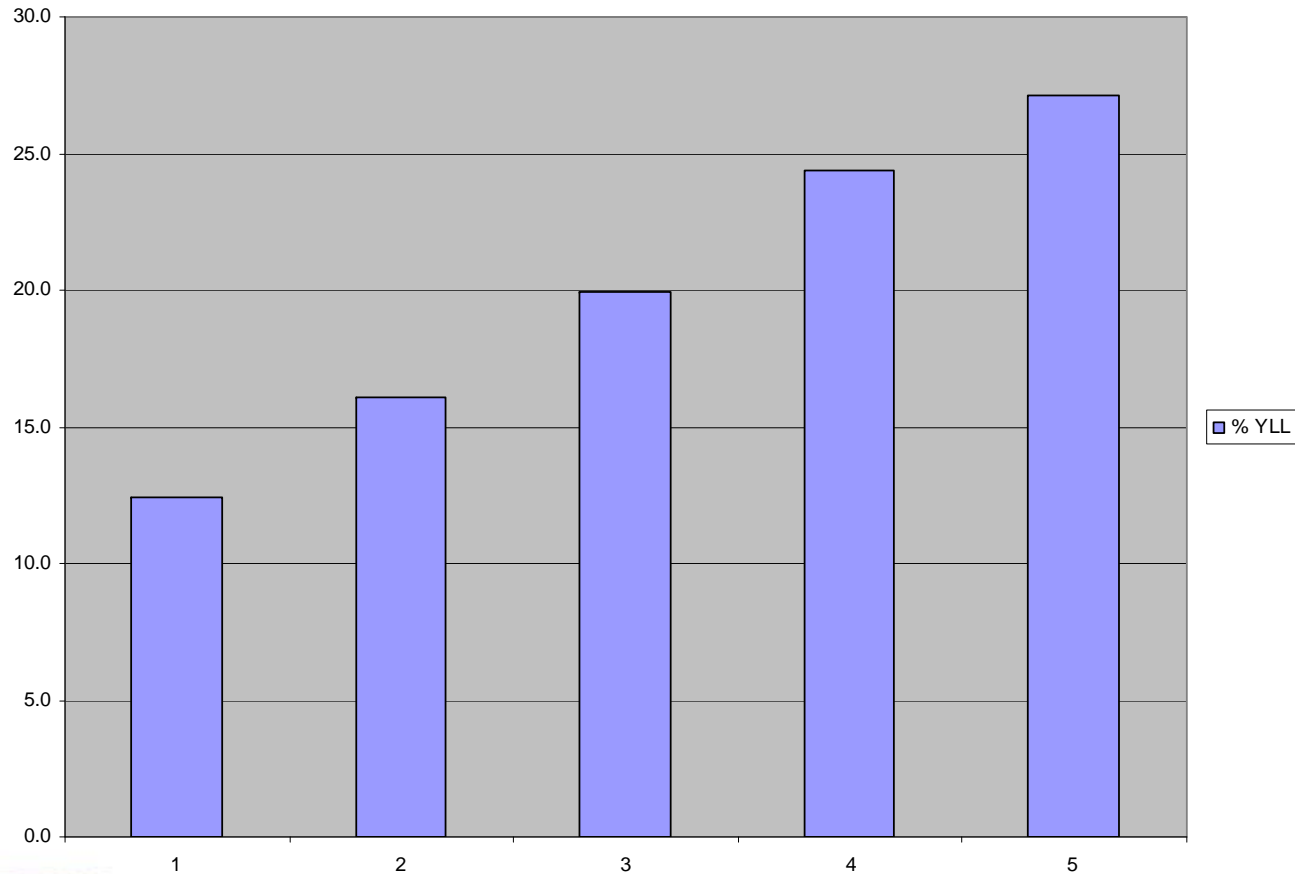
% YLL distribution by age group and gender Wales 2003-7



Wales 2003-7, YLLs by cause

Category	YLL%
Cutting/piercing	0.9
Drowning	4.0
Falls*	9.9
Firearms	0.5
Fires, hot object/substances	2.3
MVTC	23.3
Poisoning	20.7
Struck by/against	0.5
Other/unspecified*	37.8

Wales 2003-7, Injury YLLs % by deprivation fifth, 5=most deprived



Discussion

- Calculating population BOI is a complex activity
- Many assumptions and a variety of data required
- 1st effort in UK shows very significant burden and costs
- Many more analyses needed to refine burden by age group and cause categories to support prevention

Acknowledgements

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