

**MORTALITY, MORBIDITY & HEALTH CARE COSTS
OF INJURY IN THE NORTHERN TERRITORY, 1991-2001**

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Executive Summary

In Australia, injury is a leading cause of mortality and permanent disability, including the principal cause of death in people under 45 years of age. Throughout the 1990s, injury was annually responsible for more than 7000 deaths, 400,000 hospitalisations and direct medical costs of \$2.6 billion according to estimates by the National Health and Medical Research Council.¹ For the Northern Territory previous reports have recorded injury rates that are generally higher than those in other Australian states. The starkest indicator of injury is that of the injury death rate which for the Northern Territory (NT) has been previously reported for 1997, as 88 deaths per 100,000 of population which was more than twice the national rate of 41 deaths per 100,000.

This report is the first full report on injury in the NT and provides a comprehensive summary of injury across the dimensions of mortality, public hospital admissions, presentations in Emergency Departments and importantly in the NT, interstate hospital transfers for the treatment of injury. The report also provides estimates for the health care costs of injury in the Northern Territory.

Mortality

During the ten-year period from 1991 to 2000 there was a total of 1400 deaths in the Northern Territory as a result of injury, of which 1278 deaths were of NT residents. There were also an additional 73 NT residents who died interstate. The leading causes of injury related death were transportation (37%), suicide (22%) and violence (12%).

The crude death rate from injury for NT residents who died in the NT was 71 per 100,000, compared to the crude national rate of 42 per 100,000. This difference in these rates is not explained by the younger age structure in the NT, and on the contrary after adjustment for the low proportion of older people in the Northern Territory, the age-standardised rate of death for the NT increases to 78 per 100,000 compared to the adjusted Australian rate of 41 per 100,000.

Across the ten years of data there has been some changes in the annual mortality rate by injury cause. Most notably there is evidence of a decline in the annual age-standardised rates for death from transportation and violence while by contrast the trend in the annual rates for suicide have been increasing. Within the NT population there are recognised populations at greatest risk of injury, most notably;

- NT males died from injury at twice the rate of females
- NT Aboriginal male and females died at 3 to 5 times the comparative rate of the NT non-Aboriginal population. This ratio has been improving over the years of data.
- The number of deaths in the NT by age group peaks in those aged from 25 to 29 years, while the age group with the highest rate of injury was in those Territorians aged 70 and over.

Hospital Admissions

Over the ten-year period from 1992 to 2001, there was a total of 44,278 admissions to NT public hospitals as a result of injury. In contrast to the high NT mortality rates from injury, the age-standardised rate of NT hospital admissions is only slightly higher at 2551 per 100,000 population than comparable national hospital admission rates resulting from injury. During the ten-year period there was an upward trend in the age standardised rates of NT hospital admissions, which was driven by the increasing rate of admission of the Aboriginal population. Within the NT population those groups at greatest risk of hospital admission were similar to those groups at greatest risk of death;

- The Aboriginal male rate of hospital admission was twice, and the Aboriginal female rate three times the comparable rates of hospital admission of the non-Aboriginal populations.
- In the general NT population the greatest number of admissions were for those Territorians aged from 25 to 29 years.
- The age-specific rates of admission were greatest for Aboriginal people aged between 30 and 39, and for non-Aboriginal people aged 70 years and over.

There was significant variation in the more common injury mechanisms resulting in hospital admission for the different NT populations. For NT non-Aboriginal males the three most common mechanisms were transportation, falls and injury from inanimate objects and for non-Aboriginal women the most common mechanisms of injury were falls, transportation and medical complications. For Aboriginal Territorians the common mechanisms of injury leading to hospitalisation for men were violence, falls and transport injuries, and for women violence, falls and medical complications.

The rate of admission for Aboriginal males as a result of violence was 1627 admissions per 100,000 population and for Aboriginal women 1829 per 100,000, which were respectively 13.5 times and 40 times greater than the rate for the comparable non-Aboriginal populations. Most other injury mechanisms were also higher for the Aboriginal populations with rates from 1.6 to 3.3 times the non-Aboriginal rates.

The injury mechanisms with above average 'length of stay' in hospital as a result of injury were fire/burns transport accidents, medical complications and falls. The length of stay for any particular mechanism of injury generally increased with age with the exception of fire/burns in children.

In the five years from 1996/97 to 2000/01 there were a total of 1352 NT residents transferred interstate for hospital treatment as a result of injury. The most common injury mechanisms resulting in transfer were medical complications (24%), violence (13%) and transportation (13%).

Emergency Department Presentations

In each of the years from 1998 to 2001 there was approximately 30,000 presentations to NT public hospital emergency departments (ED) for the treatment of injuries. This was approximately 28% of all ED presentations for that period. There were differing age distributions for the non-Aboriginal and Aboriginal populations. For the non-Aboriginal population there was comparatively modest variation between age groups but with a peak in the 15 to 19 year olds.

By comparison there are lower age-specific rates of admission for Aboriginal children and then a substantial increase through early adulthood to a peak in the 30 to 34 years age group. The most common injury types for ED presentations during the four-year of data were open wounds (38%) dislocation/sprains/strains (22%) and fractures (14%).

NT Health Care Costs

The health care costs of the treatment of injury to the NT Department of Health and Community Services has been estimated for NT public hospital admissions, interstate hospital admissions following interstate transfer and for treatment in Emergency Departments. Key features of these estimated costs are:

- For the ten years of NT public hospital data there was a total of \$122.4 million spent on injury related admissions at an average cost of \$2,764 per admission.
- The most expensive injury related admissions were those associated with fire/burns and transport injuries.
- The cost of interstate transfers as a result of injury has increased over the five-year period of data from \$0.7 million in 1996/97 to \$2.1 million in 2000/01. The total cost for interstate hospital treatment was \$7.3 million, which was 11% of all interstate hospital transfer costs.
- The cost of ED treatment was stable for the four years of data from 1998 to 2001, and was approximately \$4.5 million, which was 35% of the total annual ED costs in NT public hospitals.
- The estimated annual average cost for treatment of injury for the four years to 2001, to the NT health department was \$19.7 million.

Conclusion

Injuries are a significant health burden for Australia, but an even greater burden for the NT, which has both substantially higher mortality rates than other Australian states and increasing rates of hospital treatment. There is clear opportunity for substantial improvement in the management of injury in the NT, across a group of conditions that have avoidable causes. However, the report not only highlights the high rates of injury in the NT, but also demonstrates areas in which there has already been a significant improvement, most notably in injury that results from transport accidents. While the causes of transport injuries are complex and the policy responsibility for interventions span multiple agencies in both the NT and Australian governments, the continuing improvements in this area demonstrate the benefit of a comprehensive approach to injury management and provides a template for parallel actions to improve the health outcomes for other injury mechanisms in the NT.

Chapter 1: Introduction

1.1 Aim

Nationally, injury is the principal cause of death in people under 45 years of age, and across all ages are a leading cause of mortality, morbidity and permanent disability and a major source of health care costs.² The importance of injury in Australia is now well recognised and injury is one of five National Health Priority Areas.³

In 1997, the Northern Territory (NT) was reported as having an injury related mortality rate of 88 per 100,000, which was the highest in Australia and more than twice the national rate (41 per 100,000 population), and far greater than the second highest rate recorded for Queensland (47 per 100,000).⁴ However by contrast, there was not a similar scale of difference for hospital admissions. The NT hospital admission rate for injury in 1998-1999 (2421 injuries per 100,000) was only slightly higher than the national average (2160 per 100,000) and second after Queensland (2584 per 100,000).⁵

Information on injury in the Northern Territory has been reported in previous Department of Health and Community Services reports.^{6,7} However this is the first comprehensive report of injury in the Northern Territory and includes both an epidemiological analysis of mortality and morbidity, as well as detail of the health care costs resulting from injury. The report is written to inform policy and programs for the prevention of injury in the Northern Territory.

1.2 Methodology

1.2.1 Data Sources and Limitations

Population Data

The Australian Bureau of Statistics (ABS) population data for Australia and the NT was used for the calculation of crude morbidity and mortality rates. The NT estimated resident populations (ERP) by age, sex and indigenous status for 1991-2000 were based on ABS mid-year final data (30 June of each year). The 2001 population estimate was based on "revised" ABS data and the 2002 ERP was based on "preliminary" ABS data.⁸ The 1991 ABS national standard population age structure was used for the calculation of NT age-standardised rates using direct standardisation.

Mortality Data

Mortality data in this report covers the period from 1991 to 2000 and was collated from the ABS death data set. This data is initially collected by the Registrars of Births, Deaths and Marriages in each state and territory, and is then forwarded to the ABS where it is coded according to the cause of death. The International Classification of Diseases Ninth Revision (ICD-9) was used for coding up to and including 1996, before replacement by the International Classification of Diseases Tenth Revision (ICD-10), which was used from 1st January 1997. Unlike the ICD-9 code, the ICD-10 code allows multiple causes of death to be recorded. In this study, deaths due to injury were reported on the basis of principal cause of death.

There are a number of limitations in the analysis of the mortality data.

- (1) The introduction of ICD-10 in 1997 has led to some artefactual variation in disease specific mortality rates between those years classified using ICD-9 and those years classified by ICD-10. The extent of this variation has been calculated by McKenzie et al, who have reported that at a Chapter level for "external causes", there was a 95% concordance between ICD-9 and ICD-10.⁹
- (2) For each death, the ABS records both the date of death and the date of registration of death. In this study, analysis was conducted based on the date (year) of death. Due to delays in some death registrations the NT mortality data for the year 2000 was incomplete, by an estimated 0.3% at the time of writing.
- (3) There is a high proportion of non-residents in the NT which has an affect on the comparative rates of injury between different conditions. In order to provide a consistent numerator across all conditions, mortality rates have been calculated on the basis of deaths of NT residents, which occurred in the NT. During the period, 1991-2000 there were 79 non-residents deaths in the NT, which is 8.7% of all injury related deaths in the NT.
- (4) NT residents injured in the NT, who are then transferred to interstate hospitals and subsequently die, are not included in the mortality statistics. The number of these deaths is not available.

The mortality data was analysed by 'injury mechanism'.

NT Public Hospital Admission Data

A new NT public hospital data system was introduced in 1992, with storage of all subsequent NT public hospital morbidity data on a central departmental data warehouse. This report utilises this data, and covers the ten-year period from 1992 to 2001.

Injury-related cases involving NT residents were identified according to the following criteria;

- A. Any principal diagnosis in the range of 800-999 in ICD-9 (Chapter 17), where the first E codes related to injury, or
- B. Any principal diagnosis in the range of S00-T98 in ICD-10 (Chapter 21), where the first external causes related to injury.

This resulted in the identification of 44,363 injury-related admissions during the ten-year period from 1992 to 2001, including same day and overnight admissions. Of these 44,363 admissions, there were 85 admissions due to injury that did not have an E code in the associated diagnostic fields, and so were not able to be classified by injury mechanism and were not included in the analysis (0.2% of 44,363).

'Injury type' was analysed using the principal diagnostic code where ICD-9 or ICD-10 codes were coded (see Appendix Table A3).

The authors recognise the following additional limitations in the hospital admission data.

- (1) NT public hospitals switched from using ICD-9 to ICD-10 in the NT hospital admission data from the 1998-99 financial year. This report has used both forward and backward mapping between ICD-9 and ICD-10 to allow analysis of trends in the hospital admission data over the ten-year period. The extent of concordance in the diagnosis of injury between ICD-9 and ICD-10, in hospital admission data has not been reported, but is anticipated to be similar to the 95% concordance reported by McKenzie et al in their assessment of mortality data.⁹

- (2) Patients seeking treatment in Darwin Private Hospital were excluded from the study due to the difficulty of obtaining private hospital morbidity data. These numbers are likely to be small as there is only a single non-public hospital in the NT, and injury patients are selectively referred to the emergency department of the co-located public hospital.
- (3) The identification of 'NT resident' status in the NT public hospital dataset was assessed by Condon et al in 1997, at which time it was reported that 2% of hospital records were incorrectly recorded as interstate or overseas, instead of NT resident and 14% were incorrectly recorded as being NT residents instead of interstate or overseas residents.¹⁰

Interstate Hospital Transfer Data

The Interstate Hospital Transfer data used in this report was available for the financial years 1996/97 to 2000/01. Most Australian states and the Australian Capital Territory (ACT) provide annual data to the DHCS data warehouse on those NT residents who have been injured in the NT and then transferred for treatment in interstate hospitals. As the format of interstate datasets differ, the data was aligned with NT reporting standards for the purpose of this study.

The data on NT residents who were transferred interstate for treatment of injuries are included in the analysis of morbidity and cost, but as mentioned above were not available for the analysis of mortality.

A limitation of the interstate transfer data was that there was no information available for those NT residents who were transferred for treatment in Queensland. Of the total of all interstate hospital transfers of NT residents, 14% were referred to Queensland. The proportion of injury related transfers is not available.

Hospital Emergency Department Presentation Data

The Hospital Emergency Department (ED) presentation data used in the report covers the four calendar years from 1998 to 2001. The data was analysed for the five NT public hospitals which are located at Nhulunbuy, Darwin, Katherine, Tennant Creek and Alice Springs. Data were not available from the Emergency Department located at Darwin Private Hospital, though this was assessed as being a small proportion of the total NT presentations.

There are a number of limitations in the ED data.

- (1) 'Injured body part' was either not specified or not defined as other part of injury (eg. multiple injury and foreign body) for 17% of injury cases in ED injury presentations.
- (2) 'Injury type' was not recorded for 12% of ED injury presentations.
- (3) 'Injury mechanism' could not be analysed in ED presentation data as ICD codes were not applied in this data during the study period.

Analysis of the ED data was undertaken using 'injury type'. Data were coded with ED injury type codes using NT ED codes (see Appendix Table A3).

A limitation of the injury coding system is that the coding for "injury type" in hospital inpatient data, is different to the NT coding system used for ED presentation data. Some categories of injury classification were unable to be fully matched from one classification system to another (see Appendix Table A3).

NT Public Hospital Admission Costs

Public hospital admission data for the NT was used to derive the relevant public hospital admission costs in conjunction with the DHCS hospital funding model, Generation 5. This is an output-based funding model, and consists of three part payments, the activity payment, fixed payment and transitional payment.¹¹ The activity payment is determined by the volume of the hospital activities and by the severities of the diseases treated, Diagnostic Related Groups (DRG). Each year, the unit price is negotiated between the NT Treasury and DHCS. This study utilised the Generation 5 model, which analysed the data over the whole study period and carried out trend analysis of injury costs incurred in the hospitals.

ED Presentation Costs

ED presentation costs were determined using the number of ED presentations (from the NT public hospital ED data) and the 1998 national ED average unit costs. These costs varied according to the admitted and non-admitted triage classification system.¹²

As injuries classified by injury mechanism were not recorded for ED presentations, cost by injury mechanism is underestimated in this report.

Interstate Hospital Transfer Costs

The costs to the NT of interstate hospital costs were based on bilateral five-year Cross-border Agreements between the NT and the other states or territory, which utilises the Casemix cost of each jurisdiction. These costs were estimated by a "provisional payment" (which related to data of two years' prior) and an "adjusted payment" (balance of the payment made in the previous year to account for the actual expenditure for that year). The detail methodology is described in a separate departmental report.¹³

1.2.2 Classification of Causes of Death and Injury

Causes of Death

Causes of death were aligned to major diagnostic categories by using the principal diagnosis code reported in ABS death data. This report examines the more common diagnostic categories of death which are; diseases of the circulatory system, injury, neoplasm, respiratory system, 'endocrine, nutrition and metabolic diseases and immunity disorders', digestive system, perinatal period, genitourinary, infectious, mental disorder, 'nervous system & sense organs', 'blood & blood forming organs', 'skin & subcutaneous tissue', and 'pregnancy, childbirth & puerperium'. All other causes of death were grouped as 'other' (see Appendix Table A1).

Injury Mechanism

An injury mechanism is defined as the external object or circumstance that caused the injury, such as a motor vehicle accident. It is represented by an E code in the International Classification of Diseases, Ninth Revision (ICD-9) and by V, W, X and Y codes in the International Classification of Diseases, Tenth Revision (ICD-10) (see Appendix Table A2).

The following Injury Mechanism categories were analysed for this report:

- ◆ Interpersonal Violence (Violence)
- ◆ Suicide/Attempted Suicide
- ◆ Inanimate Mechanic Forces (Inanimate Forces)
- ◆ Falls
- ◆ Fire/Burns
- ◆ Complications of Medical & Surgical Care (Medical Complication),
- ◆ Transport Accident (Transportation), including Motor Vehicle Accident and Other Transport Accident
- ◆ Natural Environmental Factors (Natural Environment)
- ◆ Poisoning
- ◆ Submersion /Suffocation/Foreign Body (Submersion/Suffocation)*

Six of the injury mechanism category names were shortened for this report, as shown in brackets above. 'Motor vehicle accident' and 'other transport accident' were combined and reported as 'transportation'. Also, other intentional injury, sports accident, other unintentional accident and other (other undetermined intentional or unintentional injury) were combined and reported as 'other' injury mechanism.

Injuries, which were determined clinically to be intentionally self-inflicted, were classified under suicide and attempted suicide whilst injuries intentionally inflicted on one person by another were classified as interpersonal violence. In this report, interpersonal violence did not include legal intervention and war operation, however these were included in other studies produced on a national basis.

Injury Type

Hospital admission data and ED presentation data were analysed by the variable 'injury type'. For hospital admission data, this variable had 15 categories and was coded using ICD codes. For data using ICD-10 codes (data from 1999) an ICD code mapping table was applied, backward mapping ICD-10 codes to ICD-9 codes. For ED Presentation data the variable had 17 categories and was coded using NT ED codes. The classifications and codes used for the analysis are provided in Appendix Table A3.

* Drowning is included in this category.

Chapter 2: Deaths due to Injury (1991-2000)

2.1 Number of Injury Related Deaths

During the ten-year period from 1991 to 2000, there were 1400 deaths in the Northern Territory, which were directly attributable to injury (Table 2.1). Of these 1400 deaths, 1278 were of NT residents and 122 were non-NT residents. In addition there were 73 deaths of NT residents while they were interstate. The three most common mechanisms of injury related deaths occurring in the NT were Transportation (471), Suicide (279) and Violence (159).

Table 2.1: Number of deaths due to injury by injury mechanism, type of resident and place of death, Northern Territory 1991-2000

| Injury Mechanism | Number of Deaths due to Injury in NT | | | NT Residents Died Interstate |
|-------------------------|--------------------------------------|-----------------------------|--------------------|------------------------------|
| | NT Residents Died in NT | Non-NT residents Died in NT | Total Deaths in NT | |
| Transportation | 471 | 79 | 550 | 34 |
| Suicide | 279 | 5 | 284 | 11 |
| Violence | 159 | 3 | 162 | 8 |
| Submersion /Suffocation | 117 | 11 | 128 | 4 |
| Falls | 64 | 7 | 71 | 2 |
| Poisoning | 50 | 7 | 57 | 0 |
| Natural Environment | 33 | 2 | 35 | 2 |
| Fire /Burns | 27 | 1 | 28 | 6 |
| Inanimate Forces | 25 | 2 | 27 | 3 |
| Medical Complication | 7 | 1 | 8 | 1 |
| Other | 46 | 4 | 50 | 2 |
| <i>Total</i> | <i>1278</i> | <i>122</i> | <i>1400</i> | <i>73</i> |

- Table 2.1 includes all injury related deaths that have occurred in the NT as well as the deaths of NT residents who died interstate. The remainder of this chapter analyses the death data for NT residents who died in the NT. Non-NT residents who died in the NT, and NT residents who died when interstate are not included in the calculation of rates.

2.2 Comparative Rates for Injury Related Deaths

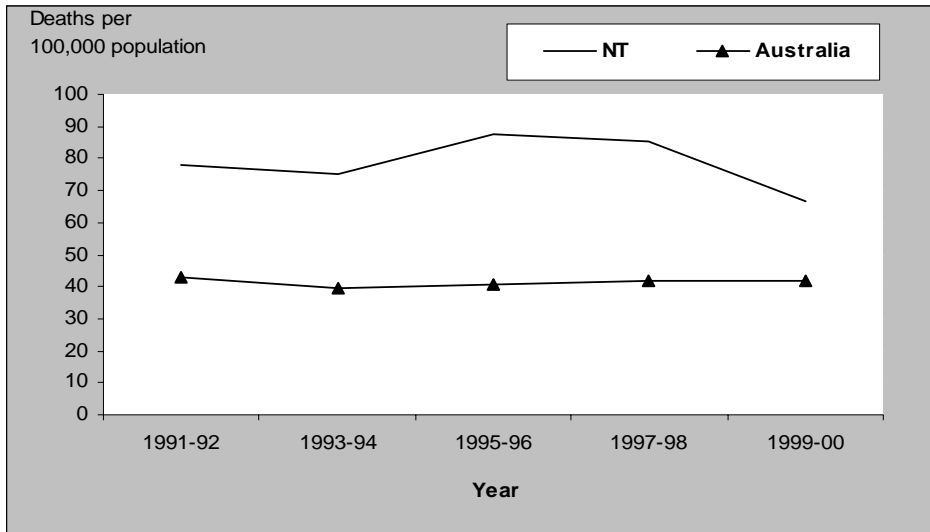
Table 2.2: Number of deaths and age-standardised death rate due to injury by sex and indigenous status, Northern Territory and Australia, 1991-2000

| Number and Rate of Death due to Injury | | Male | | | Female | | | All Persons | | |
|--|-----------------------------|------------|----------------|------------|------------|----------------|--------------|-------------|----------------|-------|
| | | Aboriginal | Non-Aboriginal | Male Total | Aboriginal | Non-Aboriginal | Female Total | Aboriginal | Non-Aboriginal | Total |
| NT | Number of | 394 | 572 | 966 | 176 | 136 | 312 | 570 | 708 | 1278 |
| | Crude Death Rate | 154 | 83 | 102 | 69 | 23 | 36 | 111 | 55 | 71 |
| | Age-standardised Death Rate | 185 | 87 | 107 | 92 | 29 | 45 | 138 | 60 | 78 |
| Australia | Crude Death Rate | | | 59 | | | 25 | | | 42 |
| | Age-standardised Death Rate | | | 60 | | | 23 | | | 41 |

Notes: (1) All rates in this table refer to deaths per 100,000 population
 (2) Full details of deaths are provided in Appendix Table A4-A8

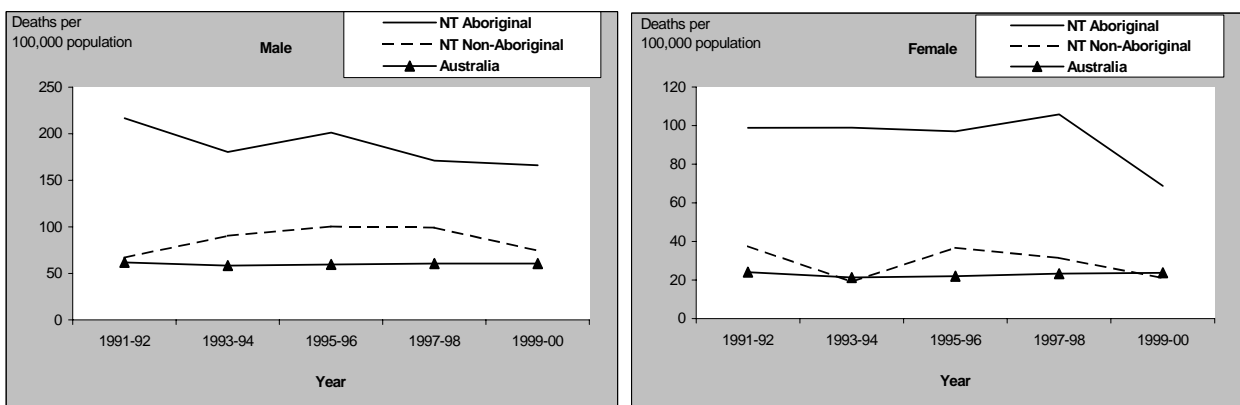
- There were 1278 injury related deaths of NT residents in the NT, of which 76% occurred in males. Of the total 55% of deaths were in the non-Aboriginal NT population.
- Over the ten years of data, the NT crude death rate of 71 deaths per 100,000 population was nearly twice the Australian rate of 42 deaths per 100,000 population, for the same period. Over that period the injury related crude death rate for the NT Aboriginal population was 2.6 times, and the non-Aboriginal rate 1.3 times the national rate.
- NT males died at more than 2 times the rate of NT females, and NT Aboriginal males died at more than 2 times and NT Aboriginal females at more than the 3 times the rate of NT non-Aboriginal males and females respectively.
- Age standardisation of deaths rates adjusts for differing age structures of populations and allows more accurate comparisons. The effect in the younger NT population is an increase from the observed (crude) death rate of 71 deaths per 100,000 population to the age-standardised death rate for the NT of 78 per 100,000. This can be compared to the Australian age-standardised rate of 41 per 100,000. The effect of the increase in the age-standardised rate is much greater for the NT Aboriginal population, which has an age-standardised death rate 3.4 times greater than the comparable Australian rate.

Figure 2.1: Age-standardised death rate due to injury, Northern Territory (by indigenous status) and Australia 1991-2000



- During the five, two-year periods from 1991-92 to 1999-2000 there is a suggestion of recent decline in the rate of injury-related deaths in the NT.
- The national rates of death due to injury were stable over the ten years of data.

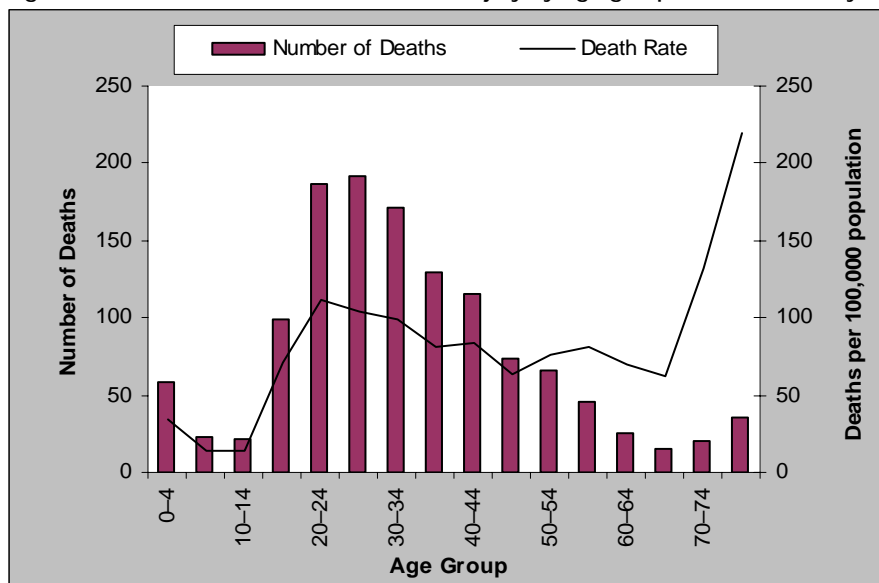
Figure 2.2: Age-standardised death rate due to injury by sex, Northern Territory (by indigenous status) and Australia 1991-2000



- Fig 2.2 highlights that Aboriginal male and female rates of death due to injury have been in the order of 3 to 5 times higher than the corresponding national rates, however these appear to have decreased over the study period.
- The NT non-Aboriginal and national rates of death, have remained stable through the ten years of data, for both males and females.
- For the two-year period of 1999 and 2000, the comparative ratio of deaths due to injury for the Aboriginal and non-Aboriginal NT populations was 2.2 for males and 3.3 for females.

2.3 Death due to Injury by Age Group

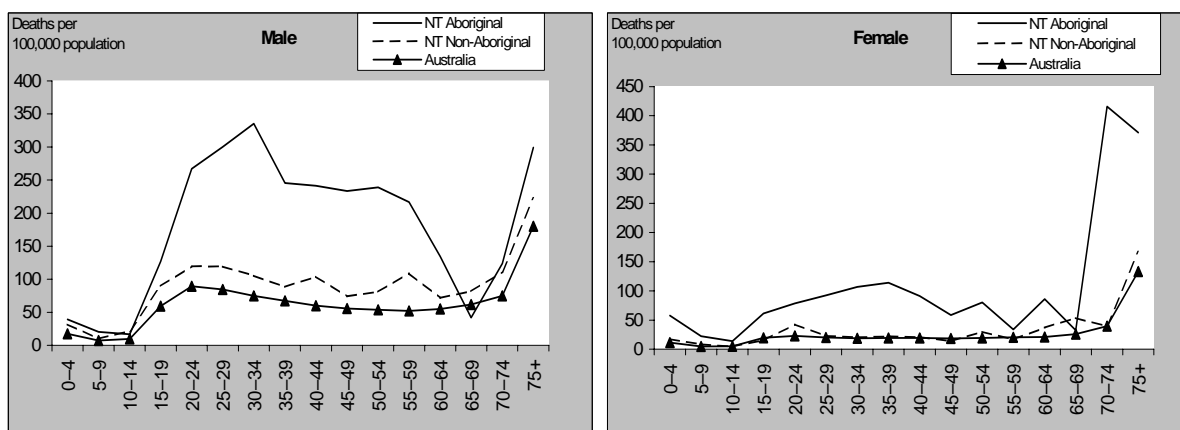
Figure 2.3: Number and rate of death due to injury by age group, Northern Territory 1991-2000



Note: Numbers and calculated rates for this Figure are based on Appendix Tables A4 and A5.

- The highest numbers of age-specific injury-related deaths occurred through the six, age groups from 15 to 44 years, with a peak in the age group of 25 to 29 years.
- The age-specific rates of death due to injury for the NT population have a similar distribution to that of the corresponding national rates. The highest death rate in the NT was in the 75+ year age group, with high rates also occurring in the three age groups from 20 to 34 years and in the 70 to 74 year age group.
- While the age-specific death rates were higher in the 70 to 74 and 75+ age groups the absolute number of deaths was small. The three age groups from 20 to 34 years make up a higher proportion of the NT population, and have both a comparatively high number of deaths and high death rates.

Figure 2.4: Age-specific death rate due to injury by sex, Northern Territory (by indigenous status) and Australia 1991-2000



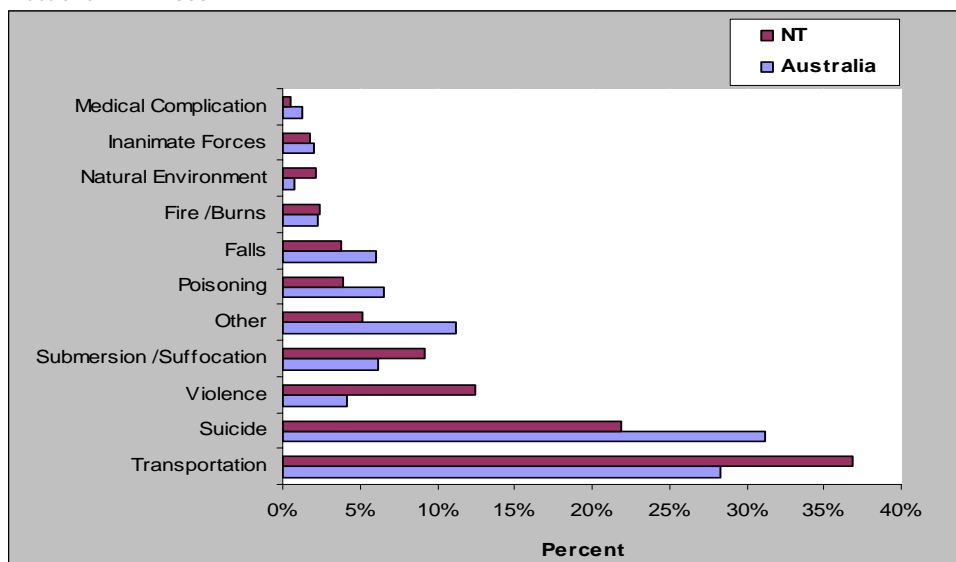
Note: Figure are provided in Appendix Table A4.

- NT male Aboriginal rates of death due to injury were higher than NT male non-Aboriginal rates for most age groups including all age groups from 15 to 64 years. The age-specific rates of death due to injury for NT Aboriginal males was up to 4 times the national rates for males in the same age group.
- NT male non-Aboriginal age-specific rates of death due to injury were generally higher than the corresponding national male rates for all age groups.
- NT female non-Aboriginal age-specific rates of death due to injury were similar to the corresponding national rates.
- NT female Aboriginal rates of death due to injury were higher than corresponding NT non-Aboriginal rates and national rates in the most age groups.
- For all populations and age groups, the rates of death due to injury were highest for Aboriginal males in the 25-34 year age group and Aboriginal females in the 70-74 year age group.

2.4 Death due to Injury by Injury Mechanism

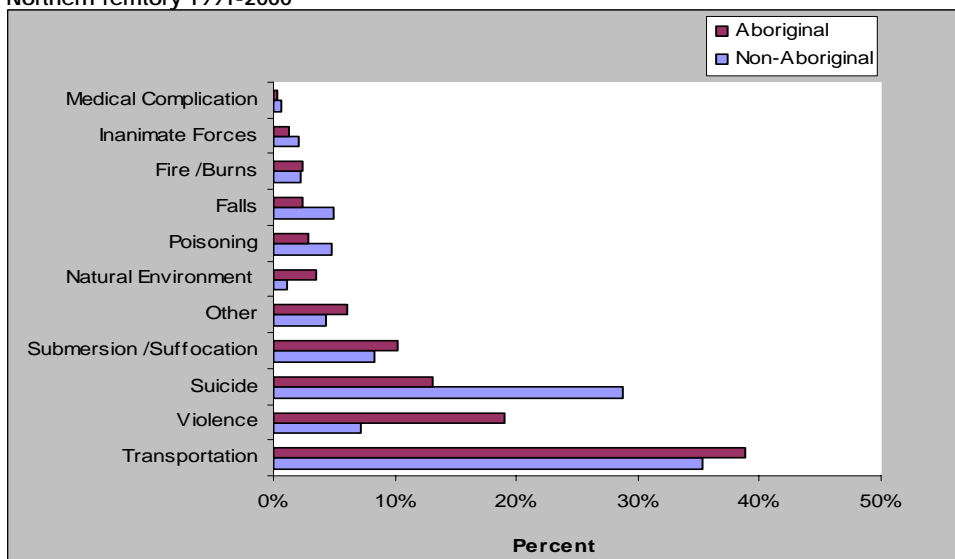
An analysis of the external object or the circumstance, which caused the injury, was undertaken by classifying injuries by injury mechanism.

Figure 2.5: Percentage of deaths due to injury by injury mechanism, Northern Territory and Australia 1991-2000



- The leading injury mechanisms for injury related death in the NT were transport accidents (37%) and suicide (22%). These are also the leading national causes but in the reverse order, with suicide (31%) followed by transport accidents (28%).
- Violence (12%) was the third ranked cause of injury death by injury mechanism for the NT, but was ranked the sixth (4%) leading national cause.

Figure 2.6: Percentage of deaths due to injury by injury mechanism and indigenous status, Northern Territory 1991-2000



Note: Numbers for this Figure are provided in Appendix Table A6.

- For the NT Aboriginal population, the three leading causes of injury death by injury mechanism were transport accident (39%), violence (19%) and suicide (13%).
- In the NT non-Aboriginal population, transportation (35%), suicide (29%) and submersion /suffocation (8%) were the three leading causes of injury death by injury mechanism.

Table 2.3: Age-standardised death rate due to injury by injury mechanism and sex, Northern Territory (by indigenous status) and Australia 1991-2000

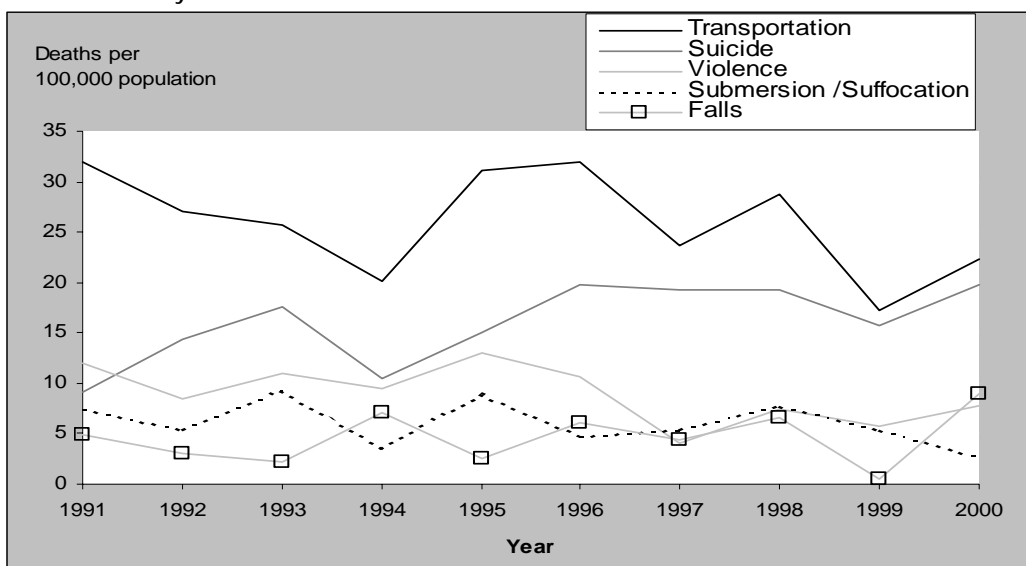
| Injury Mechanism | Male | | Female | | NT | | | Australia | | |
|-------------------------|---------------|----------------|--------------|----------------|--------------|----------------|--------------|--------------|--------------|--------------|
| | Aboriginal | Non-Aboriginal | Aboriginal | Non-Aboriginal | Aboriginal | Non-Aboriginal | Total | Male | Female | Total |
| Transportation | 73.9 | 28.8 | 25.5 | 8.4 | 48.9 | 19.2 | 25.7 | 17.3 | 6.7 | 11.9 |
| Suicide | 24.9 | 25.1 | 5.0 | 5.0 | 14.7 | 16.1 | 16.1 | 21.1 | 5.2 | 13.0 |
| Violence | 27.2 | 5.5 | 17.7 | 2.9 | 22.3 | 4.4 | 8.8 | 2.2 | 1.3 | 1.8 |
| Submersion /Suffocation | 15.5 | 6.1 | 5.2 | 2.9 | 10.2 | 4.5 | 6.0 | 4.0 | 1.2 | 2.6 |
| <i>Drowning*</i> | <i>(10.3)</i> | <i>(4.6)</i> | <i>(3.8)</i> | <i>(2.2)</i> | <i>(7.0)</i> | <i>(3.5)</i> | <i>(4.3)</i> | <i>(2.3)</i> | <i>(0.6)</i> | <i>(1.5)</i> |
| Falls | 4.4 | 6.4 | 5.7 | 2.5 | 5.2 | 4.6 | 4.7 | 3.2 | 1.6 | 2.4 |
| Poisoning | 5.3 | 5.0 | 5.3 | 5.7 | 2.6 | 2.6 | 2.8 | 3.9 | 1.6 | 2.7 |
| Fire /Burns | 6.7 | 2.2 | 8.4 | 0.0 | 7.8 | 1.2 | 2.6 | 1.4 | 0.5 | 0.9 |
| Natural Environment | 11.1 | 1.0 | 5.4 | 0.0 | 7.9 | 0.5 | 2.1 | 0.4 | 0.2 | 0.3 |
| Inanimate Forces | 1.9 | 2.4 | 0.7 | 0.0 | 1.3 | 1.2 | 1.3 | 1.6 | 0.1 | 0.8 |
| Medical Complication | 0.7 | 1.6 | 2.8 | 0.6 | 1.8 | 1.2 | 1.3 | 0.6 | 0.4 | 0.5 |
| All | 185.1 | 86.6 | 92.4 | 28.9 | 137.9 | 60.0 | 78.2 | 60.2 | 22.9 | 41.4 |

Note: 1. All figures in this table refer to deaths per 100,000 population
 2. *Drowning is a subset of the Injury Mechanism "Submersion/Suffocation"

- For the NT population during the ten-year period from 1991 to 2000, the highest age-standardised rates of injury related death by injury mechanism were transportation (25.7 per 100,000), suicide (16.1) and violence (8.8).

- NT rates of death due to injury by injury mechanism exceeded the national rates for most mechanism including: natural environment (6.4 times the national rate), violence (5.0 times), drowning (2.9 times), fire/burns (2.7 times), transportation (2.2 times), falls (2.0 times) and inanimate forces (1.5 times). The NT and national rates were similar for suicide and poisoning.
- For the NT Aboriginal population, the highest age-standardised rates of injury related death by injury mechanism were transportation (48.9), violence (22.3) and suicide (14.7).
- For the NT non-Aboriginal population, the highest age-standardised rates of injury related death by injury mechanism were transportation (19.2), suicide (16.1) falls (4.7) and submersion (4.5).
- Rates of death due to injury by injury mechanism were higher for the NT Aboriginal population compared with the NT non-Aboriginal population for eight injury mechanisms; natural environment (15.3 times), fire/burns (6.4 times), violence (5.1 times), transportation (2.5 times), submersion/suffocation (2.3 times), drowning (2 times) and medical complication (1.6 times).
- During the ten-year period the injury death rates for the NT Aboriginal and non-Aboriginal population were similar for falls and suicide.
- Transportation had the highest age-standardised rate of death due to injury of all the injury mechanisms for all four NT population groups; Aboriginal males, Aboriginal females, non-Aboriginal males and non-Aboriginal females. The rate was highest for Aboriginal males (73.9), which was 4.3 times the national male rate (17.3).
- Rates of death due to injury by violence, for the male and female NT Aboriginal populations (27.2 and 18.0), were 12.1 and 13.9 times the corresponding national male and female rates (2.2, 1.3).

Figure 2.7: Trends of age-standardised death rates due to injury for the five most common injury mechanisms, Northern Territory 1991-2000



Note: Numbers for this Figure are provided in Appendix Table A7.

- Of all injury mechanisms, transportation had the highest annual death due to injury, in all of the ten years from 1991 to 2000. The annual death rate from transport accidents declined during the ten years of this study.

- From 1992, suicide has had the second highest death rate due to injury by injury mechanism. The suicide rate increased over the decade and in 1999 and 2000 was only slightly less than the death rate for transportation.
- The trend in annual death rate due to injury by violence has declined slightly over the decade, with the lowest rate recorded in 1997.
- The trend in annual death rate due to injury by submersion/suffocation and falls appears to have been relatively stable over the study period.

Chapter 3: NT Hospital Admissions Due to Injury (1992-2001)

3.1 NT Hospital Admissions due to Injury

Data on NT public hospital admissions is available for the 10-year period from 1992 to 2001. During this period there were 44,278 hospital admissions for NT residents as a result of injury, which was 9% of the total number of admissions of NT residents to NT public hospitals. Cripps et al have previously reported that in 1998-1999, the crude rate for NT hospital admissions due to injury was only slightly higher than the national rate (2412 per 100,000 compared with 2160 per 100,000).⁵ This is in contrast to the NT death rate due to injury, which was much higher than the national rate.

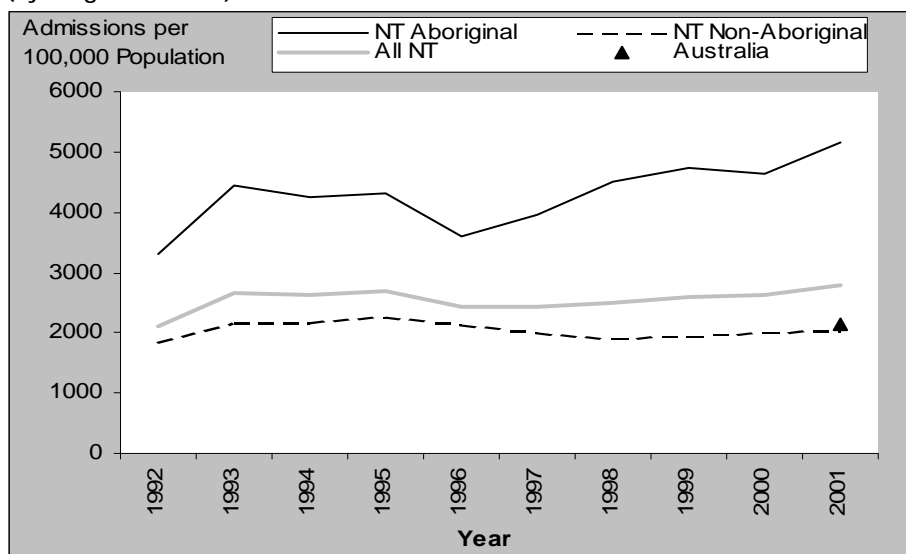
Table 3.1: Number and age-standardised admission rate due to injury of Northern Territory residents by sex and indigenous status, Northern Territory public hospitals 1992-2001

| | Male | | | Female | | | All Persons | | |
|---------------------------------|------------|----------------|------------|------------|----------------|--------------|-------------|----------------|--------|
| | Aboriginal | Non-Aboriginal | Male Total | Aboriginal | Non-Aboriginal | Female Total | Aboriginal | Non-Aboriginal | Total |
| Number of Admissions | 10,558 | 16,386 | 26,944 | 9733 | 7601 | 17,334 | 20,291 | 23,987 | 44,278 |
| Crude Admission Rate | 4051 | 2323 | 2789 | 3723 | 1250 | 1993 | 3887 | 1826 | 2412 |
| Age-standardised Admission Rate | 4503 | 2493 | 2883 | 4134 | 1539 | 2181 | 4316 | 2052 | 2551 |

Notes: (1) All rates in this table refer to admissions per 100,000 population
 (2) Full details of admissions are provided in Appendix Table A9-A13

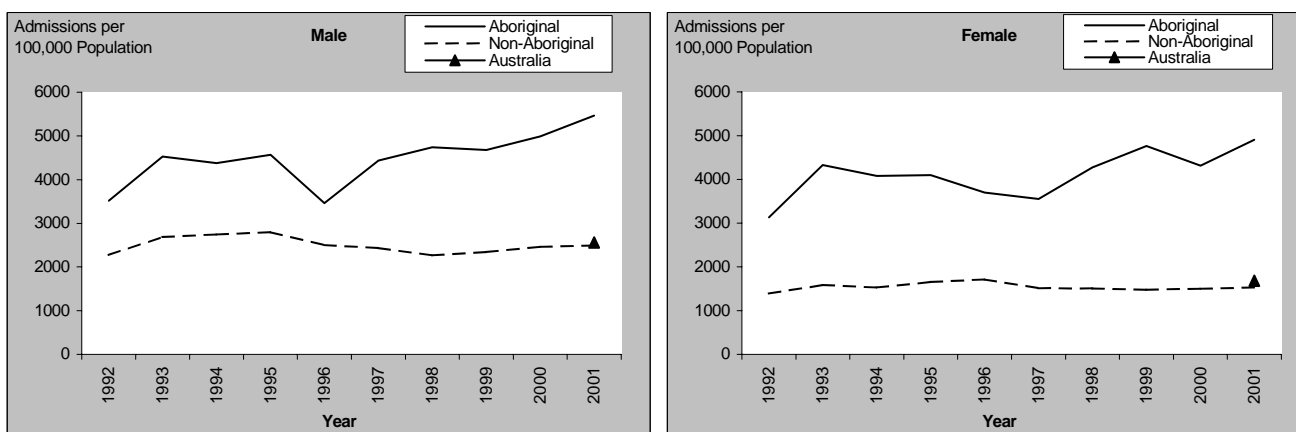
- For the ten-year period of the study there were 44,278 injury related admissions of NT residents to NT public hospitals. Of this total, 61% of the admissions were NT males, which was 1.3 times the age-standardised hospital admission rate for NT females.
- Similarly, of the total number of hospital admissions, 20,291 (46%) were NT Aboriginal NT people. The age-standardised rate of admission of Aboriginal people was 2.1 times the age-standardised rate for the NT non-Aboriginal population.

Figure 3.1: Trends of age-standardised admission rates due to injury in the Northern Territory (by indigenous status) 1992-2001 and Australia 2001



- During the ten-year period of NT data there was an upward trend in the age-standardised admission rate due to injury, which was driven by the increased rate in the NT Aboriginal population. Over the period the Aboriginal rate increased 1.5 times, while the non-Aboriginal rate remained stable.
- In 2001, the NT injury age-standardised admission rate was 1.4 times greater than the comparative national rate. The NT Aboriginal rate was 2.4 times the national rate, while the NT non-Aboriginal rate was the similar to national rate.

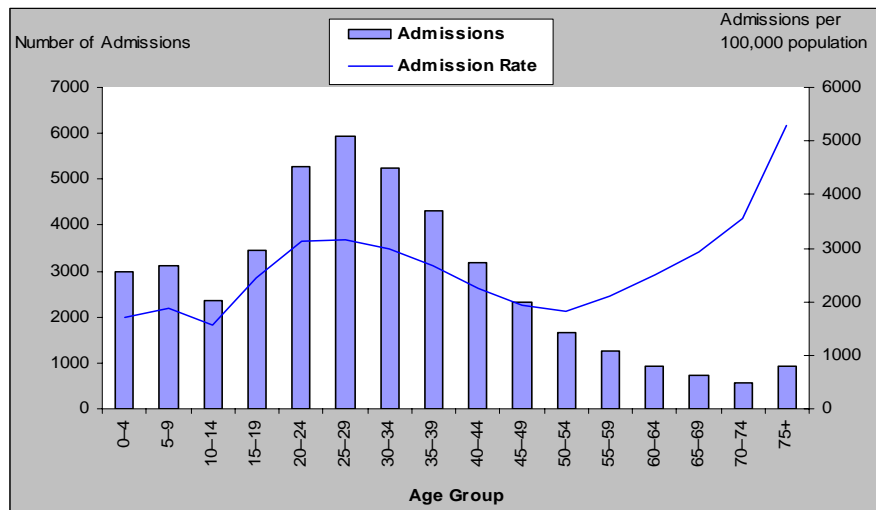
Figure 3.2: Trends of age-standardised admission rates due to Injury in (a) male and (b) female populations in the Northern Territory (by indigenous status) 1992-2001 and Australia 2001



- Both the age-standardised NT Aboriginal male and Aboriginal female rates of hospital admission due to injury increased over the study period. For 2001, the NT male rate was more than 2 times and the NT female rate more than 3 times the corresponding national rate.
- The non-Aboriginal male admission rate due to injury remained relatively stable over the study period. In 2001 the rate was similar to the national rate.
- The NT non-Aboriginal female rate of hospital admission was lower than the male rate and was stable over the decade. In 2001 NT non-Aboriginal female rate was similar to the national rate.

3.2 Admissions due to Injury by Age Group

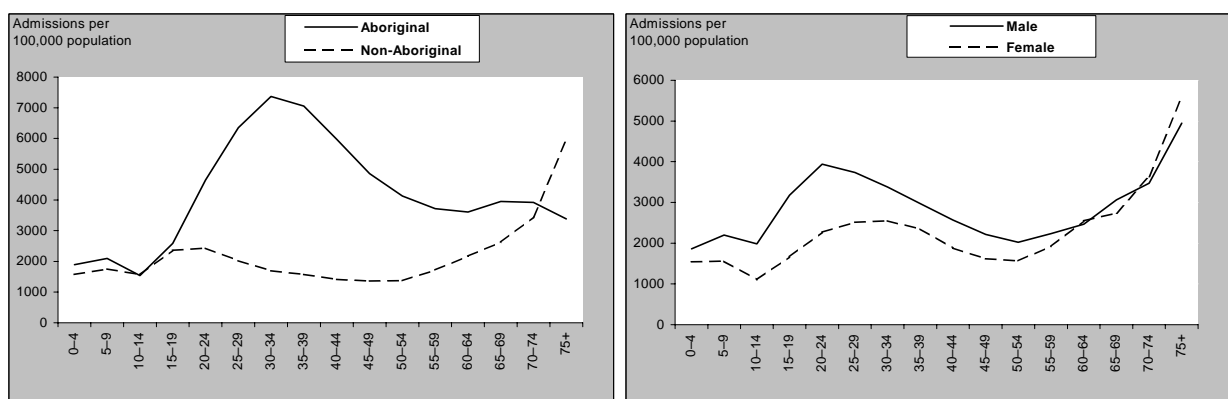
Figure 3.3: Number and admission rate due to injury by age group, Northern Territory 1992-2001



Note: Figures are provided in Appendix Table A9-10

- Across the age groups, there was an early rise in the number of hospital admissions for children aged 5 to 9 before a second rise in young adults to a peak in the 25 to 29 age group. Overall the majority (47%) of hospital admissions occurred in those aged between 20 and 39 years.
- The age-specific admission rates highlight those age groups that are at greatest risk of injury. The distributions of both the number of admissions and the admission rates have two early peaks in childhood and young adulthood. However the admission rates also rise dramatically for the elderly age groups, for whom there are comparatively few admissions. This discrepancy is a result of the population distribution of the NT, in which unlike other Australian states, the elderly form only a small proportion of the total population.

Figure 3.4: Age-specific admission rate due to injury, (a) by indigenous status and (b) by sex, Northern Territory 1992-2001

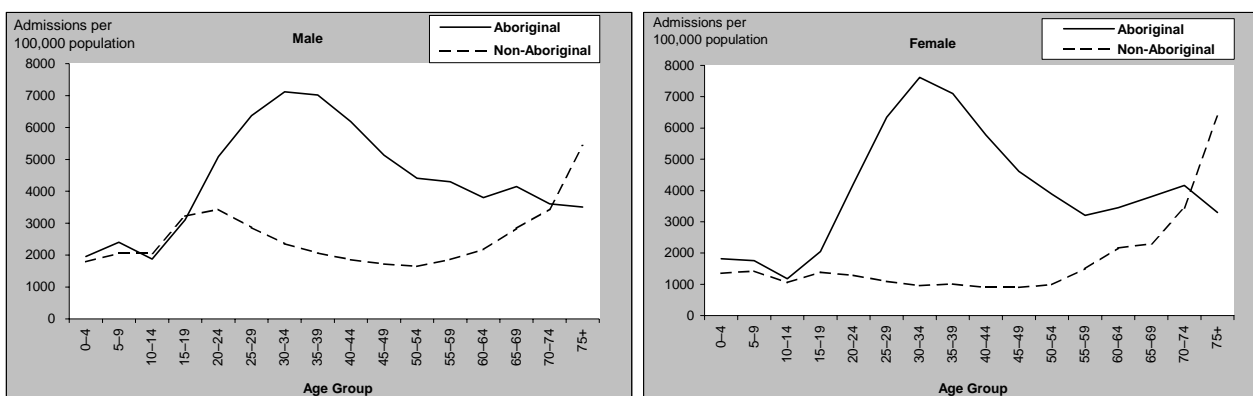


Note: Figures are provided in Appendix Table A9.

- In the Aboriginal population, the 30-34 and 35-39 age groups were at the highest risk of admission due to injury while in the non-Aboriginal population, the 70-74 year and 75+ year age groups were at the highest risk of admission due to injury.

- The difference in admission rates between the Aboriginal and the non-Aboriginal populations was most pronounced in the five age groups from 25 to 49 years where the Aboriginal rates were much higher than the non-Aboriginal rates. The greatest difference was seen in the 30-34 year age group, where the Aboriginal rate was more than 4 times the non-Aboriginal rate. In age groups less than 20 years, there was little difference between the two populations. The non-Aboriginal 75+ years age group had an admission rate that was similar to the peak admission rates for Aboriginal age groups.
- Male admission rates due to injury were generally higher than the female rates. The greatest gender difference was in the 15-19 and 20-24 year age groups. The male and female admission rates were similar in those age groups from 60 onwards.

Figure 3.5: Age-specific admission rate due to injury by indigenous status, for (a) male and (b) female populations, Northern Territory, 1992-2001



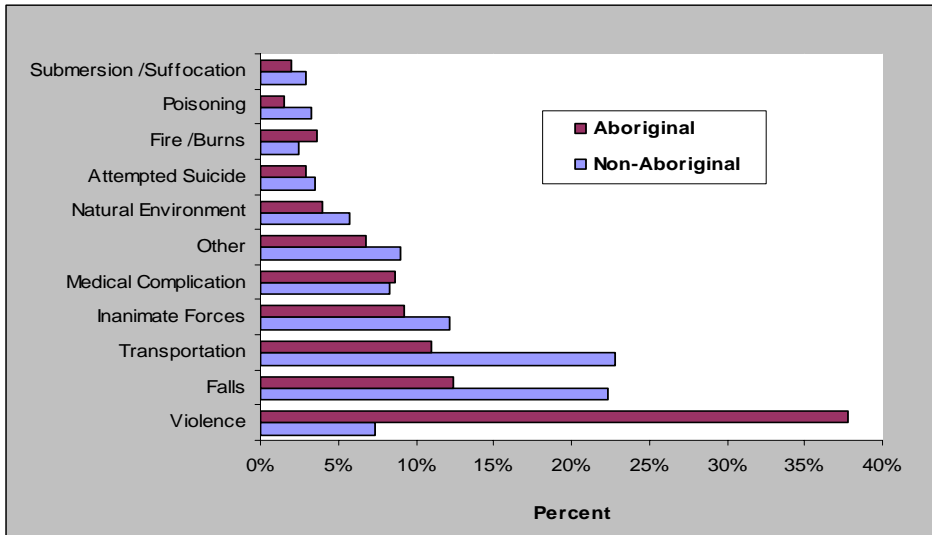
Note: Figures are provided in Appendix Table A9.

- Age-specific admission rates were similar in the Aboriginal and non-Aboriginal male populations in the four age groups less than 20 years and in the 70-74 year age group. Aboriginal male rates were highest in the 30-34 year age group with a rate 3 times the corresponding non-Aboriginal rate.
- Female rates were also similar in the Aboriginal and non-Aboriginal populations in the 4 age groups less than 20 years and in the 70-74 year age group. Aboriginal female rates were highest in the 30-34 years and the rate was approximately 6 times the corresponding non-Aboriginal female rate. Female non-Aboriginal rates were lowest in the 50-54 year age group and then increased to the 75+ year age group for which the rate was higher than the Aboriginal female rate.
- The distribution of age-specific admission rates for the male and female Aboriginal population was similar, including peak rates in the 30-34 year age groups.
- In the non-Aboriginal population there was a significant difference in the distribution and rates of admission, with an increase in the male rates through the two age groups from 15 to 24, which did not occur in the non-Aboriginal females.

3.3 Admissions due to Injury by Injury Mechanism

The most common cause of injury admission by injury mechanism was violence (9435 admissions or 21% of admissions) followed by falls (7896,18%) and then transportation (7703, 17%). These three injury mechanisms accounted for 56% of injury admissions in the NT during the study period. Inanimate forces, natural environment and medical complication injury mechanisms were the next most common injury mechanisms and together accounted for a further 28% of injury admissions (Appendix Table A10).

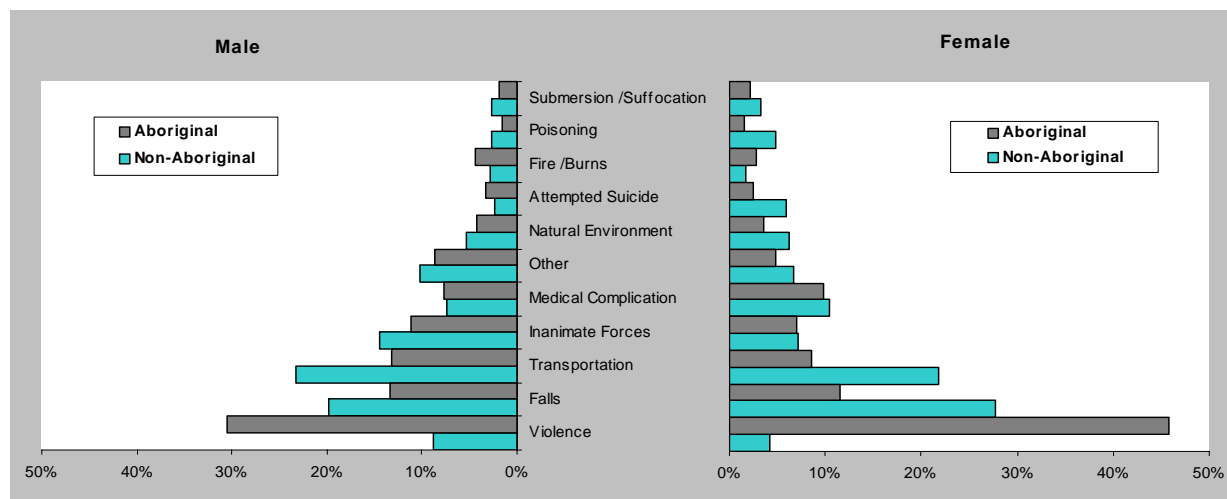
Figure 3.6: Percentage of admissions due to injury by injury mechanism and indigenous status, Northern Territory 1992-2001



Note: Figures are provided in Appendix Tables A11.

- For the NT, violence was the most common cause of injury admission by injury mechanism. Within the Aboriginal population violence accounted for 38% of the total of injury admissions. In contrast, violence was the 6th most common cause of injury admission and accounted for 7% of the injury admissions in the non-Aboriginal population.
- Falls (12%) and transport accidents (11%) were the second and third most common cause of injury admissions by injury mechanism for the Aboriginal population.
- In the non-Aboriginal population, transportation (23%), falls (22%) and inanimate forces (12%) were the most common causes of all injury admissions by injury mechanism.

Figure 3.7: Percentage of admissions due to injury by injury mechanism, male and female populations by indigenous status, Northern Territory 1992-2001



Note: Figures are provided in Appendix Tables A11.

- Violence was the most common cause of injury admission by injury mechanism for both NT Aboriginal males and NT Aboriginal females, and was 30% and 46% of total admissions respectively. For Aboriginal males, the second and third most common causes were falls and transportation, and for Aboriginal females the second and third ranked injury mechanisms were falls and medical complications.
- Transportation, falls and inanimate forces were the most common causes of injury admissions by injury mechanism for non-Aboriginal males, while for non-Aboriginal females falls, transport accidents and medical complications were the three most common causes.

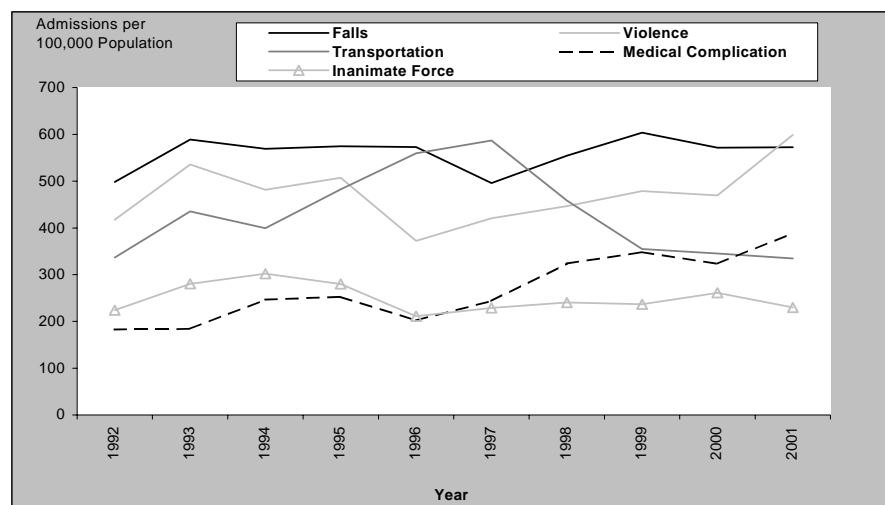
Table 3.2: Rates of admission due to injury by injury mechanism, sex and indigenous status, Northern Territory 1992-2001

| Injury Mechanism | Male | | Female | | NT | | Total |
|-------------------------|-------------|----------------|-------------|----------------|-------------|----------------|-------------|
| | Aboriginal | Non-Aboriginal | Aboriginal | Non-Aboriginal | Aboriginal | Non-Aboriginal | |
| Violence | 1418 | 191 | 1829 | 47 | 1627 | 124 | 472 |
| Falls | 551 | 579 | 502 | 570 | 529 | 578 | 561 |
| Transportation | 590 | 556 | 340 | 298 | 461 | 435 | 428 |
| Inanimate Forces | 454 | 319 | 274 | 89 | 362 | 213 | 249 |
| Medical Complication | 500 | 248 | 532 | 174 | 516 | 213 | 276 |
| Natural Environment | 173 | 121 | 134 | 79 | 153 | 102 | 114 |
| Attempted Suicide | 141 | 51 | 93 | 71 | 116 | 60 | 73 |
| Fire /Burns | 200 | 67 | 111 | 22 | 153 | 46 | 72 |
| Poisoning | 55 | 63 | 60 | 64 | 58 | 63 | 61 |
| Submersion /Suffocation | 65 | 68 | 66 | 42 | 66 | 56 | 59 |
| Near Drowning* | (6) | (10) | (4) | (5) | (5) | (8) | (7) |
| Other | 356 | 233 | 202 | 92 | 278 | 167 | 192 |
| All Injury | 4503 | 2493 | 4134 | 1539 | 4316 | 2052 | 2551 |

Notes: (1) All figures in this table refer to admissions per 100,000 population
 (2) Near Drowning is a subset of the Injury Mechanism 'Submersion/Suffocation'

- In the NT population, falls (561), violence (472) and transportation (428) had the highest rates of admission due to injury by injury mechanism.
- In the NT non-Aboriginal population, falls (578), transportation (435) and inanimate forces (213) had the highest rates of admission due to injury by injury mechanism.
- In the NT Aboriginal population, violence (1627), falls (529) and medical complications (516) had the highest rates of admission due to injury by injury mechanism.
- The injury admission rate due to violence was 13.5 times higher for the Aboriginal population (1627) compared with the non-Aboriginal population (124) and was 40 times higher for the female Aboriginal population (1829) when compared with the female non-Aboriginal population (47).
- Injury admission rates were also substantially higher for the Aboriginal population compared with the non-Aboriginal population for six other injury mechanisms; fire/burns (3.3 times higher), medical complications (2.4 times), attempted suicide (2 times), inanimate forces (1.6 times) and natural environment (1.5 times).
- Injury admission rates were similar in the Aboriginal and non-Aboriginal populations for submersion/suffocation, poisoning, and falls.
- Injury admission rates due to injury by injury mechanism were higher for the NT male population than the NT female population for most injury mechanisms including; inanimate mechanical forces (2.7 times higher), fire/burns (2.1 times), transportation (1.8 times) and natural environment (1.4 times).

Figure 3.8: Trends of the age-standardised rates of admission due to injury by the five most common injury mechanisms, Northern Territory public hospitals 1992-2001



Note: Figures are provided in Appendix Table A12.

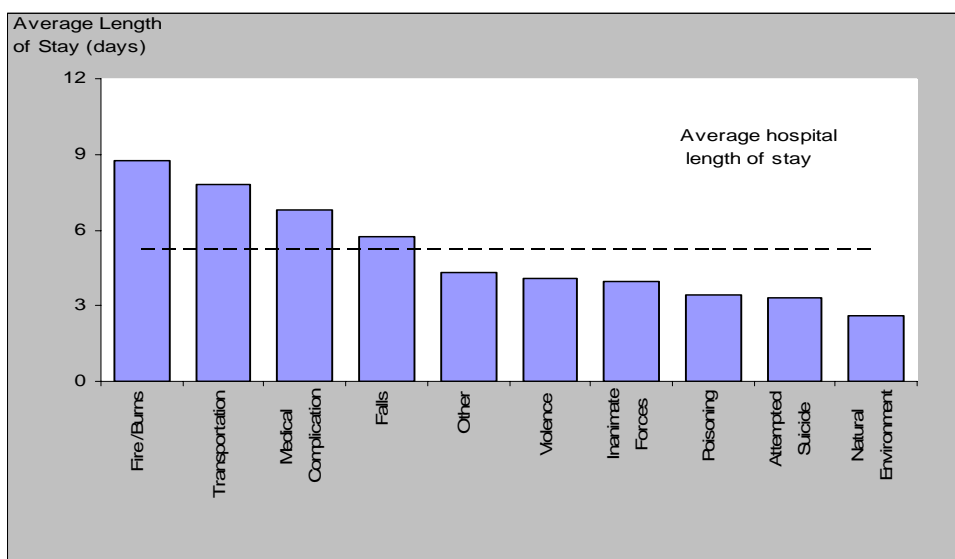
- Age standardisation allows comparison against a standard Australian population, and adjusts for the under representation of older people in the NT population. The five injury mechanisms with the highest age-standardised rates for the ten years from 1992 to 2001 were falls, violence, transport accidents, medical complications and inanimate forces.
- Over the ten-year period of data, falls was generally the injury mechanism with the highest age-standardised rate of admission and the rate was relatively stable.
- Violence generally had the second highest age-standardised rate of admission for injury by injury mechanism. In 2001 it had the highest rate of admission.

- The annual age-standardised rate for hospital admission as a result of transport accidents varied through the ten-year period with an increase in from 1992 until 1997, followed by a decrease through to 2001.
- The rate of admission due to injury by medical complications increased over the study period and in 2001 was the third highest rate.
- Rates of admission due to injury by inanimate forces were relatively stable over the study period.

3.4 Length of Stay due to Injury

During the 10-year study period, the average length of stay (LOS) was 4.5 days for NT residents admitted to NT public hospitals due to injury. The average length of stay per admission increased with age, from 4 days for the 0-4 year age group, to 12 days for the 75+ year age group. In this section the average length of stay per admission due to injury is reported by injury mechanism and age group.

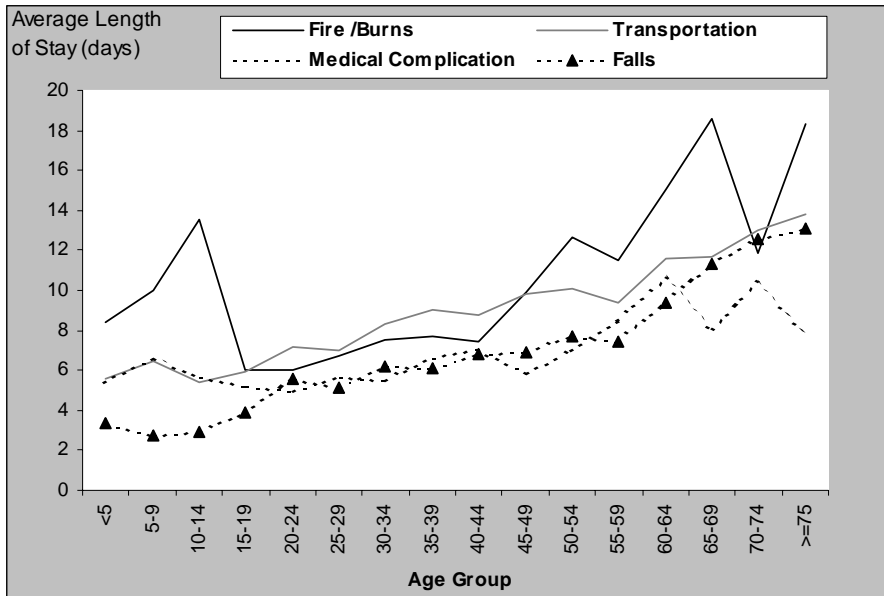
Figure 3.9: Average length of stay due to injury by injury mechanism, Northern Territory public hospitals 1992-2001



Note: Figures are provided in Appendix Table A14.

- The injury mechanisms which resulted in a longer length of stay than the average LOS due to injury were fire/burns, followed by transport accidents, medical complications and falls.
- Injury mechanisms with relatively shorter LOS were violence, inanimate forces, poisoning, attempted suicide and natural environment.

Figure 3.10: Average length of stay due to injury by age group, for the four most common injury mechanisms, Northern Territory public hospitals 1992-2001



Note: Figures are provided in Appendix Table A14

- The length of stay for those NT patients admitted for injury varied for different age groups, but generally increased with age, with the exception of fire/burns in children.
- For admission for treatment injury as a result of fire/burns, the length of hospital stay was greatest for those NT residents aged 14 years and younger, and for those aged over 45. The longest hospital stays were for those in the age groups from 65 to 69 and those 75 and over.
- The length of stay following Injury due to a transport accident increased with age and was the longest for those 75 and over.

3.5 Admissions due to Injury by Injury Type

Table 3.3: Percentage of admissions due to injury by injury Type, Northern Territory public hospitals 1992-2001

| Type of Injury | Number of Admissions | | | Percentage of Total Admissions |
|---|----------------------|----------------|---------------|--------------------------------|
| | Aboriginal | Non-Aboriginal | Total | |
| Fracture | 6733 | 9410 | 16,143 | 36% |
| Open Wound & Superficial Injury | 5536 | 4005 | 9541 | 22% |
| Complication of Surgical and Medical Care | 1797 | 1970 | 3767 | 9% |
| Poisoning & Toxic Effects by Medicinal and Nonmedicinal | 898 | 1885 | 2783 | 6% |
| Intracranial Injury | 1056 | 1382 | 2438 | 6% |
| Dislocation, Sprains and Strains | 736 | 1464 | 2200 | 5% |
| Burns | 847 | 604 | 1451 | 3% |
| Traumatic Complications & Unspecified Injuries | 543 | 779 | 1322 | 3% |
| Internal Injury | 658 | 494 | 1152 | 3% |
| Contusion with Intact Skin Surface | 611 | 492 | 1103 | 2% |
| Injury to Blood Vessels, Nerves and Spinal Cord | 376 | 447 | 823 | 2% |
| Other and Unspecified Effects of External Causes | 199 | 541 | 740 | 2% |
| Effects of Foreign Body Entering Through Orifice | 268 | 465 | 733 | 2% |
| Crushing Injury | 21 | 38 | 59 | 0% |
| Late Effects | 12 | 11 | 23 | 0% |
| Total | 20,291 | 23,987 | 44,278 | 100% |

Note: Injury Type classification for hospital admission data is provided in Appendix Table A3

- The most common injury types in NT patients admitted to hospital due to injury were fractures (36% of injury admissions), open wounds & superficial injury (22%) and medical complications (9%). These were the three highest ranked injury types for the both NT Aboriginal and non-Aboriginal populations.

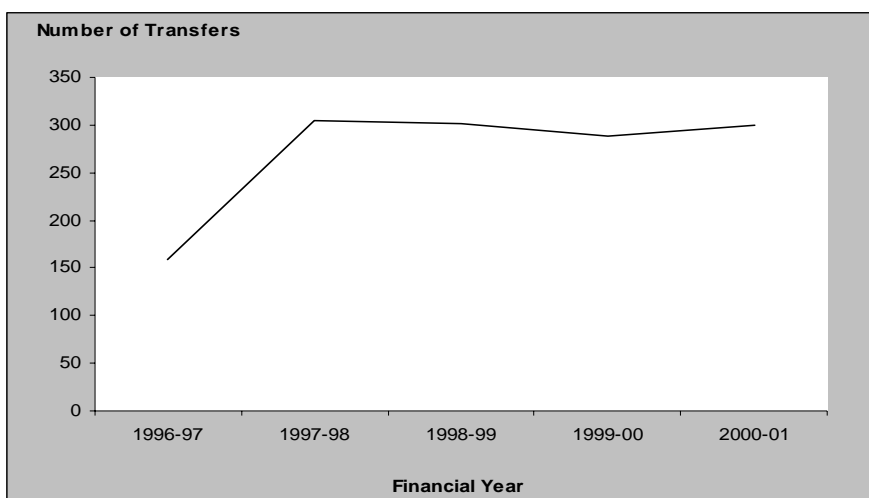
Chapter 4: Interstate hospital treatment due to injury, 1996/97-2000/01

This chapter reports statistics on those Northern Territory (NT) residents who were injured in the Northern Territory and initially admitted to a Northern Territory hospital before subsequent transfer for treatment at a hospital in another state or in the Australian Capital Territory. The greatest proportion of these transfers was to South Australia, however transfers occurred to most states. Data is available for the five-year period of 1996/97 to 2000/01, with the exception of Queensland, which does not provide detailed statistical information on Northern Territory patients transferred to that state.

During the five years for which data is available, interstate transfer and hospital treatment for injury accounted for 9% of all transfers and 13% of all interstate hospital costs.¹³ Injury was the fifth most common reason for interstate hospital transfer after circulatory system disorders (16%), neoplasms & radiotherapy/chemotherapy treatment (11%), musculoskeletal & connective tissue disorders (10%) and nervous system & sense organ disease (10%).

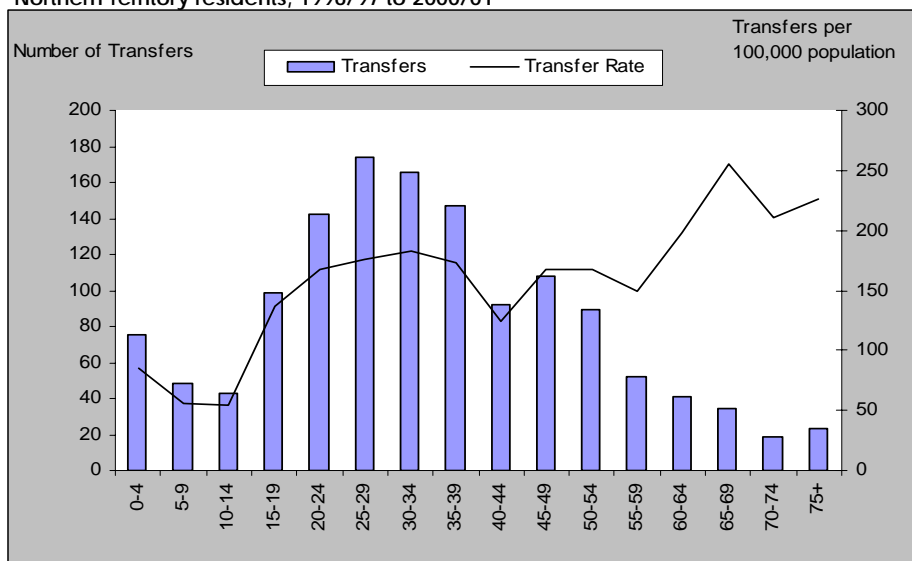
4.1 Interstate Hospital Transfers due to Injury

Figure 4.1: Number of interstate hospital transfers due to Injury, Northern Territory residents 1996-97 to 2000-01



- The number of interstate hospital transfers increased from 1996/97 to 1997/98 before stabilising for the last three years of available data.

Figure 4.2: Number and age-specific rate of interstate hospital transfers due to injury, Northern Territory residents, 1996/97 to 2000/01



Note: Figures are provided in Table A15.

- Most Northern Territory residents who were transferred were in the age groups from 20 to 39, with a peak age group of 25 to 29 years. There was a smaller number of transfers for those residents in age groups of less than 15 and 55 years and older.
- The age-specific rates of interstate transfer is influenced by the population distribution and while the absolute number of transfers of older Territorians was relatively low, the rate of their transfer was the highest of all age groups, with a peak in the 65 to 69 years age group.

4.2 Interstate Hospital Transfers due to Injury by Injury Mechanism

Table 4.1: Numbers of interstate hospital transfers of residents (by indigenous status) due to injury by injury mechanism, Northern Territory 1996/97 to 2000/01

| Injury Mechanism | Number of Transfers | | | Total Percentage |
|-------------------------|---------------------|----------------|-------------|------------------|
| | Aboriginal | Non-Aboriginal | Total | |
| Medical Complication | 126 | 200 | 326 | 24% |
| Violence | 146 | 33 | 179 | 13% |
| Transportation | 41 | 132 | 173 | 13% |
| Falls | 38 | 112 | 150 | 11% |
| Inanimate Forces | 27 | 67 | 94 | 7% |
| Fire /Burns | 34 | 16 | 50 | 4% |
| Natural Factors | 8 | 23 | 31 | 2% |
| Submersion /Suffocation | 9 | 21 | 30 | 2% |
| Attempted Suicide | 7 | 8 | 15 | 1% |
| Poisoning | 1 | 12 | 13 | 1% |
| Other | 26 | 265 | 291 | 22% |
| Total | 463 | 889 | 1352 | 100% |

Injury in the Northern Territory 1991-2001

- The most common categories of injury mechanism for Northern Territory residents requiring interstate hospital transfer were: medical complication (24%), violence (13%) and transportation (13%).
- In the non-Aboriginal population, the most common category of injury mechanism requiring interstate hospital transfer was medical complication, followed by transportation and then falls.
- In the Aboriginal population the most common categories of injury mechanism requiring interstate hospital transfers were violence, medical complication and transportation.

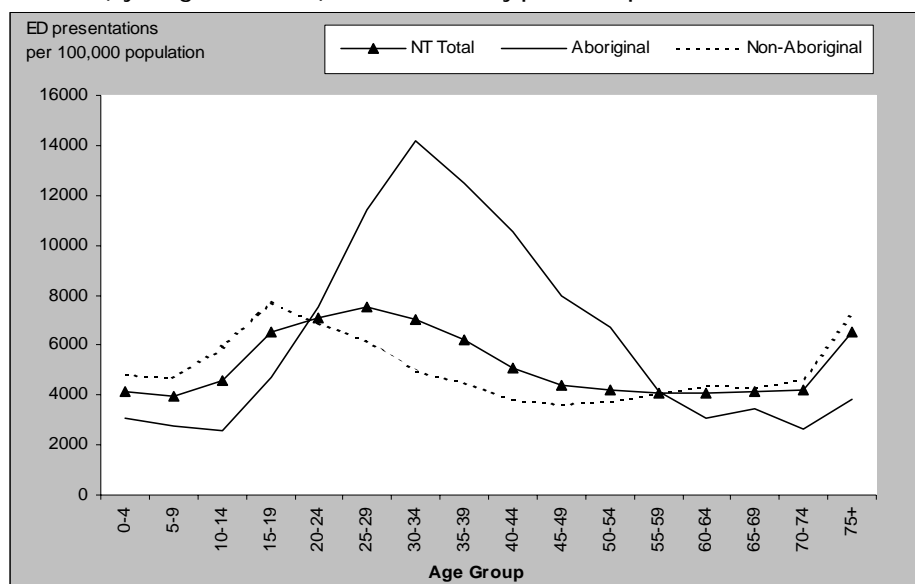
Chapter 5: Emergency Department Presentations due to Injury, 1998-2001

This chapter contains information relating to Northern Territory residents who presented at the Emergency Departments of the five Northern Territory public hospitals. The data is available for the four calendar years from 1998 to 2001. No data is available for the Emergency Department of the private hospital in Darwin.

5.1 Emergency Department Presentations due to Injury

The number of Emergency Department presentations due to injury remained stable through the four years of data with approximately 30,000 presentations each year. Injury accounted for 28% of all the ED presentations in NT public hospitals during the four year period. Within five-year age groups, there were 8659 injury related presentations in the 0 to 4 year age group, with the number rising for each age group to a peak of 16,689 for the 25 to 29 year olds. There was a decline in numbers for subsequent age groups. Figures are provided in Appendix Table A13.

Figure 5.1: Age-specific rate of emergency department presentations due to injury for Northern Territory residents (by indigenous status), Northern Territory public hospitals 1998-2001



Note : Figures are provided in Appendix Table A16.

- The information in Figure 5.1 demonstrates differing patterns of the age-specific rates of presentation to Emergency Departments for the NT Aboriginal and non-Aboriginal populations. In the Aboriginal population the rates of presentations are relatively low in the age groups up to age 14, but then rise steeply to a peak rate in the 30-34 year age group. This rate is more than twice that of the non-Aboriginal peak rate. Rates for presentations for the Aboriginal population then decline steadily through to those Aboriginal residents aged 60 and older.
- In the non-Aboriginal population, there is less variation through the different age groups but with a peak age-specific rate of presentation in the 15 to 19 years age group and a second rise in age-specific rate for those older than 75.
- The age-specific rate for ED presentation for all Territorians is a combination of the two previous rates and as such tends to obscure the important differences in the two populations.

5.2 ED Presentations due to Injury by Injury Type

Table 5.1: Number and percentage of emergency department presentations due to injury by injury type, Northern Territory public hospitals 1998-2001

| Injury Type | ED Presentations due to Injury | |
|--|--------------------------------|-------------|
| | Number | Percentage |
| Open Wound | 33,888 | 28% |
| Dislocation /Sprain /Strain /Muscle Tendon | 26,699 | 22% |
| Fracture | 17,106 | 14% |
| Poisoning, Toxic, Bites / Envenomation | 11,345 | 9% |
| Foreign Body | 6351 | 5% |
| Burn | 3321 | 3% |
| Eye Injury | 2774 | 2% |
| Assault | 2083 | 2% |
| Multiple Injuries | 1704 | 1% |
| Complication of Surgical & Medical Care | 1533 | 1% |
| Crush | 1428 | 1% |
| Intracranial Injury | 652 | 1% |
| Injury to Nerve and Blood Vessels | 550 | 0% |
| Internal Organ | 217 | 0% |
| Late Effects of Injury | 216 | 0% |
| Dental | 193 | 0% |
| Amputation | 166 | 0% |
| Asphyxia | 58 | 0% |
| Drowning & Immersion | 54 | 0% |
| Other | 4138 | 3% |
| Not recorded | 7088 | 6% |
| Total | 121,564 | 100% |

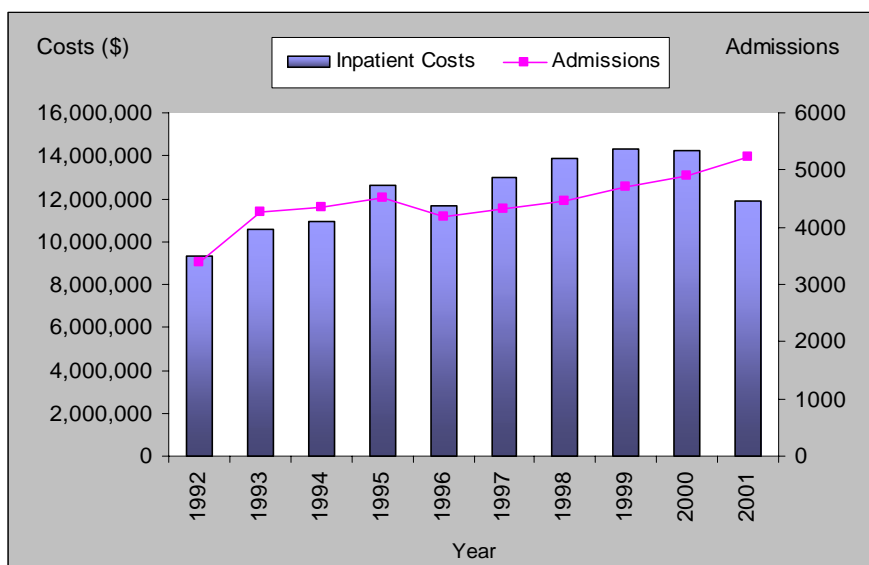
- The three most common Emergency Department presentations due to injury by injury type were open wound (28%), dislocation /sprains /strains (22%) and fracture (14%).

Chapter 6: NT Public Hospital Costs due to Injury

Costing information is available for public hospital admissions, interstate hospital costs and costs of presentations to Emergency Departments in public hospitals. The three datasets cover varying time periods from 1992 to 2001, so the analysis of total hospital costs as a result of injury have only been calculated for the four years for which costings from all three datasets are available, which is the period from 1998 to 2001. Information is calculated for both annual and average NT hospital cost due to injury.

6.1 Cost of NT Public Hospital Admissions due to Injury

Figure 6.1: Cost and number of hospital admissions due to injury, Northern Territory public hospitals 1992-2001



Note: NT Public Hospital costs are given in Appendix Table A14 .

- \$122.4 million was spent on 44,278 admissions due to injury in NT public hospitals from 1992 to 2001. The average cost per admission due to injury was \$2764.
- Costs and admissions during the period from 1992 to 2000 increased in at the same rate. However in 2001 the total cost of hospital admissions related to injury increased at a time of decline in the number of injury related admissions.

Injury in the Northern Territory 1991-2001

Table 6.1: Percentage of total admissions and percentage of total admission costs due to injury by injury mechanism, Northern Territory public hospitals 1992-2001

| Injury Mechanism | % of Total Admission Costs due to Injury (\$122.4 million) | % of Total Admissions due to Injury (44,278) | Ratio of Total Admission Costs over Total Number of Admissions |
|-------------------------|--|--|--|
| Transportation | 23% | 17% | 1.4 |
| Violence | 17% | 21% | 0.8 |
| Falls | 17% | 18% | 0.9 |
| Medical Complication | 12% | 9% | 1.3 |
| Inanimate Forces | 9% | 11% | 0.8 |
| Fire /Burns | 6% | 3% | 2.0 |
| Natural Environment | 3% | 5% | 0.6 |
| Attempted Suicide | 3% | 3% | 1.0 |
| Poisoning | 2% | 2% | 1.0 |
| Submersion /Suffocation | 1% | 2% | 0.5 |
| Other | 7% | 8% | 0.9 |
| Total | 100% | 100% | |

- Transportation was the injury mechanism with the highest percentage of the total cost of hospital admissions (23% of costs), but was the third highest percentage of total admissions due to injury (17% of injury admissions).
- Violence and falls were the injury mechanisms with the equal second highest percentage of costs (both 17% of costs) for hospital admission due to injury. This was consistent with the high percentage of total hospital admissions due to injury (21% and 18% respectively).
- The mechanism with the highest ratio of cost per admission was Fire/Burns (2.0) followed by transportation (1.4) and medical complication (1.3).

Table 6.2: Proportion of injury related admissions and proportion of cost of admission, by injury types, Northern Territory public hospitals 1992-2001

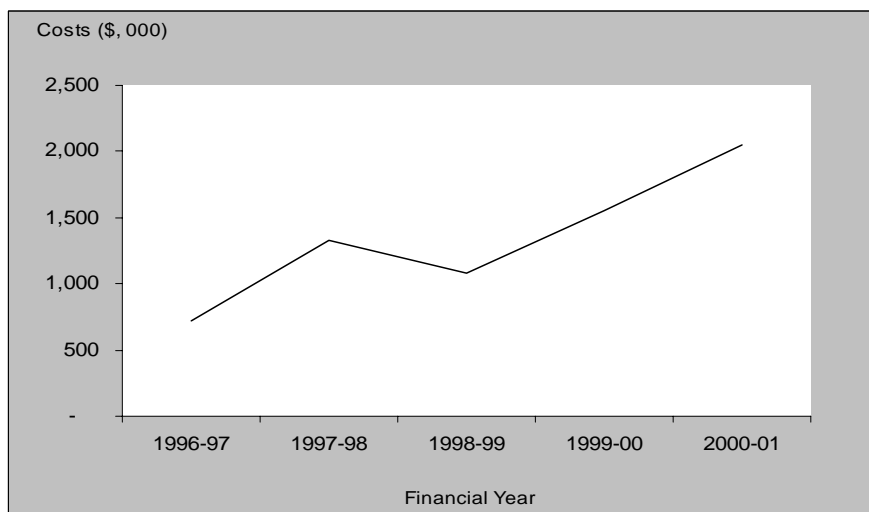
| Injury Type | % of Total Admission Cost due to Injury (\$122.4 Million) | % of Total Admissions due to Injury (44,278) | Ratio of % of Total Admission Costs over % of Total Number of Admissions |
|---|---|--|--|
| Fracture | 39% | 36% | 1.1 |
| Open Wound & Superficial Injury | 15% | 22% | 0.7 |
| Complication of Surgical and Medical Care | 12% | 9% | 1.4 |
| Poisoning & Toxic Effects by Medicinals and Nonmedicinals | 4% | 6% | 0.6 |
| Intracranial Injury | 6% | 6% | 1.1 |
| Dislocation, Sprains and Strains | 4% | 5% | 0.8 |
| Burns | 7% | 3% | 2.2 |
| Other* | 13% | 13% | 1.0 |
| Total | 39% | 36% | 1.1 |

Note: Injury Type classifications for hospital admissions are provided in Table A3

- Fracture (39% of costs), open wound & superficial injury (15%) and medical complication (12%) had the highest costs for NT public hospital admissions due to injury by injury type.
- Burns were the most expensive injury type to treat and had a proportion of cost over proportion of admission ratio of 2.2, followed by medical complications (1.4). Open wounds and superficial injury were the least expensive injury type to treat (0.7).

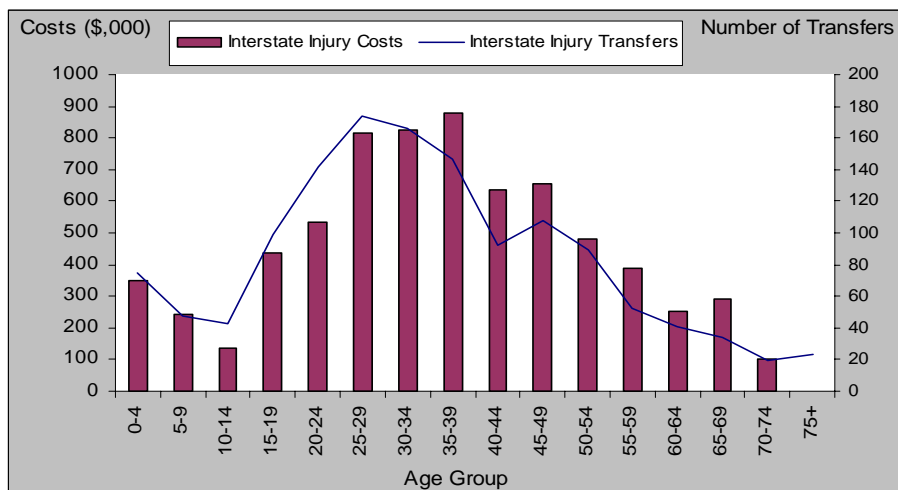
6.2 Cost of Interstate Hospital Transfers due to Injury

Figure 6.2: Cost of interstate hospital transfers due to injury, Northern Territory residents 1996-97 to 2000-01



- Over the five-year period to 2000/01, the total cost of interstate hospital transfers due to injury for NT public hospitals was \$7.3 million, which was 11% of all NT public hospital interstate transfer costs.
- There was a general increase in costs from a low of \$0.7 million in 1996-97 to a high of \$2.1 million in 2000/01.
- The increase in transfer costs was greater than the increase in the number of interstate transfers. The reasons for this are not clear.

Figure 6.3: Cost and number of interstate hospital transfers due to injury by age group, Northern Territory residents 1996/97 to 2000/01



- Both the number and costs of interstate hospital transfers due to injury had a similar distribution, with the majority of transfers occurring to patients in the seven age groups in the 20 to 54 year age range.
- The total cost of interstate hospital transfers due to injury was greatest for those patients in the 25 to 39 year age range.

Injury in the Northern Territory 1991-2001

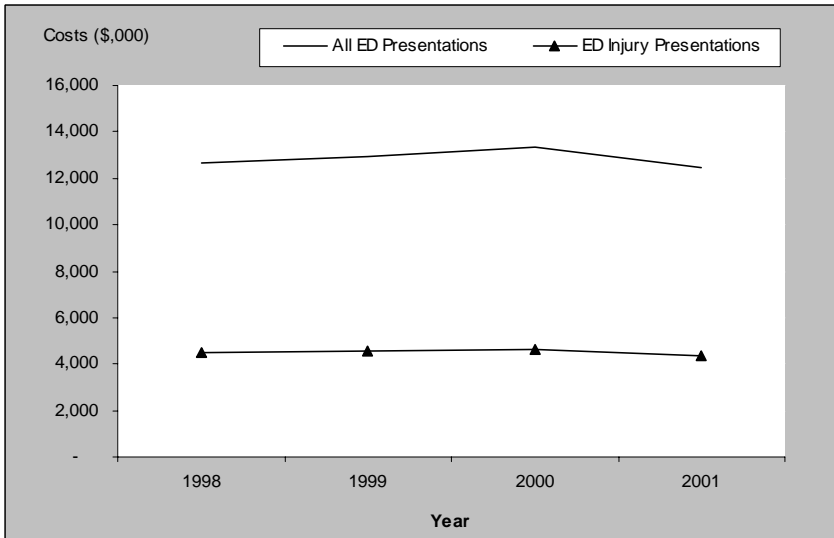
Table 6.3: Total and percentage of cost for interstate hospital transfers due to injury by injury mechanism, Northern Territory residents 1996/97 to 2000/01

| Injury Mechanism | NT Population Injury Transfer Costs | | | Percentage of Total Costs |
|-------------------------|-------------------------------------|------------------|------------------|---------------------------|
| | Aboriginal | Non-Aboriginal | Total Costs | |
| Medical Complication | 727,999 | 1,020,485 | 1,748,484 | 24% |
| Fire /Burns | 1,020,078 | 309,009 | 1,329,087 | 18% |
| Transportation | 288,348 | 696,189 | 984,537 | 13% |
| Violence | 724,685 | 174,606 | 899,291 | 12% |
| Falls | 159,140 | 379,981 | 539,121 | 7% |
| Inanimate Forces | 201,054 | 229,657 | 430,711 | 6% |
| Natural Environment | 27,423 | 199,688 | 227,111 | 3% |
| Submersion /Suffocation | 15,472 | 95,024 | 110,496 | 1% |
| Attempted Suicide | 22,916 | 20,236 | 43,152 | 1% |
| Poisoning | 1010 | 22,583 | 23,593 | 0% |
| Other | 54,811 | 990,848 | 1,045,660 | 14% |
| Total | 3,242,937 | 4,138,305 | 7,381,242 | 100% |

- The injury mechanisms with the highest percentage of interstate hospital transfer costs due to injury were medical complications (24% of costs), fire/burns (18%) and transportation (13%).
- The injury mechanism of Fire/Burns was responsible for a disproportionately high cost of interstate hospital transfers, with 4% of the total number of transfers contributing 18% of the total transfer costs.

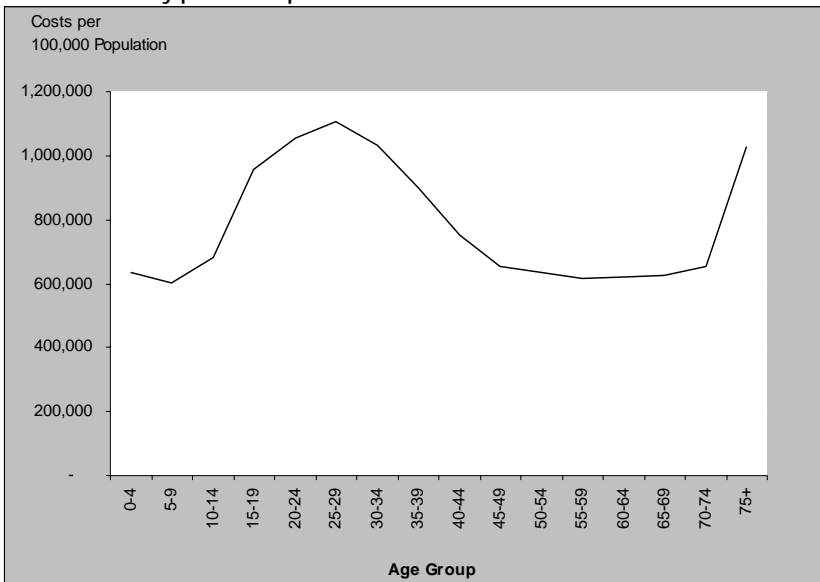
6.3 Cost of Emergency Department Presentations due to Injury

Figure 6.4: Annual cost of all emergency department presentations and emergency department presentations due to injury, Northern Territory public hospitals 1998-2001



- In the four-year period to 2001, annual costs for ED presentations due to injury were stable at approximately \$4.5 million, which was 35% of the total annual ED costs in NT public hospitals.

Figure 6.5: Cost of emergency department presentations due to injury by age group, Northern Territory public hospitals 1998-2001



- The cost by five-year age group, peaked in young adults aged 25 to 29, with a second rise in elderly NT residents aged 75 and above.

6.4 Summary of Costs due to Injury

Table 6.4: Cost per admission and average annual cost per admission due to injury by injury mechanism, Northern Territory patients 1998-2001

| Injury Mechanism | Average Annual Costs | | | Average Costs per Admission | | | |
|----------------------------|-----------------------------------|---|-------------------------------------|-----------------------------|-----------------------------------|--|-----------------------------|
| | NT Public Hospital (1998-2001) | Interstate Transfers (1997/98 - 2000/01) | Emergency Department (1998-2001) | Annual Cost (1998 -2001) | NT Public Hospital (1998-2001) | Interstate Transfers (1997/98 - 2000/01)* | Average Cost (1998-2001) |
| Transportation | 2,701,302 | 238,786 | | 2,940,088 | 3688 | 5789 | 3800 |
| Violence | 2,434,587 | 192,397 | | 2,626,984 | 2310 | 5271 | 2409 |
| Falls | 2,307,031 | 129,024 | | 2,436,055 | 2639 | 3910 | 2685 |
| Medical Complication | 1,995,062 | 393,250 | | 2,388,312 | 3974 | 5783 | 4190 |
| Inanimate Forces | 1,139,077 | 103,036 | | 1,242,113 | 2356 | 4480 | 2452 |
| Fire /Burns | 825,479 | 283,777 | | 1,109,255 | 5664 | 26,398 | 7088 |
| Natural Environment | 441,765 | 56,034 | | 497,798 | 1801 | 3029 | 1887 |
| Attempted Suicide | 430,836 | 10,788 | | 441,624 | 2410 | 2877 | 2420 |
| Submersion /Suffocation | 240,669 | 27,007 | | 267,676 | 1741 | 5401 | 1869 |
| Poisoning | 136,144 | 5646 | | 141,789 | 1676 | 1882 | 1683 |
| Other | 941,810 | 173,192 | | 1,115,002 | 2435 | 2793 | 2485 |
| Annual Average Cost | 13,593,762 | 1,612,935 | 4,521,053 | 19,727,750 | 2819 | 5293 | 2966 |

Notes: (1) Interstate transfer costs were presented by financial year and these have been combined with NT Hospital Admission and ED presentation costs for the following calendar year.

(2) Costs by injury mechanism were not available for ED presentation costs and so only total figures have been given for annual average costs.

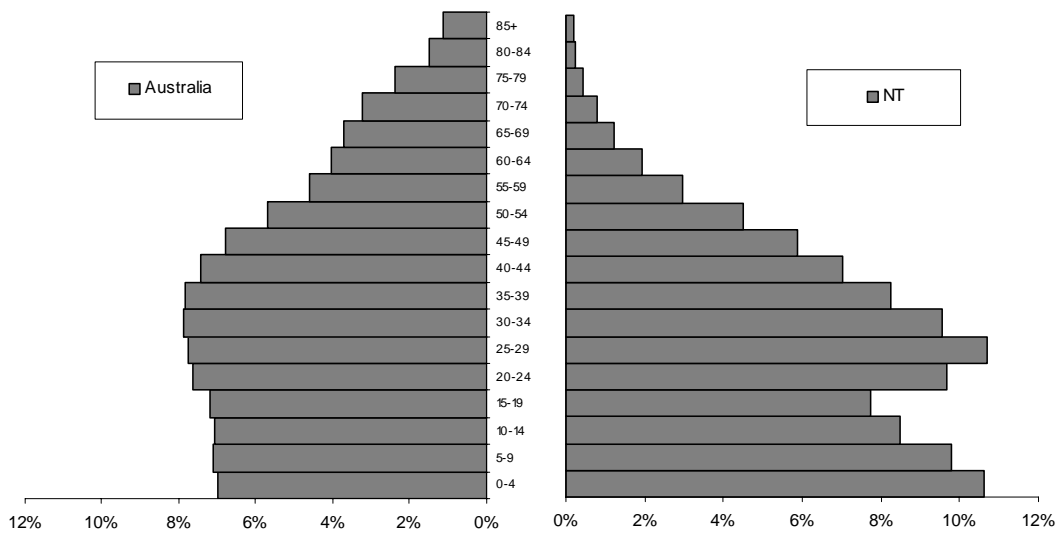
- The estimated annual average cost due to injury for the NT Department of Health and Community Services for the 4-year period to 2001 was \$19.7 million. This was made up of \$13.6 million for NT public hospital admissions, \$1.6 million for interstate hospital transfers and \$4.5 million for NT public hospital ED costs.
- The injury mechanisms, which resulted in the highest total annual costs for admissions due to injury, were transport accidents followed by violence and then falls.
- The injury mechanisms, which resulted in the highest average total costs due to injury, were fire/burns, followed by medical complications and transport accidents.

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Appendix

Figure A1: Population pyramid, Australia and Northern Territory, 1991-2001



Source: ABS & DHCS Epidemiology Population Data (1991-2001)

Table A1: Number and percentage of deaths by cause of death, Northern Territory (by indigenous status) and Australia 1991-2000

| Cause of Death | NT | | | Australia N=1,256,002 |
|--|-------------|----------------|-------------|--------------------------|
| | Aboriginal | Non-Aboriginal | All | |
| | N=3,795 | N=3,767 | N=7,562 | |
| Cardiovascular | 26.8% | 25.3% | 26.1% | 42.1% |
| Neoplasm | 12.2% | 27.2% | 19.7% | 27.2% |
| Injury | 15.0% | 18.8% | 16.9% | 6.1% |
| Respiratory | 13.5% | 8.2% | 10.9% | 7.8% |
| Endocrine, Nutrition and Metabolic Diseases and Immunity Disorders | 7.0% | 3.5% | 5.2% | 3.1% |
| Digestive | 6.0% | 4.1% | 5.0% | 1.6% |
| Perinatal Period | 3.6% | 4.0% | 3.8% | 3.2% |
| Genitourinary | 3.5% | 1.7% | 2.6% | 0.5% |
| Infectious | 3.9% | 1.1% | 2.5% | 1.8% |
| Mental Disorder | 3.3% | 1.6% | 2.5% | 1.0% |
| Nervous System & Sense Organs | 2.2% | 1.9% | 2.1% | 2.2% |
| Blood & Blood Forming Organs | 2.0% | 2.0% | 2.0% | 2.6% |
| Skin & Subcutaneous Tissue | 0.8% | 0.3% | 0.6% | 0.6% |
| Pregnancy, Childbirth & Puerperium | 0.2% | 0.2% | 0.2% | 0.2% |
| Other* | 0.0% | 0.0% | 0.0% | 0.0% |
| Total Percent of Deaths | 100% | 100% | 100% | 100% |

*Other includes – Musculoskeletal and Connective Tissue, Congenital Anomalies and Symptoms, Signs and Ill-defined Conditions.

Injury in the Northern Territory 1991-2001

Table A2: Injury mechanism classifications and ICD-9 and ICD-10 codes

| Injury Mechanism | Injury Mechanism Subcategory | ICD-9 | ICD-10 |
|-----------------------------|--|--|--|
| <i>Intentional Injury</i> | | | |
| Interpersonal Violence | <ul style="list-style-type: none"> ◆ firearm ◆ bodily force ◆ poisoning ◆ suffocation ◆ sharp or blunt object ◆ other unspecified means | E960-E969 <ul style="list-style-type: none"> ◆ E965.0-E965.4 ◆ E960.0-E960.9 ◆ E962.0-E962.9 ◆ E963 ◆ E966, E968.2 ◆ all remaining IPV Ecodes | X85-Y09, Y87.1 <ul style="list-style-type: none"> ◆ X93, X95 ◆ Y04, Y05 ◆ X85, X87, X88, X89, X90 ◆ X91 ◆ X99, Y00 ◆ All remaining X and Y codes in this group |
| Suicide/ Attempted Suicide | <ul style="list-style-type: none"> ◆ firearm ◆ poisoning ◆ hanging / suffocation ◆ drowning /submersion ◆ cutting ◆ jumping ◆ other unspecified means | E950-E959 <ul style="list-style-type: none"> ◆ E955.0-E955.4 ◆ E950-E952 ◆ E953 ◆ E954 ◆ E956 ◆ E957, E958.0 ◆ all remaining suicide Ecodes | X60-X84, Y87.0 <ul style="list-style-type: none"> ◆ X72, X73, X74 ◆ X60-X69 ◆ X70 ◆ X71 ◆ X78 ◆ X80-X84 ◆ All remaining X and Y codes in this group |
| Other Intentional Injury | <ul style="list-style-type: none"> ◆ legal Intervention & War | <ul style="list-style-type: none"> ◆ E970-E978, E990-E999 | <ul style="list-style-type: none"> ◆ Y35-Y36, Y89.0-Y89.1 |
| <i>Unintentional Injury</i> | | | |
| Inanimate Mechanic Forces | <ul style="list-style-type: none"> ◆ Machinery Accidents ◆ Cutting and Piercing Accidents ◆ Striking and Crushing Accidents ◆ Fireworks ◆ Other unspecified inanimate mechanic forces | E916-E923 (not E917.0) <ul style="list-style-type: none"> ◆ E919, E920 (.0,.1,.2,.4) ◆ E920 (.3,.5,.8) ◆ E916-E918 (not E917.0) ◆ E921-E923 ◆ all remaining E codes in this group | W20-W43 (not W21), W49 <ul style="list-style-type: none"> ◆ W24, W30-31, W28-29 ◆ W26-27, W25 ◆ W20, W22-23 ◆ W32-W43, W49 ◆ all remaining W codes in this group |
| Falls | <ul style="list-style-type: none"> ◆ same level <ul style="list-style-type: none"> ◆ from tripping, stumbling, skiing, ◆ from collision, pushing, or by other person ◆ one level to another from or into <ul style="list-style-type: none"> ◆ stairs, steps, ladder ◆ chairs, wheelchairs or bed ◆ cliff tree ◆ playground equipment ◆ building structure ◆ diving or jumping into water ◆ other unspecified fall | E880-E886, E888, E929.3 <ul style="list-style-type: none"> ◆ E885-E886 ◆ E885 ◆ E886.9 ◆ E880-E884 ◆ E880, E881 ◆ E884 (.2,.4,.6) ◆ E884 (.1,.3) ◆ E884.0 ◆ E882 ◆ E883.0 ◆ All remaining falls Ecodes | W00-W19, Y86 <ul style="list-style-type: none"> ◆ W01 - W03 ◆ W01 ◆ W03 ◆ W05-W17 ◆ W10-W12 ◆ W05-W07 ◆ W14, W15 ◆ W09 ◆ W13 ◆ W16 ◆ All remaining W Y Codes in this group |
| Fire /Burns | <ul style="list-style-type: none"> ◆ Indoor fire/flames ◆ Outdoor fire/flames | E890-E899, E924-E926, E929.4 <ul style="list-style-type: none"> ◆ E890, E891, E895, E896, E893(.0,.1) ◆ E892, E897, E893(.2) | X00-X19, X49, W85-W99 <ul style="list-style-type: none"> ◆ X00, X02 ◆ X01, X03 |

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| | | | |
|---|--|--|--|
| | <ul style="list-style-type: none"> ◆ burn –hot /heat/caustic substances ◆ electric current /Radiation ◆ fireworks ◆ other fire/ burns | <ul style="list-style-type: none"> ◆ E924 ◆ E925-E926 ◆ E921- E923 ◆ all remaining fire/burns Ecodes | <ul style="list-style-type: none"> ◆ X10-X19, X49 ◆ W85-W99 ◆ W32-W43, W49 ◆ all remaining fire/burns codes in this group |
| Complication of Medical & Surgical Care | <ul style="list-style-type: none"> ◆ due to drugs and medicaments ◆ due to surgery and medical care ◆ due to medical devices ◆ due to abnormal reaction or complication of care after procedure ◆ unspecified complications of care | <p>E930-E949, E870-E879</p> <ul style="list-style-type: none"> ◆ E930-E949.9 ◆ E870-E876.9 (not E874) ◆ E874 ◆ E878-E879.9 ◆ all remaining complications of care E codes | <p>Y40-Y84, Y88</p> <ul style="list-style-type: none"> ◆ Y40-Y59, Y88.0 ◆ Y60-Y69, Y88.1 ◆ Y70-Y82, Y88.2 ◆ Y83-Y84, Y88.3 ◆ All remaining Y codes in this group |
| Transportation | | | |
| Motor Vehicle Accident | <ul style="list-style-type: none"> ◆ motor cyclist ◆ pedal cyclist ◆ pedestrian ◆ MV occupant ◆ MV driver ◆ other and unspecified MVA | <p>E810-E825, E929.0</p> <ul style="list-style-type: none"> ◆ E810-E825 (.2, .3) ◆ E810-E825 (.6) ◆ E810-E825 (.7) ◆ E810-E825 (.1) ◆ E810-E825 (.0) ◆ All remaining E codes | <p>V02-V04, V09 (not .9), V12-V14, V19 (.0-.6)V20-V79, V80.3-V80.5, V81.0-V81.1, V82.0-V82.1, V83.1-V83.1, V84-V88, V89 (not .1), Y85.0</p> <ul style="list-style-type: none"> ◆ V20-V29 ◆ V12-V14, V19.0-V19.6 ◆ V02-V04, V09 (not in .9) ◆ V30-V78 (.1, .6) ◆ V30-V78 (.5, .0) ◆ All remaining V codes in this group |
| Other Transport Accident | <ul style="list-style-type: none"> ◆ other road vehicle accident (other than MVA), water transport accidents, railway accident, air and space transport accidents, and other transport accident | <ul style="list-style-type: none"> ◆ E800-E848 (not in MV) ◆ E929.1 | <ul style="list-style-type: none"> ◆ All V Codes (not in MV), ◆ Y85.1 |
| Natural Environmental Factors | <ul style="list-style-type: none"> ◆ natural forces (excessive heat/cold, pressure and sunlight) and natural disaster (lightning, storm, earthquake, volcano) ◆ Animal (including Venomous) Forces ◆ Other unspecified | <p>E900-E909, E927-E928, E929.5</p> <ul style="list-style-type: none"> ◆ E900-E901(.0), E902, E904.3, E907-E909 ◆ E905, E906 ◆ Remaining E codes in this group | <p>X20-X39, X50-X57, W53-W64</p> <ul style="list-style-type: none"> ◆ X30-X38, W94 ◆ X20-X29, W53-W59, W64 ◆ Y86 and remaining X, W codes in this group |
| Poisoning | <ul style="list-style-type: none"> ◆ Pharmaceutical and other biological ◆ Alcohol ◆ Gases and Vapours ◆ other unspecified drug or substance | <p>E850-E869, E929.2</p> <ul style="list-style-type: none"> ◆ E850-E858 ◆ E860 ◆ E867-E869 ◆ all remaining poisoning Ecodes | <p>X40-X49, Y86</p> <ul style="list-style-type: none"> ◆ X40-X44 ◆ X45 ◆ X46,X47, X49 ◆ All remaining X Codes in this group |
| Submersion /Suffocation/Foreign Body | <ul style="list-style-type: none"> ◆ drowning / near drowning ◆ drowning –boat related ◆ drowning –natural water ◆ drowning –bathtub ◆ downing -pool ◆ suffocation | <p>E830, E832, E910-E915</p> <ul style="list-style-type: none"> ◆ E830, E832, E910 ◆ E830, E832 ◆ E910(.0-3, .7) ◆ E910(.4) ◆ E910(.5, .6, .8) ◆ E911-E913 | <p>V90-V92, W65-W84, W44-W45</p> <ul style="list-style-type: none"> ◆ V90-V92, W65-W74 ◆ V90-V92 ◆ W69-W70 ◆ W65-W66 ◆ W67-W68, W73 ◆ W75-W84 |

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| | | | |
|------------------------------|---|--------------------------------|------------------------------|
| | ◆ foreign body into orifice (apart from respiratory tract) | ◆ E914-E915 | ◆ W44, W45 |
| Sports Accident | ◆ fall in sports ◆ striking in sports ◆ overexertion and strenuous movement | ◆ E886.0 ◆ E917.0 ◆ E927 | ◆ W03 ◆ W21 ◆ X50 |
| Other Unintentional Accident | ◆ Other unspecified accidents | ◆ Remaining E codes | ◆ Remaining V, W, X, Y codes |

In this report, other intentional, other unintentional and sport accidents were combined to report as "other" injury mechanism.

Table A3: Injury type classifications and ICD and ED presentation codes.

| Injury Type Classifications for Hospital Admission Data | Hospital Admission Data (ICD Codes)* | Injury Type Classifications for ED Presentation Data | ED Presentation Codes |
|--|--------------------------------------|--|-----------------------|
| Burns | 940-949 | Burns (include corrosion and | 12, 19 |
| Contusion with Intact Skin Surface | 920-924 | | |
| Crushing Injury | 925-929 | Crushing Injury | 09 |
| Dislocation, Sprains and Strains | 830-848 | Dislocation, Sprains, Strains, Muscle and Tendon | 04-05, 08 |
| Foreign Body | 930-939 | Foreign Body | 14 |
| Fracture | 800-829 | Fracture (excluding teeth) | 03 |
| Injury to Blood Vessel, Nerves and Spinal Cord | 900-904, 950-957 | Injury to Nerves and Blood Vessel | 06-07 |
| Internal Injury | 860-869 | Internal Organ | 11 |
| Intracranial Injury | 850-854 | Intracranial Injury | 15 |
| Late Effects of Injury | 905-909 | | |
| Medical Complication | 996-999 | | |
| Open Wound & Superficial Injury | 870-897, 910-919 | Wound Superficial, Wound Open (exc. eye) | 01-02 |
| Other (Other & Unspecified Effects of External Causes) | 990-995 | Injury of Unspecified Nature | 22-23 |
| Poisoning & Toxic Effects by Medicinal and Non-medicinal | 960-989 | Poisoning, Toxic, Bites / Envenomation | 20-21 |
| Traumatic Complications & Unspecified Injuries | 958-959 | | |
| | | Multiple Injury | 24 |
| | | Amputation | 10 |
| | | Dental | 16 |
| | | Drowning, Immersion | 17 |
| | | Asphyxia | 18 |
| | | Violence or Assault | U |
| | | Eye Injury (exc. foreign body) | 13 |

*For the hospital admission data using ICD-10, an ICD code mapping table was applied, backward mapping ICD-10 codes to ICD-9 (http://www2.fhs.usyd.edu.au/ncch/whats_new/ICD10toICD10amMappings/ICD-10%20to%20ICD-10-AM%20Mapping%20Tables.htm).

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Table A4: Age-standardised death rate due to injury by age group and sex, Northern Territory (indigenous status) and Australia, 1991-2000

| | Males | | | Females | | | NT | | | Australia | | |
|---------------|------------|----------------|------------|------------|----------------|--------------|------------|----------------|-----------|-----------|-----------|-------------|
| | Aboriginal | Non-Aboriginal | Male Total | Aboriginal | Non-Aboriginal | Female Total | Aboriginal | Non-Aboriginal | All | Males | Females | All Persons |
| 0-4 | 39 | 32 | 35 | 58 | 17 | 33 | 48 | 25 | 34 | 17 | 11 | 15 |
| 5-9 | 20 | 10 | 14 | 22 | 8 | 14 | 21 | 9 | 14 | 7 | 5 | 6 |
| 10-14 | 16 | 22 | 20 | 14 | 5 | 8 | 15 | 13 | 14 | 10 | 5 | 7 |
| 15-19 | 127 | 90 | 104 | 61 | 15 | 35 | 94 | 55 | 71 | 59 | 20 | 40 |
| 20-24 | 267 | 120 | 165 | 79 | 42 | 54 | 173 | 83 | 111 | 90 | 23 | 57 |
| 25-29 | 300 | 119 | 164 | 92 | 23 | 41 | 195 | 73 | 104 | 85 | 20 | 52 |
| 30-34 | 335 | 105 | 153 | 107 | 20 | 41 | 217 | 65 | 99 | 75 | 19 | 47 |
| 35-39 | 246 | 88 | 118 | 114 | 22 | 42 | 177 | 58 | 82 | 67 | 19 | 43 |
| 40-44 | 241 | 104 | 126 | 91 | 21 | 35 | 163 | 66 | 83 | 60 | 19 | 40 |
| 45-49 | 233 | 74 | 98 | 58 | 14 | 22 | 142 | 47 | 63 | 56 | 18 | 37 |
| 50-54 | 239 | 81 | 104 | 80 | 30 | 40 | 157 | 60 | 76 | 54 | 19 | 37 |
| 55-59 | 217 | 109 | 126 | 34 | 17 | 21 | 118 | 73 | 82 | 52 | 20 | 36 |
| 60-64 | 134 | 72 | 83 | 86 | 37 | 52 | 107 | 58 | 69 | 55 | 21 | 38 |
| 65-69 | 42 | 82 | 75 | 33 | 53 | 47 | 37 | 70 | 63 | 62 | 26 | 43 |
| 70-74 | 124 | 111 | 113 | 416 | 39 | 151 | 291 | 79 | 131 | 75 | 40 | 56 |
| 75+ | 299 | 223 | 237 | 371 | 167 | 205 | 339 | 192 | 219 | 180 | 133 | 151 |
| <i>Averag</i> | <i>154</i> | <i>83</i> | <i>102</i> | <i>69</i> | <i>23</i> | <i>36</i> | <i>111</i> | <i>55</i> | <i>71</i> | <i>59</i> | <i>25</i> | <i>42</i> |

Table A5: Number of deaths due to injury by age group and sex and indigenous status, Northern Territory 1991-2000

| Age Groups | Male | | | Female | | | All | | |
|--------------|------------|----------------|------------|------------|----------------|--------------|------------|----------------|-------------|
| | Aboriginal | Non-Aboriginal | Male Total | Aboriginal | Non-Aboriginal | Female Total | Aboriginal | Non-Aboriginal | All |
| 0-4 | 14 | 17 | 31 | 19 | 9 | 28 | 33 | 26 | 59 |
| 5-9 | 7 | 5 | 12 | 7 | 4 | 11 | 14 | 9 | 23 |
| 10-14 | 5 | 10 | 15 | 4 | 2 | 6 | 9 | 12 | 21 |
| 15-19 | 36 | 40 | 76 | 17 | 6 | 23 | 53 | 46 | 99 |
| 20-24 | 71 | 71 | 142 | 21 | 23 | 44 | 92 | 94 | 186 |
| 25-29 | 70 | 85 | 155 | 22 | 15 | 37 | 92 | 100 | 192 |
| 30-34 | 62 | 75 | 137 | 21 | 13 | 34 | 83 | 88 | 171 |
| 35-39 | 38 | 60 | 98 | 19 | 13 | 32 | 57 | 73 | 130 |
| 40-44 | 29 | 64 | 93 | 12 | 11 | 23 | 41 | 75 | 116 |
| 45-49 | 22 | 40 | 62 | 6 | 6 | 12 | 28 | 46 | 74 |
| 50-54 | 17 | 34 | 51 | 6 | 9 | 15 | 23 | 43 | 66 |
| 55-59 | 11 | 30 | 41 | 2 | 3 | 5 | 13 | 33 | 46 |
| 60-64 | 5 | 12 | 17 | 4 | 4 | 8 | 9 | 16 | 25 |
| 65-69 | 1 | 9 | 10 | 1 | 4 | 5 | 2 | 13 | 15 |
| 70-74 | 2 | 7 | 9 | 9 | 2 | 11 | 11 | 9 | 20 |
| 75+ | 4 | 13 | 17 | 6 | 12 | 18 | 10 | 25 | 35 |
| Total | 394 | 572 | 966 | 176 | 136 | 312 | 570 | 708 | 1278 |

Injury in the Northern Territory 1991-2001

Table A6: Number of deaths due to injury by injury mechanism, sex and indigenous status, Northern Territory 1991-2000

| Injury Mechanism | Male | | | Female | | | All | | |
|-------------------------|-------------|----------------|-------------|-------------|----------------|--------------|-------------|----------------|-------------|
| | Aboriginal | Non-Aboriginal | Male Total | Aboriginal | Non-Aboriginal | Female Total | Aboriginal | Non-Aboriginal | Total |
| Transportation | 162 | 198 | 360 | 59 | 52 | 111 | 221 | 250 | 471 |
| Suicide | 62 | 176 | 238 | 13 | 28 | 41 | 75 | 204 | 279 |
| Violence | 64 | 40 | 104 | 44 | 11 | 55 | 108 | 51 | 159 |
| Submersion /Suffocation | 41 | 43 | 84 | 17 | 16 | 33 | 58 | 59 | 117 |
| /Foreign Body | | | | | | | | | |
| <i>Drowning</i> | <i>(26)</i> | <i>(36)</i> | <i>(62)</i> | <i>(12)</i> | <i>(13)</i> | <i>(25)</i> | <i>(38)</i> | <i>(49)</i> | <i>(89)</i> |
| Other | 20 | 18 | 38 | 15 | 13 | 28 | 35 | 31 | 66 |
| Poisoning | 13 | 25 | 38 | 3 | 9 | 12 | 16 | 34 | 50 |
| Falls | 8 | 29 | 37 | 6 | 6 | 12 | 14 | 35 | 49 |
| Fire / Burns | 7 | 16 | 23 | 7 | 0 | 7 | 14 | 16 | 30 |
| Natural Environment | 11 | 8 | 19 | 9 | 0 | 9 | 20 | 8 | 28 |
| Inanimate Forces | 5 | 15 | 20 | 2 | 0 | 2 | 7 | 15 | 22 |
| Medical Complication | 1 | 4 | 5 | 1 | 1 | 2 | 2 | 5 | 7 |
| Total | 394 | 572 | 966 | 176 | 136 | 312 | 570 | 708 | 1278 |

Drowning: is a subset of submersion/suffocation, not including suffocation and foreign body

Table A7: Yearly death rates due to injury by injury mechanism, Northern Territory residents 1991-2000

| Year | Transportation | Suicide | Violence | Submersion /Suffocation | Falls | Poisoning | Fire /Burns | Natural Environment | Inanimate Forces | Medical Complication | All Injury |
|----------------|----------------|-----------|----------|-------------------------|----------|-----------|-------------|---------------------|------------------|----------------------|------------|
| 1992 | 32 | 9 | 12 | 7 | 5 | 5 | 0 | 2 | 0 | 0 | 79 |
| 1993 | 27 | 14 | 8 | 5 | 3 | 2 | 6 | 1 | 2 | 3 | 77 |
| 1994 | 26 | 18 | 11 | 9 | 2 | 2 | 1 | 2 | 1 | 0 | 80 |
| 1995 | 20 | 11 | 10 | 4 | 7 | 6 | 1 | 5 | 2 | 2 | 70 |
| 1996 | 31 | 15 | 13 | 9 | 3 | 1 | 3 | 1 | 2 | 3 | 85 |
| 1997 | 32 | 20 | 11 | 5 | 6 | 1 | 2 | 0 | 1 | 1 | 90 |
| 1998 | 24 | 19 | 4 | 5 | 4 | 2 | 1 | 0 | 0 | 0 | 73 |
| 1999 | 29 | 19 | 7 | 8 | 7 | 5 | 5 | 3 | 3 | 1 | 97 |
| 2000 | 17 | 16 | 6 | 5 | 1 | 3 | 2 | 2 | 1 | 0 | 56 |
| 2001 | 22 | 20 | 8 | 3 | 9 | 1 | 3 | 3 | 0 | 2 | 76 |
| <i>Average</i> | <i>26</i> | <i>16</i> | <i>9</i> | <i>6</i> | <i>5</i> | <i>3</i> | <i>3</i> | <i>2</i> | <i>1</i> | <i>1</i> | <i>78</i> |

Injury in the Northern Territory 1991-2001

Table A8: Number of deaths due to injury by injury mechanism, sex, age group and indigenous status, Northern Territory hospitals 1992-2001

| Injury Mechanism | Male | | | | | | Female | | | | | | All | | | | | |
|-------------------------|-----------|------------|------------|------------|-----------|------------|-----------|-----------|-----------|-----------|-----------|--------------|-----------|------------|------------|------------|-----------|------------|
| | 0-4 | 5-24 | 25-44 | 45-64 | 65+ | Male Total | 0-4 | 5-24 | 25-44 | 45-64 | 65+ | Female Total | 0-4 | 5-24 | 25-44 | 45-64 | 65+ | Total |
| Aboriginal | | | | | | | | | | | | | | | | | | |
| Transportation | 5 | 48 | 80 | 27 | 2 | 162 | 4 | 17 | 29 | 7 | 2 | 59 | 9 | 65 | 109 | 34 | 4 | 221 |
| Violence | 0 | 22 | 33 | 9 | 0 | 64 | 2 | 11 | 28 | 3 | 0 | 44 | 2 | 33 | 61 | 12 | 0 | 108 |
| Suicide | 0 | 24 | 35 | 3 | 0 | 62 | 0 | 7 | 5 | 1 | 0 | 13 | 0 | 31 | 40 | 4 | 0 | 75 |
| Submersion /Suffocation | 7 | 9 | 21 | 4 | 0 | 41 | 7 | 5 | 4 | 1 | 0 | 17 | 14 | 14 | 25 | 5 | 0 | 58 |
| Other | 0 | 2 | 13 | 3 | 2 | 20 | 1 | 2 | 4 | 2 | 6 | 15 | 1 | 4 | 17 | 5 | 8 | 35 |
| Natural Environment | 0 | 2 | 6 | 1 | 2 | 11 | 3 | 3 | 0 | 2 | 1 | 9 | 3 | 5 | 6 | 3 | 3 | 20 |
| Poisoning | 0 | 9 | 4 | 0 | 0 | 13 | 0 | 2 | 1 | 0 | 0 | 3 | 0 | 11 | 5 | 0 | 0 | 16 |
| Falls | 0 | 1 | 3 | 4 | 0 | 8 | 1 | 1 | 1 | 1 | 2 | 6 | 1 | 2 | 4 | 5 | 2 | 14 |
| Fire /Burns | 1 | 1 | 2 | 2 | 1 | 7 | 0 | 1 | 1 | 1 | 4 | 7 | 1 | 2 | 3 | 3 | 5 | 14 |
| Inanimate Forces | 1 | 1 | 2 | 1 | 0 | 5 | 1 | 0 | 1 | 0 | 0 | 2 | 2 | 1 | 3 | 1 | 0 | 7 |
| Medical Complication | 0 | 0 | 0 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 1 | 1 | 0 | 0 | 0 | 1 | 1 | 2 |
| Total | 14 | 119 | 199 | 55 | 7 | 394 | 19 | 49 | 74 | 18 | 16 | 176 | 33 | 168 | 273 | 73 | 23 | 570 |
| Non-Aboriginal | | | | | | | | | | | | | | | | | | |
| Transportation | 2 | 70 | 97 | 23 | 6 | 198 | 3 | 20 | 19 | 9 | 1 | 52 | 5 | 90 | 116 | 32 | 7 | 250 |
| Suicide | 0 | 31 | 88 | 50 | 7 | 176 | 0 | 6 | 15 | 5 | 2 | 28 | 0 | 37 | 103 | 55 | 9 | 204 |
| Submersion /Suffocation | 13 | 5 | 15 | 9 | 1 | 43 | 6 | 3 | 4 | 2 | 1 | 16 | 19 | 8 | 19 | 11 | 2 | 59 |
| Violence | 0 | 2 | 25 | 11 | 2 | 40 | 0 | 3 | 4 | 1 | 3 | 11 | 0 | 5 | 29 | 12 | 5 | 51 |
| Falls | 0 | 4 | 10 | 10 | 5 | 29 | 0 | 1 | 1 | 1 | 3 | 6 | 0 | 5 | 11 | 11 | 8 | 35 |
| Poisoning | 0 | 4 | 16 | 5 | 0 | 25 | 0 | 0 | 4 | 4 | 1 | 9 | 0 | 4 | 20 | 9 | 1 | 34 |
| Other | 0 | 1 | 8 | 3 | 4 | 16 | 0 | 2 | 5 | 0 | 6 | 13 | 0 | 3 | 13 | 3 | 10 | 29 |
| Fire /Burns | 2 | 4 | 8 | 1 | 1 | 16 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 4 | 8 | 1 | 1 | 16 |
| Inanimate Forces | 0 | 3 | 8 | 3 | 1 | 15 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 8 | 3 | 1 | 15 |
| Natural Environment | 0 | 2 | 6 | 0 | 0 | 8 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 6 | 0 | 0 | 8 |
| Medical Complication | 0 | 0 | 1 | 1 | 2 | 4 | 0 | 0 | 0 | 0 | 1 | 1 | 0 | 0 | 1 | 1 | 3 | 5 |
| Other | 0 | 0 | 2 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 0 | 2 |
| Total | 17 | 126 | 284 | 116 | 29 | 572 | 9 | 35 | 52 | 22 | 18 | 136 | 26 | 161 | 336 | 138 | 47 | 708 |

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Table A9: Age-specific admission rate due to injury by sex and indigenous status, Northern Territory public hospitals 1991-2000

| Age Group | Male | | | Female | | | All | | |
|--------------|-------------|----------------|-------------|-------------|----------------|--------------|-------------|----------------|-------------|
| | Aboriginal | Non-Aboriginal | Male Total | Aboriginal | Non-Aboriginal | Female Total | Aboriginal | Non-Aboriginal | All |
| 0-4 | 1958 | 1792 | 1860 | 1820 | 1356 | 1539 | 1892 | 1578 | 1704 |
| 5-9 | 2401 | 2060 | 2198 | 1755 | 1424 | 1554 | 2095 | 1751 | 1888 |
| 10-14 | 1873 | 2055 | 1983 | 1181 | 1055 | 1105 | 1535 | 1572 | 1557 |
| 15-19 | 3107 | 3219 | 3175 | 2049 | 1387 | 1663 | 2583 | 2365 | 2453 |
| 20-24 | 5083 | 3434 | 3936 | 4215 | 1291 | 2268 | 4647 | 2430 | 3137 |
| 25-29 | 6367 | 2861 | 3735 | 6339 | 1097 | 2515 | 6353 | 2024 | 3147 |
| 30-34 | 7119 | 2357 | 3376 | 7616 | 960 | 2549 | 7372 | 1695 | 2978 |
| 35-39 | 7015 | 2063 | 2971 | 7099 | 1012 | 2349 | 7059 | 1576 | 2676 |
| 40-44 | 6182 | 1851 | 2566 | 5777 | 899 | 1879 | 5971 | 1412 | 2242 |
| 45-49 | 5128 | 1723 | 2215 | 4610 | 901 | 1613 | 4854 | 1358 | 1939 |
| 50-54 | 4404 | 1645 | 2024 | 3883 | 990 | 1568 | 4128 | 1371 | 1825 |
| 55-59 | 4301 | 1859 | 2235 | 3209 | 1503 | 1919 | 3718 | 1719 | 2102 |
| 60-64 | 3805 | 2171 | 2463 | 3455 | 2161 | 2546 | 3609 | 2167 | 2499 |
| 65-69 | 4144 | 2840 | 3066 | 3803 | 2301 | 2741 | 3949 | 2622 | 2922 |
| 70-74 | 3604 | 3439 | 3469 | 4165 | 3443 | 3631 | 3917 | 3440 | 3546 |
| 75+ | 3504 | 5425 | 4944 | 3294 | 6373 | 5586 | 3388 | 5945 | 5297 |
| Total | 4051 | 2323 | 2789 | 3723 | 1250 | 1993 | 3887 | 1826 | 2412 |

Table A10: Number of admissions due to injury by age group, sex and indigenous status, Northern Territory public hospitals 1991-2000

| Age Group | Male | | | Female | | | All | | |
|--------------|--------------|----------------|--------------|-------------|----------------|--------------|--------------|----------------|--------------|
| | Aboriginal | Non-Aboriginal | Male Total | Aboriginal | Non-Aboriginal | Female Total | Aboriginal | Non-Aboriginal | All |
| 0-4 | 716 | 957 | 1673 | 612 | 698 | 1310 | 1328 | 1655 | 2983 |
| 5-9 | 836 | 1056 | 1892 | 551 | 691 | 1242 | 1387 | 1747 | 3134 |
| 10-14 | 576 | 968 | 1544 | 346 | 464 | 810 | 922 | 1432 | 2354 |
| 15-19 | 885 | 1446 | 2331 | 573 | 544 | 1117 | 1458 | 1990 | 3448 |
| 20-24 | 1359 | 2096 | 3455 | 1137 | 694 | 1831 | 2496 | 2790 | 5286 |
| 25-29 | 1549 | 2096 | 3645 | 1554 | 725 | 2279 | 3103 | 2821 | 5924 |
| 30-34 | 1393 | 1694 | 3087 | 1545 | 621 | 2166 | 2938 | 2315 | 5253 |
| 35-39 | 1090 | 1429 | 2519 | 1195 | 605 | 1800 | 2285 | 2034 | 4319 |
| 40-44 | 764 | 1157 | 1921 | 776 | 481 | 1257 | 1540 | 1638 | 3178 |
| 45-49 | 482 | 958 | 1440 | 487 | 401 | 888 | 969 | 1359 | 2328 |
| 50-54 | 312 | 733 | 1045 | 310 | 317 | 627 | 622 | 1050 | 1672 |
| 55-59 | 228 | 541 | 769 | 195 | 283 | 478 | 423 | 824 | 1247 |
| 60-64 | 143 | 375 | 518 | 166 | 245 | 411 | 309 | 620 | 929 |
| 65-69 | 99 | 323 | 422 | 122 | 178 | 300 | 221 | 501 | 722 |
| 70-74 | 56 | 233 | 289 | 82 | 192 | 274 | 138 | 425 | 563 |
| 75+ | 70 | 324 | 394 | 82 | 462 | 544 | 152 | 786 | 938 |
| Total | 10558 | 16386 | 26944 | 9733 | 7601 | 17334 | 20291 | 23987 | 44278 |

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Table A11: Number of admissions due to injury by injury mechanism, sex and indigenous status, Northern Territory public hospitals 1992-2001

| Injury Mechanism | Male | | | Female | | | NT All | | All |
|-------------------------|---------------|----------------|---------------|-------------|----------------|---------------|---------------|----------------|---------------|
| | Aboriginal | Non-Aboriginal | Male Total | Aboriginal | Non-Aboriginal | Female Total | Aboriginal | Non-Aboriginal | |
| Violence | 3216 | 1449 | 4665 | 4454 | 316 | 4770 | 7670 | 1765 | 9435 |
| Falls | 1407 | 3256 | 4663 | 1120 | 2113 | 3233 | 2527 | 5369 | 7896 |
| Transportation | 1398 | 3821 | 5219 | 829 | 1655 | 2484 | 2227 | 5476 | 7703 |
| Inanimate Forces | 1186 | 2377 | 3563 | 685 | 545 | 1230 | 1871 | 2922 | 4793 |
| Medical Complication | 811 | 1216 | 2027 | 955 | 788 | 1743 | 1766 | 2004 | 3770 |
| Natural Environment | 447 | 888 | 1335 | 350 | 479 | 829 | 797 | 1367 | 2164 |
| Attempted Suicide | 349 | 380 | 729 | 243 | 453 | 696 | 592 | 833 | 1425 |
| Fire /Burns | 461 | 462 | 923 | 271 | 133 | 404 | 732 | 595 | 1327 |
| Poisoning | 164 | 432 | 596 | 146 | 362 | 508 | 310 | 794 | 1104 |
| Submersion /Suffocation | 205 | 441 | 646 | 209 | 247 | 456 | 414 | 688 | 1102 |
| <i>Near Drowning</i> | <i>(20)</i> | <i>(72)</i> | <i>(92)</i> | <i>(15)</i> | <i>(35)</i> | <i>(50)</i> | <i>(35)</i> | <i>(107)</i> | <i>(142)</i> |
| Other | 914 | 1664 | 2578 | 471 | 510 | 981 | 1385 | 2174 | 3559 |
| All | 10,558 | 16,386 | 26,944 | 9733 | 7601 | 17,334 | 20,291 | 23,987 | 44,278 |

Table A12: Yearly admission rates due to injury by injury mechanism, Northern Territory public hospitals 1992-2001

| Year | Falls | Violence | Transportation | Medical Complication | Inanimate Force | Other | Natural Environment | Attempted Suicide | Fire /Burns | Poisoning | Submersion /Suffocation | All Injury |
|----------------|------------|------------|----------------|----------------------|-----------------|------------|---------------------|-------------------|-------------|-----------|-------------------------|-------------|
| 1992 | 498 | 418 | 337 | 183 | 224 | 158 | 69 | 41 | 74 | 77 | 39 | 2112 |
| 1993 | 589 | 535 | 435 | 184 | 280 | 239 | 118 | 51 | 85 | 82 | 50 | 2644 |
| 1994 | 569 | 482 | 399 | 247 | 302 | 220 | 128 | 50 | 86 | 84 | 55 | 2616 |
| 1995 | 574 | 507 | 483 | 253 | 280 | 240 | 104 | 73 | 63 | 71 | 65 | 2705 |
| 1996 | 573 | 372 | 559 | 202 | 211 | 157 | 109 | 80 | 57 | 67 | 56 | 2434 |
| 1997 | 496 | 421 | 587 | 244 | 229 | 100 | 111 | 78 | 64 | 54 | 44 | 2426 |
| 1998 | 554 | 447 | 458 | 324 | 240 | 144 | 114 | 74 | 58 | 60 | 46 | 2510 |
| 1999 | 604 | 479 | 355 | 348 | 237 | 201 | 99 | 76 | 79 | 43 | 73 | 2590 |
| 2000 | 571 | 469 | 345 | 323 | 261 | 227 | 136 | 105 | 83 | 36 | 78 | 2633 |
| 2001 | 572 | 599 | 335 | 389 | 230 | 230 | 139 | 95 | 80 | 42 | 80 | 2783 |
| <i>Average</i> | <i>561</i> | <i>472</i> | <i>428</i> | <i>276</i> | <i>249</i> | <i>192</i> | <i>114</i> | <i>73</i> | <i>72</i> | <i>61</i> | <i>59</i> | <i>2551</i> |

Injury in the Northern Territory 1991-2001

Table A13: Number of admissions due to injury by injury mechanism, sex, age group and indigenous status, Northern Territory public hospitals 1992-2001

| Injury Mechanism | Male | | | | | | Female | | | | | | All | | | | | |
|-------------------------|------------|-------------|-------------|-------------|------------|--------------|------------|-------------|-------------|-------------|------------|--------------|-------------|-------------|-------------|-------------|-------------|--------------|
| | 0-4 | 5-24 | 25-44 | 45-64 | 65+ | Male Total | 0-4 | 5-24 | 25-44 | 45-64 | 65+ | Female Total | 0-4 | 5-24 | 25-44 | 45-64 | 65+ | Total |
| Aboriginal | | | | | | | | | | | | | | | | | | |
| Violence | 27 | 776 | 2036 | 353 | 24 | 3216 | 39 | 1038 | 2932 | 416 | 29 | 4454 | 66 | 1814 | 4968 | 769 | 53 | 7670 |
| Falls | 159 | 743 | 326 | 127 | 52 | 1407 | 141 | 479 | 280 | 120 | 100 | 1120 | 300 | 1222 | 606 | 247 | 152 | 2527 |
| Transportation | 67 | 524 | 617 | 166 | 24 | 1398 | 54 | 257 | 391 | 104 | 23 | 829 | 121 | 781 | 1008 | 270 | 47 | 2227 |
| Inanimate Forces | 87 | 523 | 467 | 94 | 15 | 1186 | 63 | 209 | 327 | 72 | 14 | 685 | 150 | 732 | 794 | 166 | 29 | 1871 |
| Medical Complication | 46 | 142 | 345 | 209 | 69 | 811 | 36 | 103 | 445 | 297 | 74 | 955 | 82 | 245 | 790 | 506 | 143 | 1766 |
| Natural Environment | 64 | 180 | 144 | 51 | 8 | 447 | 40 | 133 | 133 | 37 | 7 | 350 | 104 | 313 | 277 | 88 | 15 | 797 |
| Attempted Suicide | 2 | 112 | 215 | 18 | 2 | 349 | | 78 | 153 | 12 | | 243 | 2 | 190 | 368 | 30 | 2 | 592 |
| Fire /Burns | 120 | 108 | 165 | 50 | 18 | 461 | 76 | 59 | 95 | 31 | 10 | 271 | 196 | 167 | 260 | 81 | 28 | 732 |
| Poisoning | 53 | 55 | 49 | 6 | 1 | 164 | 59 | 34 | 37 | 11 | 5 | 146 | 112 | 89 | 86 | 17 | 6 | 310 |
| Submersion /Suffocation | 49 | 99 | 36 | 20 | 1 | 205 | 66 | 97 | 28 | 14 | 4 | 209 | 115 | 196 | 64 | 34 | 5 | 414 |
| Other | 42 | 394 | 396 | 71 | 11 | 914 | 38 | 120 | 249 | 44 | 20 | 471 | 80 | 514 | 645 | 115 | 31 | 1385 |
| Total | 716 | 3656 | 4796 | 1165 | 225 | 10558 | 612 | 2607 | 5070 | 1158 | 286 | 9733 | 1328 | 6263 | 9866 | 2323 | 511 | 20291 |
| Non-Aboriginal | | | | | | | | | | | | | | | | | | |
| Violence | 18 | 419 | 783 | 203 | 26 | 1449 | 8 | 87 | 182 | 35 | 4 | 316 | 26 | 506 | 965 | 238 | 30 | 1765 |
| Falls | 273 | 1317 | 813 | 536 | 317 | 3256 | 214 | 669 | 313 | 395 | 522 | 2113 | 487 | 1986 | 1126 | 931 | 839 | 5369 |
| Transportation | 81 | 1548 | 1535 | 514 | 143 | 3821 | 46 | 640 | 609 | 272 | 88 | 1655 | 127 | 2188 | 2144 | 786 | 231 | 5476 |
| Inanimate Forces | 95 | 753 | 1075 | 410 | 44 | 2377 | 62 | 210 | 183 | 77 | 13 | 545 | 157 | 963 | 1258 | 487 | 57 | 2922 |
| Medical Complication | 62 | 169 | 381 | 372 | 232 | 1216 | 25 | 104 | 333 | 196 | 130 | 788 | 87 | 273 | 714 | 568 | 362 | 2004 |
| Natural Environment | 70 | 286 | 374 | 139 | 19 | 888 | 43 | 169 | 182 | 69 | 16 | 479 | 113 | 455 | 556 | 208 | 35 | 1367 |
| Attempted Suicide | | 105 | 221 | 43 | 11 | 380 | 1 | 161 | 221 | 67 | 3 | 453 | 1 | 266 | 442 | 110 | 14 | 833 |
| Fire /Burns | 65 | 127 | 178 | 73 | 19 | 462 | 41 | 31 | 41 | 15 | 5 | 133 | 106 | 158 | 219 | 88 | 24 | 595 |
| Poisoning | 129 | 75 | 167 | 52 | 9 | 432 | 115 | 92 | 121 | 28 | 6 | 362 | 244 | 167 | 288 | 80 | 15 | 794 |
| Submersion /Suffocation | 123 | 104 | 116 | 75 | 23 | 441 | 113 | 61 | 37 | 25 | 11 | 247 | 236 | 165 | 153 | 100 | 34 | 688 |
| Other | 41 | 663 | 733 | 190 | 37 | 1664 | 30 | 169 | 210 | 67 | 34 | 510 | 71 | 832 | 943 | 257 | 71 | 2174 |
| Total | 957 | 5566 | 6376 | 2607 | 880 | 16386 | 698 | 2393 | 2432 | 1246 | 832 | 7601 | 1655 | 7959 | 8808 | 3853 | 1712 | 23987 |

Injury in the Northern Territory 1991-2001

Table A14: Average length of stay due to injury by injury mechanism and age group, Northern Territory public hospitals 1992-2001

| Injury Mechanism | Age Group | | | | | | | | | | | | | | | Average | |
|-----------------------|-----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|-----------|-----------|-----------|----------|
| | 0-4 | 5-9 | 10-14 | 15-19 | 20-24 | 25-29 | 30-34 | 35-39 | 40-44 | 45-49 | 50-54 | 55-59 | 60-64 | 65-69 | 70-74 | | 75+ |
| Fire /Burns | 8 | 10 | 14 | 6 | 6 | 7 | 7 | 8 | 7 | 10 | 13 | 12 | 15 | 19 | 12 | 18 | 9 |
| Transportation | 6 | 6 | 5 | 6 | 7 | 7 | 8 | 9 | 9 | 10 | 10 | 9 | 12 | 12 | 13 | 14 | 8 |
| Medical Complication | 5 | 7 | 6 | 5 | 5 | 6 | 5 | 7 | 7 | 6 | 7 | 9 | 11 | 8 | 10 | 8 | 7 |
| Falls | 3 | 3 | 3 | 4 | 6 | 5 | 6 | 6 | 7 | 7 | 8 | 7 | 9 | 11 | 13 | 13 | 6 |
| Violence | 6 | 5 | 3 | 3 | 4 | 4 | 4 | 4 | 5 | 5 | 5 | 5 | 7 | 6 | 5 | 9 | 4 |
| Inanimate Forces | 4 | 4 | 4 | 3 | 3 | 4 | 4 | 4 | 5 | 4 | 5 | 5 | 5 | 9 | 4 | 7 | 4 |
| Poisoning | 1 | 2 | 5 | 6 | 6 | 5 | 2 | 5 | 3 | 3 | 3 | 5 | 6 | 4 | 8 | 9 | 3 |
| Attempted Suicide | 1 | - | 2 | 2 | 4 | 3 | 3 | 3 | 5 | 3 | 4 | 2 | 1 | 18 | 5 | 5 | 3 |
| Natural Environment | 2 | 2 | 2 | 2 | 2 | 2 | 3 | 3 | 4 | 4 | 3 | 4 | 4 | 5 | 2 | 8 | 3 |
| Submersion/Suffocatio | 1 | 2 | 3 | 2 | 3 | 3 | 4 | 2 | 2 | 4 | 3 | 2 | 3 | 2 | 2 | 2 | 2 |
| Other | 4 | 5 | 3 | 4 | 4 | 4 | 5 | 4 | 6 | 5 | 5 | 8 | 5 | 8 | 9 | 7 | 4 |
| <i>Average</i> | <i>4</i> | <i>4</i> | <i>4</i> | <i>4</i> | <i>5</i> | <i>4</i> | <i>5</i> | <i>5</i> | <i>6</i> | <i>6</i> | <i>7</i> | <i>7</i> | <i>9</i> | <i>10</i> | <i>11</i> | <i>12</i> | <i>5</i> |

Note: length of stay is measured in days.

Table A15: Number and rates of interstate transfers due to injury by age group, Northern Territory residents from 1995-96 to 2000-01

| Age Group | Number | Rate (per 100,000 population) |
|------------------------|-------------|-------------------------------|
| 0-4 | 75 | 85 |
| 5-9 | 48 | 56 |
| 10-14 | 43 | 55 |
| 15-19 | 99 | 136 |
| 20-24 | 142 | 168 |
| 25-29 | 174 | 175 |
| 30-34 | 166 | 183 |
| 35-39 | 147 | 174 |
| 40-44 | 92 | 124 |
| 45-49 | 108 | 167 |
| 50-54 | 89 | 168 |
| 55-59 | 52 | 150 |
| 60-64 | 41 | 198 |
| 65-69 | 34 | 255 |
| 70-74 | 19 | 211 |
| 75+ | 23 | 226 |
| Total (Average) | 1352 | (140) |

Injury in the Northern Territory 1991-2001

Table A16: Number of ED presentations due to injury by age group, sex and indigenous status, Northern Territory public hospitals 1998-2001

| Age Group | Male | | | Female | | | All Persons | | |
|--------------|---------------|----------------|---------------|---------------|----------------|---------------|---------------|----------------|----------------|
| | Aboriginal | Non-Aboriginal | Male Total | Aboriginal | Non-Aboriginal | Female Total | Aboriginal | Non-Aboriginal | Total |
| 0-4 | 1436 | 3514 | 4950 | 1121 | 2588 | 3709 | 2557 | 6102 | 8659 |
| 5-9 | 1318 | 3291 | 4609 | 902 | 2327 | 3229 | 2220 | 5618 | 7838 |
| 10-14 | 1093 | 4002 | 5095 | 763 | 2411 | 3174 | 1856 | 6413 | 8269 |
| 15-19 | 1818 | 5329 | 7147 | 1387 | 2482 | 3869 | 3205 | 7811 | 11016 |
| 20-24 | 2599 | 6401 | 9000 | 2255 | 2911 | 5166 | 4854 | 9312 | 14166 |
| 25-29 | 3197 | 7054 | 10251 | 3387 | 3051 | 6438 | 6584 | 10105 | 16689 |
| 30-34 | 3225 | 5614 | 8839 | 3515 | 2441 | 5956 | 6740 | 8055 | 14795 |
| 35-39 | 2459 | 4801 | 7260 | 2545 | 2167 | 4712 | 5004 | 6968 | 11972 |
| 40-44 | 1575 | 3570 | 5145 | 1746 | 1784 | 3530 | 3321 | 5354 | 8675 |
| 45-49 | 994 | 2771 | 3765 | 970 | 1578 | 2548 | 1964 | 4349 | 6313 |
| 50-54 | 586 | 2267 | 2853 | 644 | 1208 | 1852 | 1230 | 3475 | 4705 |
| 55-59 | 294 | 1538 | 1832 | 272 | 860 | 1132 | 566 | 2398 | 2964 |
| 60-64 | 164 | 978 | 1142 | 157 | 607 | 764 | 321 | 1585 | 1906 |
| 65-69 | 102 | 657 | 759 | 132 | 352 | 484 | 234 | 1009 | 1243 |
| 70-74 | 56 | 400 | 456 | 65 | 294 | 359 | 121 | 694 | 815 |
| 75+ | 73 | 469 | 542 | 80 | 731 | 811 | 153 | 1200 | 1353 |
| Total | 20,989 | 52,656 | 73,645 | 19,941 | 27,792 | 47,733 | 40,930 | 80,448 | 121,378 |

Table A17: Annual costs for admissions due to injury by year, sex and indigenous status, Northern Territory public hospitals, 1992-2001

| Year | Male | | | Female | | | All Persons | | |
|--------------|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|--------------------|
| | Aboriginal | Non-Aboriginal | Male Total | Aboriginal | Non-Aboriginal | Female Total | Aboriginal | Non-Aboriginal | Total |
| 1992 | 2,250,789 | 3,740,228 | 5,991,017 | 1,804,540 | 1,507,256 | 3,311,796 | 4,055,329 | 5,247,484 | 9,302,813 |
| 1993 | 2,571,043 | 3,928,646 | 6,499,689 | 2,236,044 | 1,807,493 | 4,043,537 | 4,807,087 | 5,736,139 | 10,543,226 |
| 1994 | 2,926,815 | 4,128,851 | 7,055,666 | 2,175,615 | 1,678,878 | 3,854,493 | 5,102,431 | 5,807,729 | 10,910,160 |
| 1995 | 2,915,981 | 5,281,806 | 8,197,787 | 2,463,270 | 1,943,098 | 4,406,367 | 5,379,251 | 7,224,904 | 12,604,155 |
| 1996 | 2,536,404 | 4,630,983 | 7,167,387 | 2,260,556 | 2,243,027 | 4,503,583 | 4,796,960 | 6,874,010 | 11,670,970 |
| 1997 | 3,325,383 | 5,071,684 | 8,397,067 | 2,479,145 | 2,097,474 | 4,576,620 | 5,804,528 | 7,169,158 | 12,973,686 |
| 1998 | 3,748,109 | 5,162,349 | 8,910,458 | 2,897,740 | 2,092,275 | 4,990,015 | 6,645,849 | 7,254,624 | 13,900,474 |
| 1999 | 3,922,766 | 4,760,113 | 8,682,879 | 3,475,079 | 2,188,929 | 5,664,008 | 7,397,845 | 6,949,042 | 14,346,888 |
| 2000 | 3,745,900 | 5,403,871 | 9,149,771 | 2,941,257 | 2,134,643 | 5,075,900 | 6,687,158 | 7,538,514 | 14,225,671 |
| 2001 | 3,149,345 | 3,936,717 | 7,086,061 | 2,872,574 | 1,943,379 | 4,815,953 | 6,021,919 | 5,880,096 | 11,902,014 |
| Total | 31,092,536 | 46,045,248 | 77,137,783 | 25,605,820 | 19,636,453 | 45,242,273 | 56,698,356 | 65,681,701 | 122,380,056 |

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