

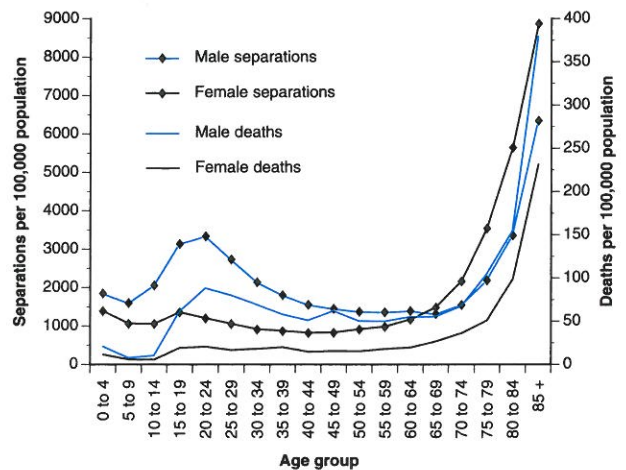
Injury among 15 to 29 year old males

Jerry Moller

Introduction

This Bulletin considers injury to young males. It uses available data to identify the frequency and broad nature of injury experienced by this group. We have studied data across the spectrum of death, hospital inpatient treatment and emergency department treatment in order to identify major areas where preventive action can be planned. From a public health point of view it is important to consider the relative contribution of both minor and more serious injuries to the health of the target group and to base prevention strategies on this broader understanding of the issues involved.

Figure 1: External causes (excluding medical misadventure) deaths (Australia 1993) and hospital separations (Australia except NT 1991/92): rates by age and sex



Why young males?

Comparison with other age and gender groups

Males in the 15 to 29 year age group experience high rates of injury mortality when compared with males of other ages and females in the same age range and across the age spectrum. (An exception to this is the high injury mortality rate experienced by the elderly.) In 1993 injury accounted for 73% of deaths among males age 15 to 29. Young male deaths accounted for 48% of the years of potential life lost as a result of injury among males.

The patterns of injury shown in Figure 1 suggest that the issue of young male injury is worthy of separate study and that it may be necessary to target specific prevention strategies at this risk group.

Elevated injury risk among young males is not confined to death. Hospital separations and emergency department attendances also show young males to be at higher risk than most other groups. They also reveal a far wider range of injury causes than is shown by death data and demonstrate the importance of the workplace and recreation activities, especially sports.

Table 1 shows that in the 15 to 29 year age group injury is very much a male phenomenon. Self inflicted injury is much more lethal among males than females and overall males experience four times the external cause death rate and almost three times the hospital separation rate compared to females. Aboriginals have higher overall rates of injury deaths than non-Aboriginals – for more detailed information refer to Australian Injury Prevention Bulletin No. 7 (1).

The growing awareness of men's health

There has been a growing awareness recently that men's health is an issue which requires specific attention. The main focus of the men's health movement has been on the diseases and disabilities of middle life and the premature mortality of men from heart disease and prostate cancer. Injury rates are higher for males than females at most age groups. This Bulletin shows that injury to young males is frequent and severe enough to be considered an important men's health issue. Injury is a significant cause of premature death and disability among men and is much more common among men than women. Injury is by far the most frequent cause of death among young males.

The literature on adolescents and young adults

The main stream literature, from the sociological, psychological and health disciplines, concerning adolescents and young adults, notes injury as being a frequent occurrence. Injury appears to be accepted without question as part of the process of growing up. There is very little literature on the epidemiology and prevention of injury in these age groups in Australia. The literature focuses on the psychological and social development of young people (2-4). In these discussions, mental health is a central theme and suicide and violence are considered in this context. Apart from these two issues, injury is rarely the direct focus of thorough and systematic analysis.

The road traffic sector has been the major source of literature on accidental injury among young persons (5-8). The road fatality rate among young people and in particular young males has been of great concern. Research has concentrated on risk taking behaviours, such as speeding, alcohol consumption and driving, failure to wear seat belts, and more recently on issues of the influences of age and experience on young driver risk. Road safety campaigns have specifically targeted these behaviours among young people.

Work related injury among young employees has also been noted as an area of concern (9-11). It is uncertain whether young workers are at higher risk of injury. Where higher rates have been reported, there has been considerable debate on whether these are due to exposure to different jobs, with entry level jobs carrying greater risks, inexperience with the tasks required, or risk taking by the young. The effects are certainly not consistent and do not apply to all occupations.

Sports injury has been the subject of attention in medical journals and in extensive sports medicine and sports psychology literature (12,13). Much of the focus has been on remedial aspects of injury with some consideration of how individuals can reduce the risk of injury by correct choice of equipment and proper training. The greatest attention has been paid to the elite athlete, with less specific attention being paid to the recreational pursuits of the mainstream young male who presents regularly to emergency departments with injuries.

A potentially important segment of the literature deals with the development of competence among young persons (14). While the literature does not focus specifically on injury, it attempts to develop an understanding of how young people learn to make successful decisions. Adolescents and young adults are confronted with a rapid expansion of areas where they make their own decisions. Successful decision making requires an analysis of the tasks to be done, an assessment of the skills needed, whether or not the individual has those skills, the level of risk associated with making errors and strategies for avoiding high cost errors. The literature also differentiates between incompetence – the inability to master the skills necessary – and inconsistency – the failure to use the skills on some occasions. This suggests that prevention strategies must take into account both the overall level of competence and the likelihood that choices which are inconsistent with competence will be made.

There is also an extensive debate about risk taking among young males (15). Some authors argue that risk taking is

Table 1: Major indicators of injury in 15 to 29 year old males and females

Deaths, Australia 1993					
<i>Indicator</i>	No. deaths		Rate (per 100,000)		M/F rate ratio
	Males	Females	Males	Females	
Total deaths from all causes	2218	752	106.5	37.2	2.9
External cause deaths (excl. medical misadventure)	1620	380	77.8	18.8	4.1
Non-intentional / intent unknown	1012	243	48.6	12.0	4.1
Self inflicted	545	93	26.1	4.6	5.7
Violence related	63	44	3.0	2.2	1.4

Hospital separations, Australia (except NT) 1991-1992					
<i>Indicator</i>	No. separations		Rate (per 100,000)		M/F rate ratio
	Males	Females	Males	Females	
Total separations from all causes*	291480	702385	14488.6	35448.9	0.4
External cause separations (excl. medical misadventure)	62561	24046	3147.6	1213.6	2.6
Non-intentional / intent unknown	52853	18629	2659.2	940.2	2.8
Self inflicted	2724	3383	137.1	170.7	0.8
Violence related	6984	2034	351.4	102.7	3.4

* includes NT; Source: Australian Institute of Health & Welfare

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necessary for learning but do not go on to consider what level of injury during learning is acceptable or whether learning strategies which minimise injury are possible. Other authors identify different styles of risk taking among sub-groups of young males. The literature overall is focussed on individual risk taking behaviours and patterns of peer and social environmental influence (16,17). It shows that low socioeconomic groups have higher rates of injury and have different patterns of risk behaviour. It is only in the most recent debate about men's health that there has been consideration of how risk taking behaviours among men are generated by the social milieu.

Injury countermeasures need to be planned which assist with the development of competence, and minimise the frequency and severity of injury during the learning process. These will include environment design, exposure control and educational strategies which take into account the need to develop skills and their consistent application.

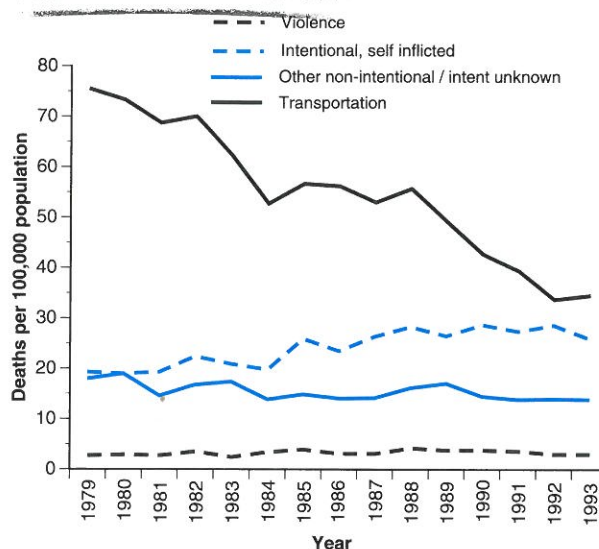
Injury Patterns

Injury patterns for death and hospitalisation are considered according to the major categories of the International Classification of Diseases (ICD) external causes classification (18). The data issues panel provides details of which external causes codes are included in each category. For example, the transport category includes both on and off road motor vehicles, pedestrians, cyclists and water transport (including water transport related drowning). By far the majority of cases in this category are related to on road motor vehicle crashes.

Deaths: Major Causes

Transport and suicide deaths account for almost 80% of injury related deaths to males in this age group (Table 2). A more detailed consideration of the data on motor vehicle transport related death shows that, in the older two age groups, the young male is more likely to die as a driver than a passenger. The highest rates are experienced by 20 to 24 year olds; death

Figure 2: Trends in external causes death rates for males 15-29 years, Australia 1979-1993



rates in this age group for poisoning, fire related, self inflicted and violence related injury are around double those of the 15 to 19 year age group. The older group (25 to 29) shows the commencement of a reduction in rates which is continued into middle adulthood.

Trends 1979-1993

Since 1979 only transportation deaths have decreased for 15 to 29 year old males (Figure 2). Other non-intentional and violence related death rates have remained remarkably stable. The other non-intentional group is however very diverse and there may have been improvements in some specific causes which are not reflected at the broad level.

Changing rates at different ages

It was noted earlier that the injury rate is not consistent across the three five-year age bands from 15 to 29. Figures 3a and 3b

Table 2: External causes (excluding medical misadventure) deaths: counts and rates for males aged 15 to 29 years, Australia 1993

Cause	No. deaths			Total	Rate (per 100,000)			Total
	15-19	20-24	25-29		15-19	20-24	25-29	
Transportation	223	298	198	719	33.5	40.5	29.0	34.5
Drowning	24	17	21	62	3.6	2.3	3.1	3.0
Poisoning, pharmaceuticals	7	20	40	67	1.1	2.7	5.9	3.2
Poisoning, other substances	7	8	6	21	1.1	1.1	0.9	1.0
Falls	4	13	14	31	0.6	1.8	2.1	1.5
Fires/flame/scalds	2	5	5	12	0.3	0.7	0.7	0.6
Other unintentional	21	25	35	81	3.2	3.4	5.1	3.9
Self inflicted	111	234	200	545	16.7	31.8	29.3	26.1
Violence related	10	25	28	63	1.5	3.4	4.1	3.0
Undetermined intent	3	10	6	19	0.5	1.4	0.9	0.9
Total	412	655	553	1620	61.9	89.0	80.9	77.8

Figure 3a: Annual average external causes death rates for males 15-29 years by single year of age, Australia 1990-1992

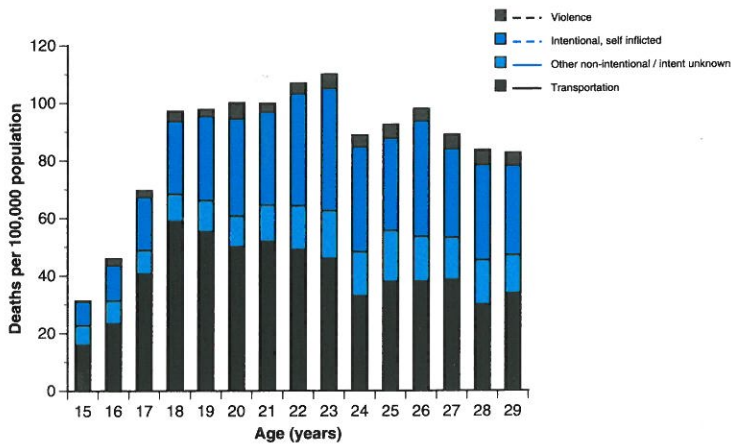


Figure 3b: Annual average external causes death rates for males 15-29 years by single year of age, Australia 1990-1992

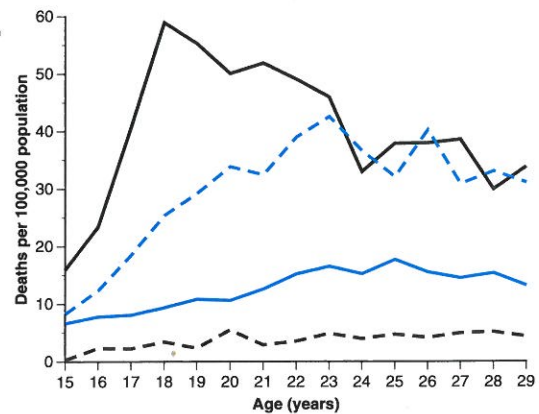


Table 3: External causes (excluding medical misadventure) hospital separations: counts and rates for males aged 15 to 29 years, Australia (except NT) 1991-92 financial year

Cause	No. separations			Total	Rate (per 100,000)			Total
	15-19	20-24	25-29	15-29	15-19	20-24	25-29	15-29
Transportation	5351	4933	3321	13605	806.2	738.2	506.6	684.5
Drowning	29	40	11	80	4.4	6.0	1.7	4.0
Poisoning, pharmaceuticals	585	749	656	1990	88.1	112.1	100.1	100.1
Poisoning, other substances	201	192	183	576	30.3	28.7	27.9	29.0
Falls	3001	2740	2386	8127	452.1	410.0	364.0	408.9
Fires/flame/scalds	322	380	299	1001	48.5	56.9	45.6	50.4
Other unintentional	8686	10010	8402	27098	1308.6	1498.0	1281.6	1363.4
Self inflicted	760	1063	901	2724	114.5	159.1	137.4	137.1
Violence related	1947	2884	2153	6984	293.3	431.6	328.4	351.4
Undetermined intent	105	143	128	376	15.8	21.4	19.5	18.9
Total	20987	23134	18440	62561	3161.9	3462.0	2812.8	3147.6

Note: rate calculations are based on Census 1991 populations. See Data issues.

show how rates vary by single year of age. Figure 3a represents cumulative figures as a stacked column chart which reflects overall changes. Death rates are much higher for 18 year olds than 15 year olds. There is a high plateau with a slight upward trend between 18 and 23 and the commencement of the establishment of the middle adulthood pattern starting at age 24. It must be remembered that this study considers a cross section and does not compare the rates of different cohorts at a particular age.

The major causes show differing patterns. The transport related death rate rises rapidly between 15 and 18. Suicide also climbs, but not quite so steeply and peaks among 23 year olds. The other non-intentional injury rate rises slowly and peaks at 25, while the violence related death rate increases slowly across the age range.

Different risks in different places

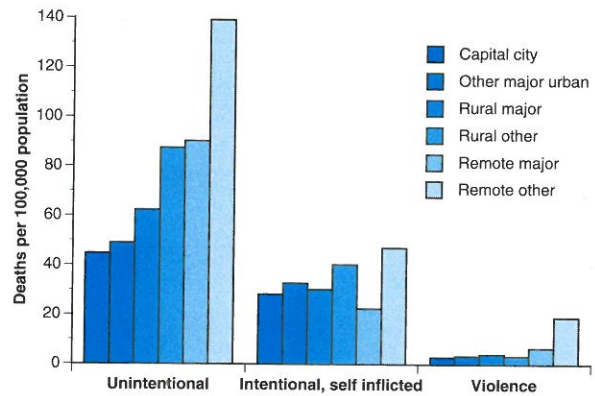
Injury death to young males is more likely to occur in rural and remote areas than in densely populated areas (Figure 4). This is consistent with a similar pattern for all age groups. The major component of the city-country differential in accidental injuries is transport. For further details see Australian Injury Prevention Bulletin 8 (19). Suicide rates for young males are higher in “rural other” and “remote other” areas but this is not the case for young females. Violence related death is more common in remote areas outside major centres.

Hospitalisations: Major Causes

Death is only one indicator of injury. Hospital separation data provide information about cases where inpatient hospital treatment was provided. There is some overlap between hospital separation data and deaths data as deaths occurring during hospital episodes are included in both data sets.

At the inpatient level, a different pattern emerges. While transport and suicide are still important, other accidental causes

Figure 4: Annual average external causes death rates for males 15-29 years by rural & remote area classification, Australia 1990-1992



including falls, and violence related injury can be seen as more prominent. Table 3 and Figures 5a and 5b show this in more detail. The pattern of transport related death is not simple. Australian Injury Prevention Bulletin 9 for example showed that among 20 to 24 year old males there were more admissions of motor cycle riders than motor vehicle drivers (20).

Changing rates at different ages

The differences between rates at each single year of age are not as marked as for deaths. The rise from 15 to 18 years is still apparent but not as steep as shown for deaths. The dominant feature of separations data is the importance of other non-intentional causes. A finer breakdown of external causes codes can provide a little more information but, the limitation of these codes still makes a clear understanding of the underlying patterns difficult. A review of emergency department data based on a different coding system is used to better understand the finer details.

Figure 5a: External causes hospital separation rates for males 15-29 years by single year of age, Australia (except NT) 1991-1992

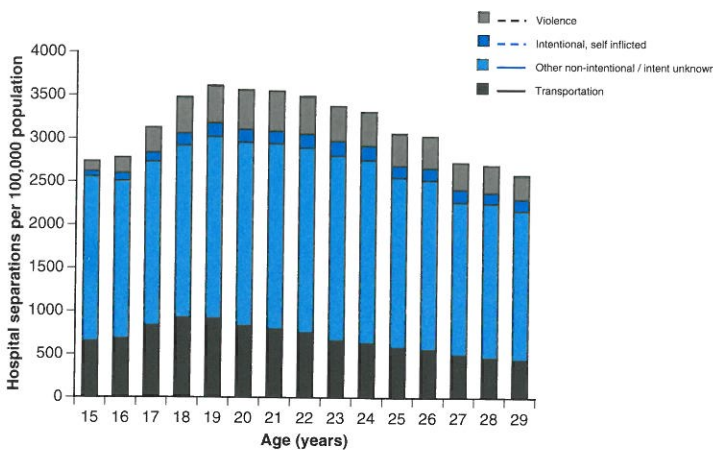
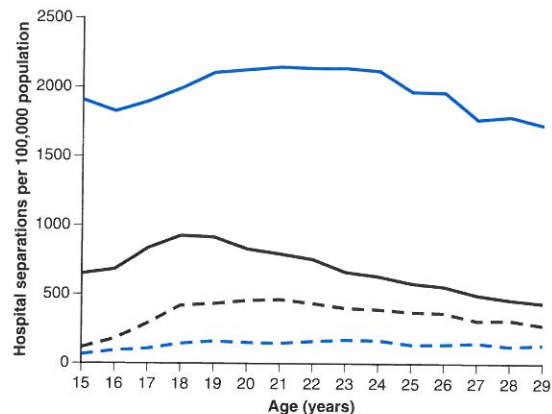


Figure 5b: External causes hospital separation rates for males 15-29 years by single year of age, Australia (except NT) 1991-1992



Emergency department treatments

Overview of data

Emergency department cases present another opportunity of examining injury patterns. NISU maintains a national data base of emergency department attendances (ISIS) contributed by a number of sentinel hospitals. For details of the scope and nature of this collection refer to the data issues panel. Once again there is overlap with hospital admissions as almost 11% of cases included in this data set were admitted to hospital. It must also be remembered that not all admissions for injury occur through the emergency departments. The emergency department data do not have a known relationship to any population therefore rates have not been calculated. Statistics for hospital separations and admissions from emergency departments are therefore not directly comparable.

Tables 4 to 7 include information about admissions included in the emergency department data. The number of cases and admissions decreases across the three age groups (Table 4), suggesting that the data may be biased toward reporting injuries in the youngest age group. This is likely to be due to over representation of children's hospitals among those contributing cases. This bias should be kept in mind. Overall the patterns of causes among admitted cases are very similar to those found in the separations data. The emergency department data therefore can be considered to be reasonably representative of Australian injury patterns.

ISIS data provides information on context of the injury, detailed place of occurrence, and whether injuries were work related.

Of all cases of 15 to 29 year old males presenting to emergency departments, 40% were aged 15 to 19, 35% were aged 20 to 24, and 25% were aged 25 to 29. The percentage of these cases admitted is relatively constant across the age groups.

Places where injury occurred

Table 5 shows injury patterns according to the place where the injury occurred. The first column represents the percentage of all presenting cases which occurred in each location. The second shows the percentage of admitted cases which occurred in each location. The third column shows the percentage of presenting cases which were admitted for each location.

Presenting injuries most commonly occurred in and around the home, followed by areas for organised sport, transport areas and areas of production or manufacturing. This demonstrates the importance of home, work and leisure in contributing to injury among young males.

Transport areas were the most common place of injury for admitted cases (26.5%) and show the highest likelihood of admission (17.8% of transport cases were admitted).

The context in which injury occurred

When the activity being undertaken is considered, the importance of sporting and leisure activities and work related activities is confirmed. Tables 6 and 7 use a similar format to that which appeared in Table 5.

Intent: Self harm

Overwhelmingly, the injuries presenting to emergency departments are not intentional. Intentional self harm (including attempted suicide and self mutilation) was reported for less than 2% of cases seen. More than 60% of the cases

identified as being due to self harm were admitted. This resulted in almost 8% of injury admissions from emergency departments being self harm. Overall, 33.6% of injury deaths, 3.9% of hospital separations and 1.4% of emergency department treatments were due to self harm.

There appears to be an inconsistency between emergency department and hospital separation data regarding the proportion of admissions reported as due to self harm. This could be due to: admissions for injuries other than self harm being admitted without passing through the emergency department (making the proportion of self harm cases in inpatient care lower than that reported for admissions through the emergency department); the emergency department collection being non-representative of self harm admission cases across Australia due to the bias in the participating hospitals; differences in the classification of cases between emergency department assessment and separation assessment; and differences in the criteria and coding systems for classifying a case as self harm. Differences in separations data between States, and within States for different self harm causes suggest that coding inconsistencies exist.

Examination of the detailed text description of emergency department cases shows that the notion of intentional self harm is a complex one. The data therefore should be viewed as an indicator of the problem rather than an accurate measurement. It can be concluded however that intentional self harm among young males is an important issue.

Assault

Violence represented only a small proportion of all injury deaths (4%) and a somewhat larger proportion of separations (11%). Of emergency department attendances 6% were violence related and of these cases 15% were admitted. Deaths data alone therefore are an insensitive indicator of violence related injury. When supplemented by hospital separation and emergency department data a significant problem is revealed.

Work related injury

Neither death nor hospital separations data allow work related injury to be identified. The emergency department data however can provide information on injuries which occurred while a person was working. Twenty one per cent of all emergency department presentations occurred during work related activities. Table 7 shows the distribution of occupations of injured males. The overall admission rate for work related injury (7.0%) is lower than that for all types of injury (10.8%). If we wish to consider the different patterns of risk for different occupations, there is a need to take account of the number of young males in those occupational groups. Because we do not know the characteristics of the population from which the cases were drawn this cannot be done directly. In order to make a crude estimate, data for 15 to 24 year old emergency department attendances was extracted and odds ratio calculations performed using 1991 Census data on the occupational distribution for this age group. Labourers and trades persons appeared to be over represented by up to 50%. (Women 15-29 experienced a much lower number of work related injuries.)

Table 4: Overview of ISIS emergency department presentations due to injuries among males aged 15 to 29

Age group	Cases presenting	Cases Treated	Cases admitted	% of presenting cases which were admitted	Ratio of male to female presenting cases
15-19	56978	46759	6216	10.9	2.5
20-24	49473	41299	5175	10.5	2.9
25-29	36131	30115	3968	11.0	3.0
Total	142582	118173	15359	10.8	2.7

Table 5: Place of injury occurrence for males aged 15 to 29 presenting to ISIS emergency departments

Location	Presentations (n=142582)	Admissions (n=15359)	Percentage of presentations admitted
	%	%	%
Private homes and residential institutions	21.4	22.6	11.4
Areas for organised sport	19.6	13.0	7.1
Transport and areas used by transportation	16.0	26.5	17.8
Areas of production or manufacturing	15.1	10.3	7.3
Other place	8.4	11.4	14.7
Areas of commerce	7.5	6.4	9.2
Educational institutions	5.0	3.0	6.4
Outdoor land based recreation areas	3.7	4.4	12.7
Public playgrounds	1.4	1.2	8.9
Outdoor water based recreation areas	1.4	1.1	8.5
Non-residential institutions	0.4	0.2	5.2
<i>All locations</i>	<i>100.0</i>	<i>100.0</i>	<i>10.8</i>

Table 6: Activity being undertaken when injury occurred for males aged 15 to 29 presenting to ISIS emergency departments

Activity being undertaken	Presentations (n=142582)	Admissions (n=15359)	Percentage of presentations admitted
	%	%	%
Pedestrian	1.6	2.4	15.6
Motorcyclist	3.1	6.8	23.9
Vehicle driver or passenger	4.9	10.2	22.6
Other transport related	3.4	4.8	15.4
Occupational	21.8	13.9	6.8
Sports	23.3	15.1	7.0
Leisure or recreation	17.0	16.6	10.5
Miscellaneous household activities	7.5	5.8	8.3
Maintenance	6.1	4.1	7.2
Personal activities	0.8	0.8	10.9
Fight riot quarrel	6.0	8.3	14.9
Intended self harm	1.4	7.9	61.1
Other	3.2	3.4	11.5
<i>All activities</i>	<i>100.0</i>	<i>100.0</i>	<i>10.8</i>

Table 7: Occupations of males aged 15 to 29 presenting to ISIS emergency departments with an injury which occurred while on duty at work

Occupation	Presentations (n=30169)	Admissions (n=2116)	Percentage of presentations admitted
	%	%	%
Managers and administrators	2.1	2.5	8.4
Professionals	1.3	0.7	3.7
Para-professionals	3.7	3.5	6.7
Trades persons	45.4	42.1	6.5
Clerks	0.9	0.7	5.3
Sales and personal service workers	3.4	3.4	6.9
Plant and machine operators and drivers	10.6	13.6	9.0
Labourers	32.6	33.6	7.2
All occupations	100.0	100.0	7.0

Major issues

Transport

Along with other age and gender groups, young males have experienced a reduction in transport related death rates over the years. Despite this, transport related injury rates remain high among young males. Transport related injury among young males can be seen as part of an elevation of injury risk across a wide range of causes. The pattern of elevated risk develops rapidly from the age of 15 and can be interpreted as part of a process of young males gaining increased independence and being exposed to new hazards. This process seems to differ from young females of the same age. There may be benefits in an approach to transport injury prevention among young males which takes into account the general patterns of increased risk of injury in this age group with the possible benefit of reducing both road injury and other injury rates in the target group.

Intentional injury

Suicide and attempted suicide among young males has been the subject of intensive analysis over the last two years (21,22). The information presented here emphasises the importance of this issue. From 23 years of age on, suicide vies with transport related accidental death as the major killer of young men.

A comparison of males and females which considers both hospital separations and deaths shows that a greater proportion of males die from self harm and that males are more likely to use more violent and more lethal means.

Self harm is rarely reported during childhood. A rise in frequency of self harm is seen among females three to five years younger than their male counterparts. As females mature earlier than males, this suggests that the risk of self harm may increase at a particular phase of development rather than at a specific age. The higher completed suicide rate among males is due to the use of more lethal means. Why this is so is a subject of continuing debate and requires further investigation.

There is a gradual but significant increase in injury from violence after the age of 16. Among 15 to 29 year old males, 11% of hospital separations are violence related. While this is low when compared with countries like the United States of America, it is sufficiently common to be a cause of concern.

Work related injury

Occupational health and safety has been a high priority for a number of years. Emergency department data suggest that injury to young workers is an important issue. Manual labouring jobs and the trades appear to be over represented and it must be asked whether particular strategies can be developed which would reduce injury among young males in these groups. When it is considered that these groups are likely to be over represented in other forms of injury, including transport and sporting injury, it may be necessary to develop approaches which cover injury both inside and outside the workplace for this target group.

Sports

It is not possible to accurately identify how many deaths occur as a result of sporting injury, although the number is thought to be very low. In contrast, the load placed on hospitals in providing both inpatient and outpatient services is considerable and it is likely that specialist medical, general practitioner and other health practitioner's services also receive heavy demand. Sports and recreational injuries are typified by frequent injuries of moderate severity with an unknown level of short and long term disability. As part of an overall strategy to develop better sports injury prevention, there will be a need to specifically target the needs of young males.

From reading the descriptions of the injury events leading to emergency department treatment, it is apparent that the majority of the events are not related to elite levels of sport and that the standards of playing surface, levels of fitness and the rules of the game have a strong influence on the patterns of injury. Prevention strategies for the average weekend player are essential if significant reductions to young males sports injury are to be achieved.

The state of play

Data and research

Data capable of identifying the scope of major issues are available. The data may also be used to identify causes in a more detailed manner but do not meet the needs of those who wish to undertake the detailed analysis necessary for planning prevention. There is a need to overcome this through more detailed surveillance and by specific research studies.

There is only a limited understanding of why young men injure themselves so frequently and so severely. The analyses in this Bulletin are based on a cross sectional approach. Little is known about cohort effects and cohort studies are needed to determine whether the emerging generation of young males have similar or different patterns of injury compared with previous cohorts.

Preventive strategies

There is little in the way of sound analysis to determine whether there are common factors which influence all or many of the types of injury suffered and even less about

whether an approach to injury prevention targeted across causes at young males would be beneficial. It is apparent that as some young men develop, exposures to new hazards come more rapidly than the skills to manage them. The men's health movement suggests that socialisation contributes to many health problems and is a fertile ground for attention. Success with transport related death rates gives credence to environmental and mass education strategies. There is however no systematic way of transferring what is learnt in one area to another. Injury to young males needs to be considered as a whole and then it can be determined what mix of strategies targeted at specific causes and what overlay focussing on the whole issue is required.

Young people are not an easily accessible group. Young adulthood is a period of transition. Unlike children who can be accessed through child health services or schools and adults who can be accessed via the workplace, young people have many and varied affiliations. It is likely that those of highest risk of injury are also the hardest to reach. This presents a challenge for policy makers.

Data issues

1. Deaths

Deaths data are from the Australian Bureau of Statistics (ABS) mortality unit record data collection. Detailed causes information is based on the most recent deaths data: deaths registered in 1993. Single year of age analysis is based on deaths registered between 1990 and 1992 to increase the number of cases in each category (for a single year of age). Rates for these years are calculated using 1991 Census single year populations.

2. Hospital separations

NISU has been provided by the States with hospitalisation data for 1991-92 and 1992-93. These data cover hospital separations where an external cause code was allocated. They are collected according to definitions included in the National Health Data Dictionary by each State and Territory. Data for the Northern Territory were not available. To maintain maximum comparability between single year of age analyses based on deaths data and hospital separations data, we used 1991-92 hospital separations data. Hospital separation rate calculations are based on 1991 Census populations. (NISU usually uses 1991-92 mid year populations for rate calculations on broad age groups. The rates presented in this Bulletin will not therefore exactly match other data released by NISU and will tend to be slightly higher.)

3. Emergency department presentations

Emergency department data have been provided to NISU from approximately 50 participating hospitals during the period 1986 to 1994. They are based on information volunteered by persons attending the emergency departments of those hospitals, and treating doctors. The database contains in excess of half a million records. The cases included do not represent a probability sample of emergency department cases and therefore the pattern of injury among cases attending these hospitals is not necessarily representative of all injuries in Australia.

4. ICD9 External cause code aggregations

NISU statistical publications make use of standard aggregations of the ICD9 External cause (E-code) classification. The E-code ranges for the major causes of injury are shown in the table below.

Cause of injury	ICD9 E-Codes
Transportation	800-848
Drowning	910
Poisoning by drugs, etc.	850-858
Poisoning by other substances	860-869
Falls	880-888
Fires/burns/scalds	890-899, 924/.0, .8, .9
Other unintentional	900-909, 911-923, 924/.1, 925-929
Intentional, self inflicted	950-959
Intentional, inflicted by another	960-978, 990-999
Undetermined intent.	980-989
Medical misadventure, etc.	870-879, 930-949

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Communications

Inquires, comments and letters to the Editor are welcome. Please address these to:

John Dolinis (Editor)

National Injury Surveillance Unit,

Mark Oliphant Building,

Laffer Drive, Bedford Park, South Australia 5042.

Phone: (08) 3740970 Fax: (08) 2017602 Email: John.Dolinis@nisu.flinders.edu.au

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The primary purpose for the service is to provide electronic access to NISU's published reports, periodicals, etc. Already, a substantial number of items from our current Directory of Products are available on-line (including complete versions of our two recent data reports on Australian injury deaths). In future, we hope to release publications on the Web and in print simultaneously.

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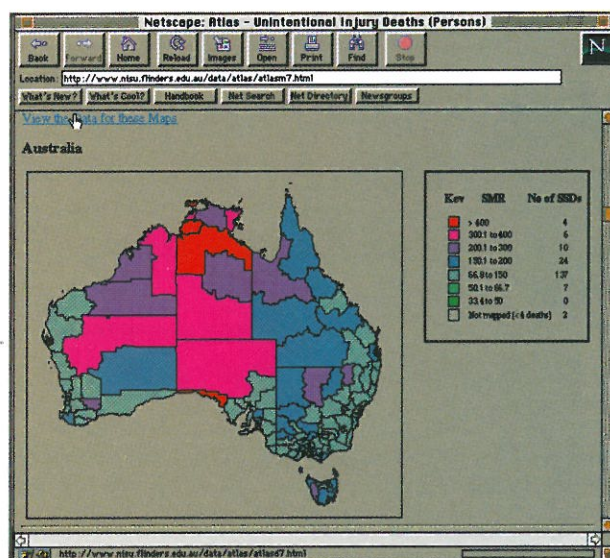
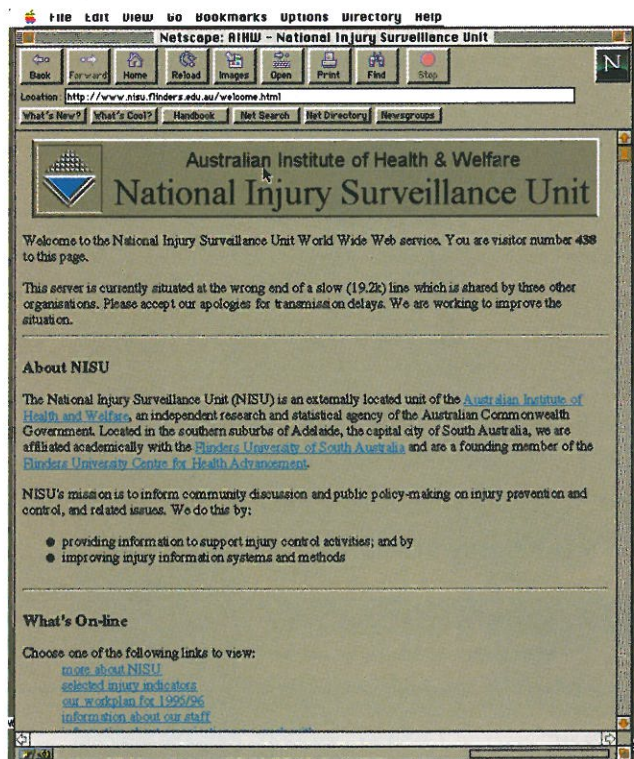
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