injury matters

PREVENTION TO RECOVERY

WESTERN AUSTRALIAN FALLS REPORT 2019

Incidence of falls-related fatalities, hospitalisations and emergency department attendances

Partner:

Government of **Western Australia**
Department of **Health**

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Injury Matters acknowledge the Whadjuk Noongar people as the traditional custodians of the land on which we live and work, and recognises Aboriginal and Torres Strait Islander peoples continuing connection to land, waters and community across Western Australia.

about injury matters

Injury Matters aims to prevent and reduce the impact of injury within the Western Australian community.

We work to have a positive impact on the community as a quality, sustainable organisation committed to creating safer people and places. We raise awareness of injury prevention and recovery by providing education, advocacy, and support for those affected by the impact of injury.

Given the breadth and diversity of injury in Western Australia (WA), we have worked across a range of current and emerging injury priority areas affecting the community. This includes falls, trauma recovery, community violence, substance-related harm, and safety promotion. We influence, empower and collaborate with people, agencies, communities and governments for positive injury outcomes.

Engage with us at www.injurymatters.org.au for more information and to sign up to our newsletter.

STAY ON YOUR FEET®

Funded by the Western Australian Department of Health, Injury Matters has delivered the Stay On Your Feet® program since 2001.

Stay On Your Feet® is WA's leading falls prevention program for older adults living in the community. Stay On Your Feet® aims to prevent falls and falls-related injuries among older adults and promotes how to keep active and alert through the Move Improve Remove campaigns. Move Your Body, Improve Your Health, and Remove Hazards are three steps to keep active and alert to prevent slips, trips and falls.

Move Improve Remove

www.stayonyourfeet.com.au

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FOREWORD

It is with great pride that I am able to introduce Injury Matters' inaugural Western Australian Falls Report. The work that Injury Matters has undertaken in partnership with the WA Department of Health is important in painting a picture of the current state of falls in WA. This is, however, mixed with sadness due to the impact that falls continue to have on WA families.

Falls are a significant public health issue, ranking as the leading cause of injury fatalities and injury hospitalisations in WA.[1]

They contribute to more than 20% of all injury hospitalisations and fatalities in WA.[1] The potential consequences of falls, including fractures and traumatic brain injuries, affects the individual who experienced the fall, their carers, families and the healthcare system.

Given WA's ageing population[2], without greater intervention, it is anticipated that the burden of falls in WA will increase.

Alongside the direct burden of falls-related fatalities and hospitalisations, a fall can increase an individual's fear of falling and decrease their confidence, social activity, mobility and physical activity.[3] All of which compound the impact of a fall, affecting their quality of life and placing the individual at higher risk of another fall.

This report provides an insight into the incidence of falls-related fatalities, hospitalisations, emergency department attendances and ambulance transportations in WA. Alongside the high overall incidence of falls in WA, the report indicates that older adults, individuals living in regional areas and Aboriginal and Torres Strait Islander peoples experience higher rates of falls-related injuries in WA.

While the findings of this report highlight the burden that falls and falls-related injuries have on the WA community, it is important to remember behind every number in this report are stories of Western Australians that have been impacted by falls.

Falls are multifactorial with biological, behavioural, environmental and socioeconomic factors influencing the likelihood of a person experiencing a fall.[4] There are a number of actions that can prevent falls occurring including Moving Your Body, Improving Your Health, and Removing Hazards.

Thankfully, there is a workforce of dedicated professionals and organisations, like Injury Matters, working across WA to reduce the incidence of falls and support Western Australians to maintain their independence and quality of life. Reinforcing the great work being conducted across WA, this report includes case studies to highlight WA falls prevention activities.

WA is fortunate to have consistent support for prevention of falls through the Stay On Your Feet® program. There is opportunity to do more, including shifting attitudes towards falls, access to robust falls surveillance data and affordable evidence based strength and balance exercise options for older adults.

Shifting attitudes towards falls

Attitudes towards falls need to change. Research proves that falls are not an inevitable part of ageing, however, to make significant advances in reducing falls we need to change people's perceptions of injury and falls.

Doing this takes time and consistent effort. We need to innovate our approaches to change behaviour and continue to encourage positive active ageing.

Access to robust falls surveillance data

Opportunities still exist to improve injury surveillance monitoring and sharing of data in WA. While the development of this report is significant, we hope that future iterations of this report will provide greater detailed data to influence policy decisions. We recognise the need to broaden the scope of this report to show the scale of falls among in-patients and falls in frail older people who live in residential care settings.

Affordable evidence based strength and balance exercise options for older adults

While there is extensive evidence to demonstrate the protective nature of strength and balance exercises for older adults, access to affordable exercise programs that prevent falls for older adults remains limited. Reducing barriers such as cost and availability of exercise classes will improve participation for older adults. Finding opportunities to leverage existing funded services is essential to ensuring the sustainable delivery of programs.

To help us in reducing the impact of injuries in WA, I encourage you to share the report's findings and engage in falls prevention activities provided by Injury Matters. Falls are everybody's business and they are preventable.

Sandy Lukjanowski

Chief Executive, Injury Matters

PURPOSE OF THE REPORT

This report provides the diverse falls prevention sector with a central report, which outlines:

- The incidence of falls in WA: Fatalities, hospitalisations, emergency department attendances and ambulance transportation.
- Populations at risk: Population groups experiencing a higher incidence of falls in WA.
- Diagnoses: Injury diagnoses following a fall in WA.
- Causes: Mechanism of falls in WA.

With limited resources available to support falls prevention initiatives, gaining an overview of these concepts is vital to reducing the impact of falls in WA.

Falls are defined as "inadvertently coming to rest on the ground, floor or other lower level, excluding intentional change in position to rest in furniture, wall or other objects".[4]

TECHNICAL NOTES

This report includes data collated from several sources. Falls-related hospitalisations and emergency department visits in WA from 1 January 2017 to 31 December 2017 were identified from the WA Department of Health Hospital Morbidity Data System and Emergency Department Data Collection. Falls-related fatalities in WA from 1 January 2016 to 31 December 2016 were identified from the Australian Bureau of Statistics Mortality Data collection. Unless otherwise noted, all data included within this report were obtained from these data sources through the WA Department of Health Epidemiology Branch.[1]

Falls-related fatalities and hospitalisations have been identified as W00 to W19 within the International Classification of Diseases and Related Health Problems, Tenth Revision, Australian Modification (ICD-10-AM). Falls-related emergency department attendances were identified as an external cause code of 3 to 6. External cause codes are often incomplete in regional emergency departments and therefore all emergency department data[1] presented in this report is for WA metropolitan residents only.

To provide further breakdown of the incidence of falls-related hospitalisations in WA, data were obtained from the WA Department of Health Inpatient Data Collection Branch.[5] This dataset includes falls-related incidence with an ICD-10-AM code of W00 to W19, a metropolitan hospital Symptom Code of KMA00, KMB00 or KMC00, or a metropolitan hospital External Cause Code of 3, 4, 5 or 6. Due to the different coding methods, the counts within this dataset varies to the primary source of data listed above. Therefore, the total data counts displayed for causes of hospitalisation (p.17) and alcohol related falls (p.17) are different than the data[2] included in the rest of the report.

In order to succinctly present causes of hospitalisations, categories have been collapsed into general categories, see p. 19. The ICD-10-AM codes included within each category includes: Fall on same level from slipping, tripping, and stumbling (W01.0-01.2); Fall involving pedestrian conveyance (W02.0-02.9); Fall from bed (W06.0-06.9); Fall from chair (W07.0-07.9); Fall from playgroup equipment (W09.0-09.9); Fall from an escalator, curb, stairs, or steps (W10.0-10.2, W10.9); Fall on or from ladder (W11.); Fall from, out of, or through a balcony, bridge, roof, floor or other structure (W13.0-13.5, W13.8-13.9); Fall from one level to another (W17.0-17.3, W17.5, W17.8-17.9); Fall from, off, or into an object on the same level (W18.0-18.2, W18.8-18.9); Unspecified fall (W19.) and other (W00., W03., W04., W05., W08.0-08.9, W12., W14., W15., W16.0-W16.2-W16.9).

Summary descriptions of St John WA ambulance data were provided by the Prehospital, Resuscitation and Emergency Care Research Unit (PRECRU) at Curtin University (School of Nursing, Midwifery and Paramedicine).

The following includes definitions to interpret the data.

Age-Standardised Rates (ASR) were calculated per 100,000 person years. Direct standardisation used all age groups of the 2001 Australian Standard Population to compare rates between population groups and different years for the same population group.
Age Specific Rates (ASpR) included within this report were calculated by dividing number of events such as hospital admissions for an age group by its respective population for that age group. These rates are provided per 100,000 person years.
Average Length of Stay includes the average of the lengths of stay for all hospital episodes of care.
Emergency Department attendances included within this report refers to falls-related incidents in which a metropolitan resident presented to an emergency department in WA.
Fatalities identified within this report are deaths which were allocated as falls-related.
Hospitalisations are defined as an emergency or elective falls-related episode of care in a hospital. This does not include emergency department presentations.
Hospitalisation costs are derived based on Australian Refined Diagnostic Related Group average costs from the National Hospital Cost Data Collection. Total cost is calculated without adjustment for CPI. Thus do not compare with cost data for other years.
Standardised rate ratios (SRR) included within this report refer to the ratio of two standardised rates between a particular health region and that of the WA State population. Indirect standardisation method was used.

Limitations
There are limitations to identifying the exact incidence of falls-related injuries in WA. This can be attributed to challenges associated with coding fatalities, hospitalisations and emergency department attendances across different data sources. These challenges include the use of human discretion in the coding process and difficulties identifying a fall as the underlying cause of the fatality, hospitalisation or emergency department attendance. In addition to these coding challenges, many falls-related injuries are treated at home or in general practice and are not captured in the aforementioned data sources. Therefore, the data included within this report must be viewed as an indicative measure rather than the exact prevalence of falls-related injuries in WA.

KEY FINDINGS

In Western Australia...

EVERY 20 MINUTES
someone was admitted to hospital for a fall-related injury in 2017

336 falls-related fatalities in 2016

26,338 falls-related hospitalisations in 2017

Males experienced a higher rate of fatalities in 2016

43,408 falls-related emergency department attendances in 2017

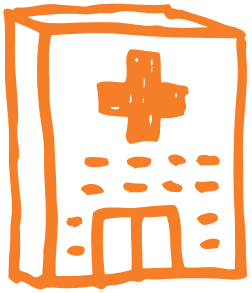
Females experienced a **higher rate of falls-related hospitalisations** and emergency department attendances in 2017.

Kimberley and **Midwest** residents had the **highest rate** of falls-related hospitalisations in 2017

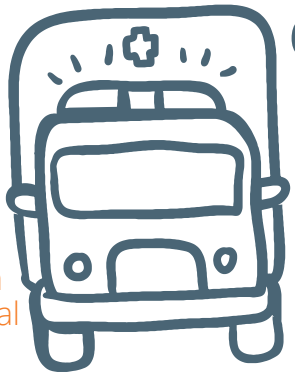
133% higher than the state rate

21.7% higher than the state rate

A WESTERN AUSTRALIAN **DIED FROM A FALL EVERY 26 HOURS** IN 2016



Individuals aged **65+** recorded the higher rate of falls-related fatality, hospitalisation and longest average stay in hospital compared to other age groups (7.75 days)



One of every eight emergency ambulance incidents in Perth was **dispatched as a fall** from 1 July 2014 to 30 June 2015

FALLS-RELATED INJURIES IN WA

In WA falls were the leading cause of injury hospitalisations in 2017 and the leading cause of injury fatalities in 2016.[1] The following data relating to fatalities, hospitalisations and metropolitan emergency department attendances was provided by the WA Department of Health Epidemiology Branch.[1]

Fatalities

There were 336 falls-related fatalities in WA between 1 January 2016 and 31 December 2016, equating to 11.5 fatalities per 100,000 population.

Hospitalisations

In 2017 there were 26,338 falls-related hospitalisations, an age-standardised rate of 960.7 per 100,000 population. These falls-related hospitalisations resulted in an average of 6 days in hospital per admission.

Falls-related hospitalisations resulted in 157,738 annual bed days, at an estimated cost of $223,524,324.

Emergency department attendances

There were 43,408 emergency department (ED) attendances in WA in 2017 as a result of falls-related injuries. The age-standardised rate of emergency department attendances was 2,114.8 attendances per 100,000 population.

Of the falls-related emergency department attendances, 72.5% (n=31,470) arrived by private transport followed by 27.2% (n=11,784) arriving via an ambulance.

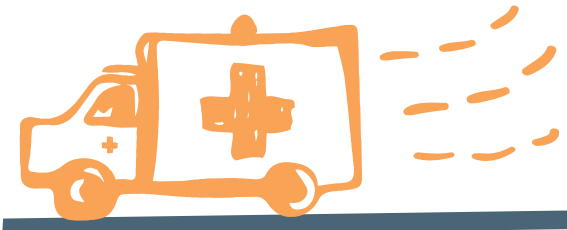
The most common triage categories assigned to falls-related emergency department attendances was 'semi-urgent' (57.8%, n=25,088), followed by 'urgent' (33.2%, n=14,401).

St John WA Ambulance data

Summary descriptions of St John WA ambulance data were provided by the Prehospital, Resuscitation and Emergency Care Research Unit (PRECRU) at Curtin University (School of Nursing, Midwifery and Paramedicine).[7]

In the Perth metropolitan area between 1 January 2014 and 30 June 2015, there were 211,473 emergency ambulance responses. Of all ambulance responses, 12.5% (n=26,519) were for falls, a far higher number than for traffic injuries (3.7%), assaults (2.5%) or strokes (2.5%) combined.[7]

One out of every eight emergency ambulance incidents in Perth was dispatched as a fall, totalling just under 18,000 cases per year.[7] Of those cases, about 3,000 per year were dispatched as Priority 1, which is the only dispatch priority that allows "lights and sirens".[7]



In 2014-15 more ambulances were dispatched for falls than traffic injuries, assaults and strokes combined.[7]

FALLS AMBULANCE DATA | CASE STUDY

The following data refers to the period 1 January 2013 to 31 December 2016.[8] This case study describes patients transported by a St John WA ambulance in metropolitan Perth and does not include patients who arrived at hospital by some other means.[8] St John WA ambulance data is analysed by the Prehospital, Resuscitation and Emergency Care Research Unit (PRECRU) at Curtin University (School of Nursing, Midwifery and Paramedicine). Depending on the nature of each project, St John WA ambulance data may be linked with data from the WA Deaths Registry, the State Trauma Registry, or other datasets. In addition to research investigating cardiac arrest, stroke, resuscitation and motor vehicle trauma, PRECRU analyses St John WA ambulance data for falls.

Linkage with State Trauma Registry data

Major trauma is often classified as having an injury severity score higher than 15.[9] There were 1,625 ambulance transported major trauma patients aged 16 or older described in the State Trauma Registry (these did not include patients who died before reaching hospital or who were treated at a hospital that did not contribute data to the State Trauma Registry). Of the 1,625 major trauma patients who were transported by ambulance, 682 (42%) had injuries that were defined in the registry as from falls, averaging 170 major trauma patients injured by falls per year.[10]

The median age was 66 years for males (n=410, 60% were male) and 81 years for females (n=272, 40%).[10] Two thirds of the injured (n=460) fell from standing height and one-third (n=222) fell from a greater height. Among the falls from a greater height 56/222 (25%) had severe head injuries and 56/222 (25%) had critical head injuries.[10] Among falls from standing height, however, 193/460 of the patients (42%) had severe head injuries and 195/460 of the patients (42%) had critical head injuries.[10] The evidence shows that, of the falls that had major trauma, those from standing height more commonly had severe or critical head injuries than falls from levels greater than standing height.

The median stay in hospital for these major trauma patients was one week before either death or discharge.[10] Around one-in-ten died on the first day in hospital, one-in-five died within a week and one-in-four died within a month.[10]

New developments

In the current St John WA ambulance data, there was no specific entry field to identify the mechanism of injury as a fall.[11] PRECRU are currently developing a model that will be used to screen paramedic text descriptions for each patient's medical emergency and pre-hospital treatment. This model will estimate the probability of each case being a fall, by apportioning a weight to certain keywords in the case notes, and taking into account relationships between certain words, e.g. "fell, suddenly, unconscious". This work will soon enable PRECRU to extract falls cases out of hundreds of thousands of ambulance patient records to help accurately reflect the impact of falls on the community.

GENDER

Gender data collection within WA is limited to females and males, therefore the following data is based on whether the person identified as male or female. The gender breakdown for individuals who sought medical attention following a fall varied between fatalities, hospitalisations, and metropolitan emergency department attendances. The following data was generated from the WA Department of Health Epidemiology Branch.[1]

Fatalities

Females accounted for just over half (52.1%, n=175) of all falls-related fatalities in WA in 2016. The age-standardised fatality rate for males was slightly higher at 13.5 per 100,000 population compared with that of females (9.8 per 100,000 population).

Hospitalisations

Overall, the WA age-standardised rate of falls-related hospitalisations in 2017 was significantly higher among females, with 988.1 hospitalisations per 100,000 females (n=14,742) compared to 916.5 hospitalisations per 100,000 males (n=11,596).

On average, female patients also stayed in hospital longer than males, at 6.1 and 5.8 days respectively. Higher hospitalisation rates and average length of stay is reflected in females experiencing a greater number of bed days spent in hospital (90,531 vs 67,207) and a higher total hospitalisation cost ($125,357,835 vs $98,166,489) compared to males.

Emergency department attendances

Falls-related emergency department attendances in 2017 were higher among females, with 2,108.2 ED attendances per 100,000 females (n=22,509), compared to 2,095.5 ED attendances per 100,000 males (n=20,893).

Figure 1 demonstrates the number of falls-related fatalities by gender in WA and Figure 2 displays the number of falls-related hospitalisations and ED attendances by gender in WA.

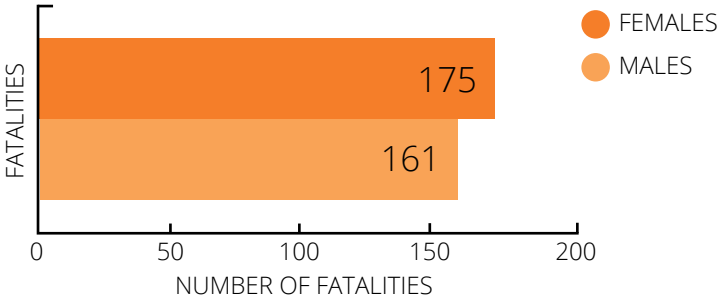


Figure 1 Number of falls-related fatalities (2016) by gender, WA.[1]

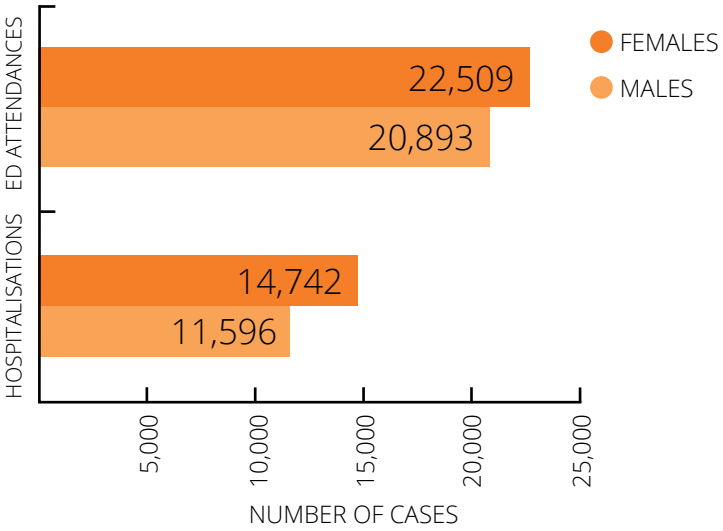


Figure 2 Number of falls-related hospitalisations (2017) and metropolitan emergency department attendances (2017) by gender, WA.[1]

health and wellbeing survey 2017

Every month the WA Department of Health randomly selects approximately 550 households to take part in a telephone survey as part of the Western Australian Health and Wellbeing Surveillance System. The results from the survey assist in monitoring the health status and identifying health needs of Western Australians.

Data collected through the Western Australian Health and Wellbeing Surveillance System indicates that in 2017, 7.6% of respondents experienced an injury as a result of fall.[12] When analysing incidence by gender, 9.7% of females and 5.4% of males indicated that they experienced an injury as the result of a fall in the past 12 months.[12]

FLORIAN, 76 | CASE STUDY

Having previously experienced a couple of falls, 76-year-old Florian recognises the value of participating in falls prevention activities, including conducting exercises that improve her strength and balance.

Using the Stay On Your Feet® Build Your Balance Exercise Video and print resources as a foundation, Florian formed an exercise group for the residents at her retirement village. Since starting the exercise group, Florian and her fellow participants meet once a week and have experienced many physical and social benefits.

> "We've noticed that our balance has improved greatly…it has been good, not just physically but socially… when I moved here three years ago I didn't know anybody in Perth except family and doing these exercises has meant that it's a way of getting together with people."
>
> [Florian]

Participating in the exercise group has also opened up conversations around other factors that support Florian's falls prevention, such as wearing the correct footwear, removing hazards in the home and checking her glasses prescription.

Florian completes all of the Stay On Your Feet® activities because she aims to be 100, as she wants the Queen's letter.

To see a full video of Florian's story, visit www.injurymatters.org.au/get-inspired-by-florians-falls-prevention-movement

AGE

Age is broken into categorised ranges across the lifespan, see Table 1 for a complete list. Individuals aged 65 years and older were most impacted by falls-related injuries. Table 1 provides details of the numbers and age specific rates (ASpR) of falls-related fatalities, hospitalisations and metropolitan emergency department attendances by age group in WA.[1]

Fatalities

In 2016, the number and rate of falls-related fatalities increased across the lifespan with the highest age specific rates observed for individuals 65 years and over (89.5 per 100,000 population, n=317).

Hospitalisations

Falls-related hospitalisations in 2017 were greatest for those aged 65 years and older (n=15,898) with 4,416.4 presentations per 100,000 population. Individuals aged 45 to 64 years (n=4,282) followed with 675.7 hospital presentations per 100,000 population. Due to only a small portion of the population falling within the zero to four age group, only 1,150 hospitalisations were recorded for individuals aged zero to four years. However this age group experienced the third highest hospitalisation rate of 661.8 hospitalisations per 100,000 population.

Those aged 65 years and older also experienced the greatest total bed days (123,170), costing $150,990,961. As illustrated in Figure 3, the average length of stay in hospital following a fall-related injury increased with age, with the highest length of stay recorded for individuals aged 65 years and over (7.8 days).

Emergency department attendances

The 2017 falls-related emergency department attendances followed a different trend to hospitalisations and fatalities, with children aged zero to four years (n=6,352; 4,633.6 per 100,000 people) and 65 years and over (n=11,876; 4,196.0 per 100,000) experiencing the highest age specific rate and number of emergency department attendances for falls-related presentations.

Over half of injuries experienced by Western Australians aged 65+ are the result of a fall.[12]

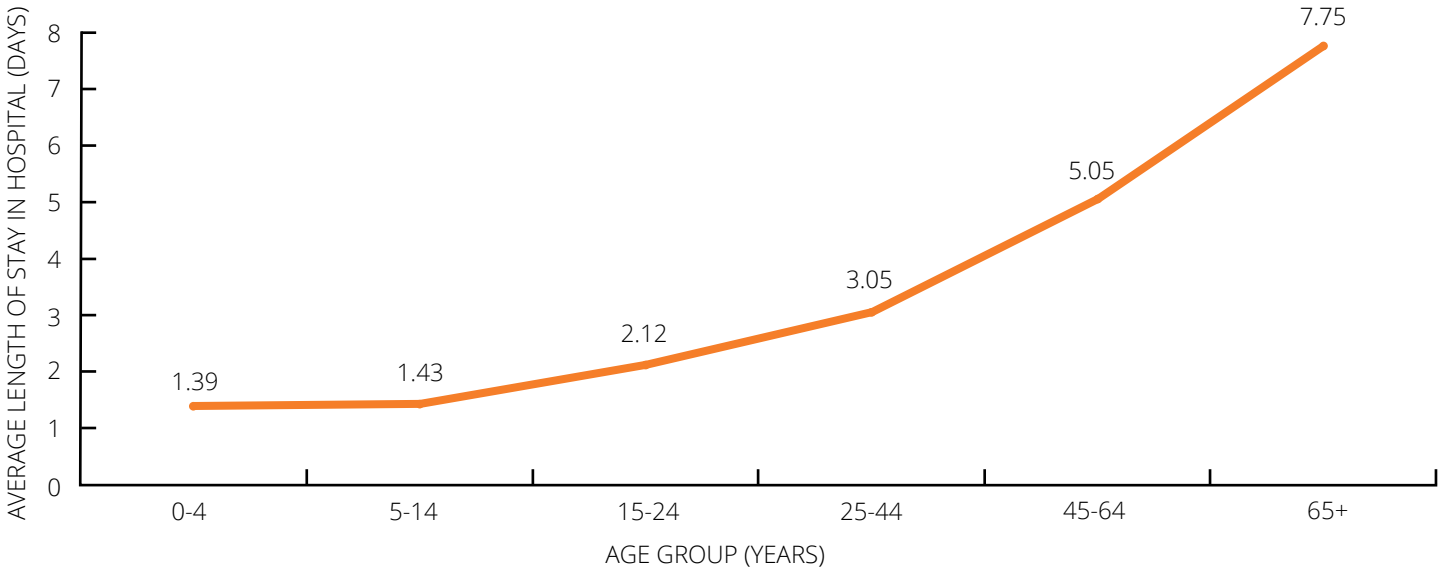


Figure 3 Average length of stay in hospital following a falls-related hospitalisation by age groups, WA, 2017.[1]

	0-4		5-14		15-24		25-44		45-64		65+		TOTAL
	n	ASpR*	n	ASpR	n	ASpR	n	ASpR	n	ASpR	n	ASpR	Number
FATALITIES	<5	N/A	<5	N/A	<5	N/A	<5	N/A	13	2	317	89.5	336
HOSPITALISATIONS	1,150	661.8	1,885	573.9	938	288.8	2,185	289.5	4,282	675.7	15,898	4,416.4	26,338
ED ATTENDANCES	6,352	4,633.6	9,886	3,869.2	4,126	1,544.7	5,475	897.8	5,693	1,160.3	11,876	4,196.0	43,408

Table 1 Number and age specific rate (ASpR) of falls-related fatalities (2016), hospitalisations (2017) and metropolitan emergency department attendances (2017) by age groups, WA.[1]
Notes: *Age Specific Rate per 100,000 people**.** Counts less than 5 have been suppressed with "<5" for confidentiality reasons.

age and falls

Due to the many health problems that are risk factors for falls, as well as age related biological changes (including decreased muscular strength, cardiovascular output, muscle mass and balance), older adults are at a heightened risk of experiencing a fall.[4]

With the average age in WA continuing to increase[2], additional prevention measures can help to reduce the prevalence of falls. Despite the frequency and severity of falls increasing with age, falls prevention activities and healthy lifestyle behaviours reduce an individual's likelihood of experiencing a fall in later life.[13] Good nutrition and physical activity, including strength and balance exercises, support the development of strong bones and muscular tissues for healthy ageing.[4]

LOCATION

For WA, location is determined by the health service areas and consists of 10 regions. Due to the incomplete use of external cause codes in regional emergency departments, only metropolitan emergency department data is included within this report.

Residents from the metropolitan areas of WA had the greatest number of fatalities, hospitalisations, emergency department attendances, bed days, and costs due to falls. However, the Kimberley and Midwest saw the greatest rates of falls-related hospitalisations in the state and residents from the Great Southern and South West experienced the highest rate of falls-related fatalities.

The following data were generated from the WA Department of Health Epidemiology Branch.[1]

Fatalities

In 2016, individuals residing in the Great Southern and South West regions experienced the highest standardised rate ratio of falls-related fatalities at 1.37 and 1.23 times the overall state rate.

Hospitalisations

The North (n=7,048), South (n=7,043) and East (n=6,504) Metropolitan health regions had the highest number of falls-related hospitalisations.

In 2017, individuals residing in the Kimberley (n=527) and Midwest (n=809) health regions experienced the highest age-standardised rate of falls-related hospitalisations, 2,040.9 and 1,174.7 per 100,000 population respectively.

Kimberley residents experienced falls-related hospitalisations 133% higher than the state rate, while residents in the Midwest region experienced falls-related hospitalisations 21.7% higher than the state rate, see Table 2.

Despite the majority of WA regional areas experiencing age-standardised rates greater than the metropolitan regions, the Great Southern region experienced the longest average length of stay in hospital due to falls-related injuries, as seen in Figure 4. The South ($61,367,956), North ($60,318,588) and East ($56,620,664) Metropolitan health regions had the greatest costs associated to falls.

Emergency department attendances

Individuals in the North Metropolitan health region of WA experienced a higher age-standardised rate of emergency department attendances than South and East Metropolitan residents, at 2,415.4, 2,048.1 and 1,865.1 per 100,000 population respectively.

Table 2 outlines the numbers and rates of fatalities, hospitalisations and ED attendances across each WA health region.

Residents in the Kimberley and Midwest health regions experienced the highest rate of falls-related hospitalisation. Meanwhile, 78% of falls-related fatalities occured in the metropolitan area.[1]

WA HEALTH REGION	FATALITIES (n=336)			HOSPITAL ADMISSIONS (n=26,338)			ED ATTENDANCES (n=43,408)		
	n	ASR	SRR	n	ASR	SRR	n	ASR	SRR
EAST METRO	75	10.68	0.92	6,504	950.81	0.990	12,520	1,865.13	0.88
NORTH METRO	85	10	0.89	7,048	910.90	0.951	17,494	2,415.44	1.14
SOUTH METRO	102	12.47	1.1	7,043	958.96	1.013	13,394	2,048.05	0.96
GOLDFIELDS	<5	-	-	447	945.50	1.000	-	-	-
GREAT SOUTHERN	15	-	1.37	648	791.63	0.829	-	-	-
KIMBERLEY	<5	-	-	527	2,040.94	2.330	-	-	-
MIDWEST	6	-	0.67	809	1,174.66	1.217	-	-	-
PILBARA	<5	-	-	331	913.58	1.060	-	-	-
SOUTH WEST	31	13.65	1.23	1,993	968.30	0.999	-	-	-
WHEATBELT	14	-	1.11	920	979.71	1.010	-	-	-
UNKNOWN	-	-	-	68	-	-	-	-	-
ALL	336	11.45	1.00	26,338	960.69	1.00	43,408	2,114.77	1.00

Table 2 Number, age-standardised rate (ASR) and standardised rate ratio (SRR) of falls-related fatalities (2016), hospitalisations (2017) and metropolitan emergency department attendances (2017) by health region, WA.[1]
Notes: Age-standardised rates are only provided for counts >20 and standardised rate ratios (SRR) are only provided for counts >5. Regional ED attendances are not available.

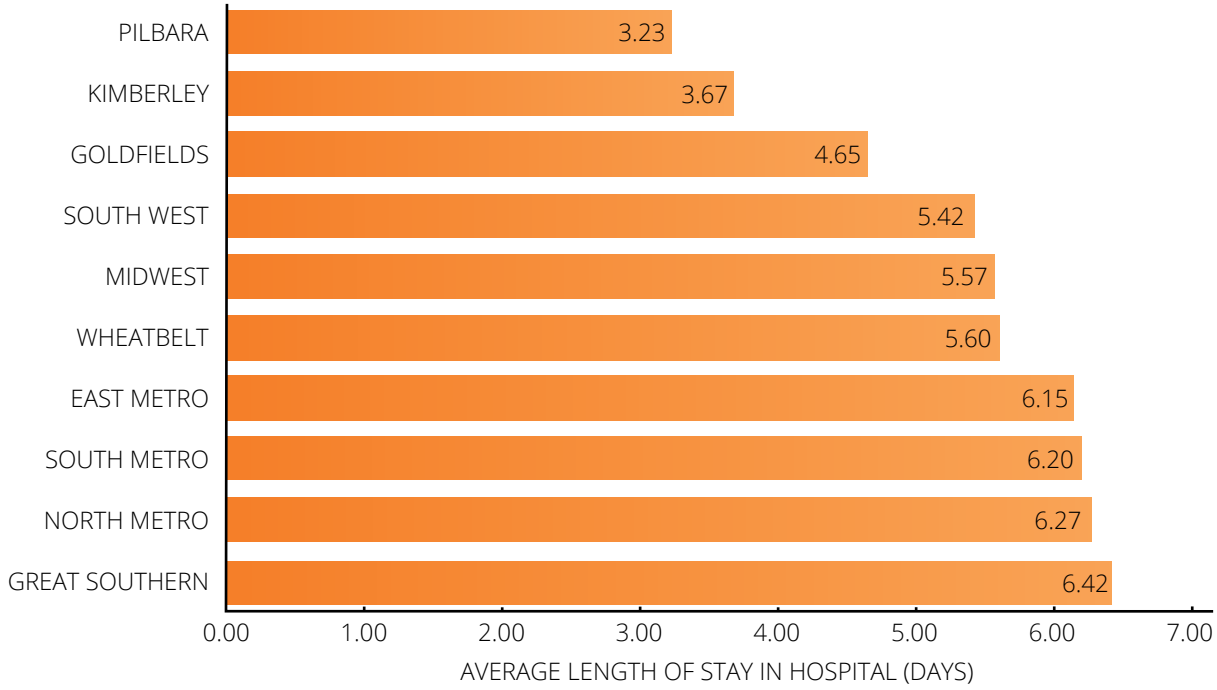


Figure 4 Average length of stay in hospital following a falls-related hospitalisation by health region, WA, 2017.[1]

location and falls

Overall, individuals living in rural and remote areas of Australia experience greater health inequalities compared to metropolitan areas. Individuals living in 'very remote areas' of Australia experience a burden of disease 1.7 times the rate of individuals residing in 'major cities'.[14] In addition to this, a lack of primary healthcare services in regional WA can result in individuals attending hospital for falls-related injuries that they may have otherwise attended a local primary healthcare service.[15]

INDIGENOUS STATUS

Aboriginal and Torres Strait Islander peoples included within this dataset were identified based on an individuals self-identification during their presentations to health services or in records of their health outcomes. The following data were generated from the WA Department of Health Epidemiology Branch.[1]

Aboriginal and Torres Strait Islander peoples were overrepresented in falls-related hospitalisations in WA in 2017.[1] Aboriginal and Torres Strait Islander peoples accounted for 4.96% (n=1,306) of falls-related hospitalisations in 2017, 2.04% (n=887) of metropolitan emergency department attendances in 2017 and less than 1.5% (n=<5) of falls-related fatalities in 2016.

The role of risk and protective factors

Aboriginal and Torres Strait Islander communities have unique protective factors embedded within their culture to support health and prevent falls-related injuries.[16,17] This includes holistic approaches to health, strong family bonds and community connectivity, which supports healthy ageing throughout the lifespan.

However, there are a number of factors which contribute to an increased risk of injury among Aboriginal and Torres Strait Islander peoples including; low socioeconomic contexts, alcohol and drug use, disruption to culture and reduced access to prevention and treatment services.[18]

Some heightened falls-related risk factors among Aboriginal and Torres Strait Islander peoples include higher rates of epilepsy, head injury and hearing impairment.[17]

MOODITJ DJENA | CASE STUDY

Falls have been identified as a leading cause of injury for Aboriginal peoples located in the Peel region of Western Australia and as a result the need for a culturally relevant falls prevention program was identified.

Funded through the Injury Matters Stay On Your Feet® community grants project, Stay On Your Mooditj Djena aimed to prevent falls in Aboriginal peoples aged 45 years and over living in Mandurah, Western Australia.

The project focused on the importance of good nutrition, strong legs and balance for preventing falls. Delivered by GP Down South, with the support of the South and East Metropolitan Health Services, the program involved three different components; a healthy lifestyle program, an aquatic walking group and tai chi classes.

Following participation in Stay On Your Mooditj Djena, participants reported benefits to their mental health and diet, both of which are protective factors for healthy ageing. Eighty per cent of healthy cooking class attendees reported that they made healthy changes to their diet based on their learnings from the program.

> "I'm now using ingredients I had never used previously, and love trying new, healthier foods".
>
> [STAY ON YOUR MOODITJ DJENA PARTICIPANT]

GP down south
Local health. Our business.

Mooditj Djena = strong feet

SHIRE OF MUKINBUDIN | CASE STUDY

Located in the Wheatbelt region of WA, the Shire of Mukinbudin is a small regional community with an ageing population. With no exercise classes available for older adults and no health professionals operating locally, the Shire recognised the need to have a self-managed exercise program to keep older adults healthy, informed, strong and safe.

To support this need, the Shire of Mukinbudin applied for and received an Injury Matters Stay On Your Feet® community grant to deliver the Stay On Your Feet® Strengthen Your Legs program. Aiming to improve local older adult leg strength, increase overall fitness levels and reduce falls risk, the 12-week exercise program included two one-hour classes a week, a weights session in the gym and a tai chi class.

Program facilitators observed a range of physical and social benefits among participants. Post-survey results from participants echo these observations, as 92% of participants indicated that the sessions improved their fitness levels and all participants noted they were 'more likely' or 'very likely' to continue to go to the gym. Due to the success of the program, the Shire of Mukinbudin has continued to deliver the tai chi class once a week, helping to maintain community engagement to support falls prevention.

92% of participants indicated that the sessions improved their fitness levels.

WHEN PEOPLE FALL

Data regarding when people fall, including month, day of the week and time of day, was provided through the WA Department of Health Epidemiology Branch.[1]

The number of falls-related fatalities, hospitalisations and metropolitan emergency department attendances did not differ significantly across months, however as indicated in Table 3, the greatest number of fatalities in 2016 occurred in July and August (n=35), and in 2017 the greatest number of hospitalisations (n=2,387) and ED attendances (n=3,837) occurred in May.

Table 4 demonstrates that in 2016 falls-related fatalities were highest on Thursdays (n=61) and lowest on Wednesdays (n=40), hospitalisations were highest on Thursday (n=4,489) and lowest on Saturday (n=2,220) in 2017, whilst ED attendances were highest on Saturdays (n=7,073) and lowest on Tuesdays (n=5,624) in 2017.

In 2017 the leading time of day for falls-related hospitalisations was between 9am and 12pm (n=8,318), while the greatest falls-related ED attendances were between 3pm and 6pm (n=8,948), see Figures 5 and 6.

Fifty-two percent (n=13,684) of all falls-related hospitalisations and 40.5% (n=17,593) of all falls-related ED attendances occurred in the afternoon, from 12pm to 6pm.

	FATALITIES (n=336)	HOSPITALISATIONS (n=26,338)	ED ATTENDANCES (n=43,408)
JANUARY	29	2,001	3,465
FEBRUARY	15	1,900	3,305
MARCH	23	2,323	3,806
APRIL	24	2,060	3,713
MAY	34	2,387	3,837
JUNE	29	2,284	3,776
JULY	35	2,268	3,424
AUGUST	35	2,361	3,752
SEPTEMBER	34	2,209	3,467
OCTOBER	31	2,282	3,795
NOVEMBER	23	2,120	3,555
DECEMBER	24	2,143	3,513

Table 3 Number of falls-related fatalities (2016), hospitalisations (2017) and metropolitan emergency department attendances (2016) by month, WA.[1]

	FATALITIES (n=336)	HOSPITALISATIONS (n=26,338)	ED ATTENDANCES (n=43,408)
SUNDAY	50	4,014	6,254
MONDAY	43	4,305	6,018
TUESDAY	42	4,392	5,624
WEDNESDAY	40	4,251	5,888
THURSDAY	61	4,489	5,986
FRIDAY	56	2,667	6,565
SATURDAY	44	2,220	7,073

Table 4 Number of falls-related fatalities (2016), hospitalisations (2017) and metropolitan emergency department attendances (2017) by day, WA.[1]

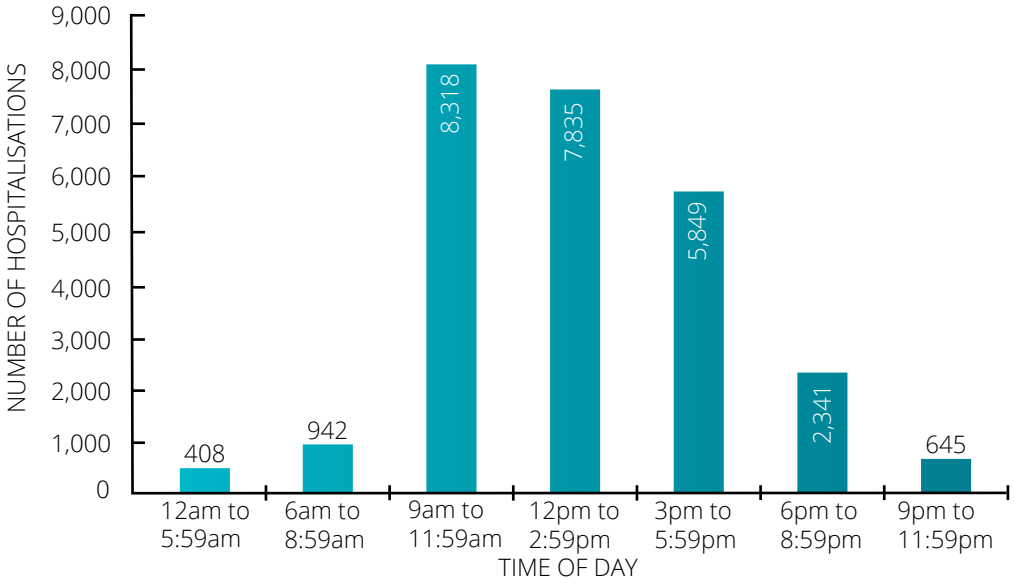


Figure 5 Number of falls-related hospitalisations by time, WA, 2017.[1]

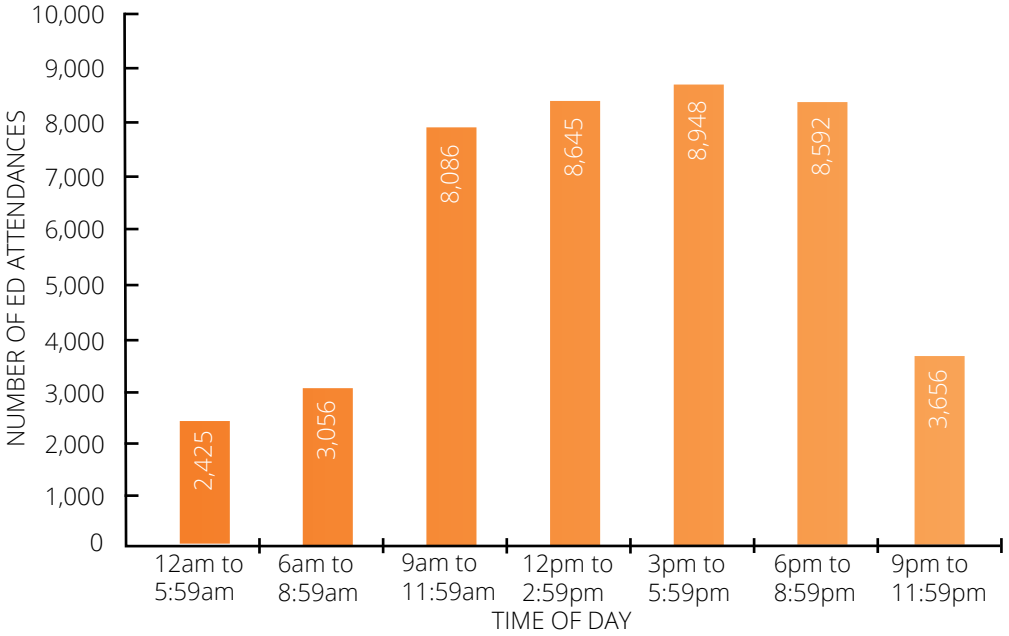


Figure 6 Number of metropolitan falls-related emergency department attendances by time, WA, 2017.[1]

Falls-related hospital admissions were highest on Thursdays, double that of Saturdays.[1]

CAUSES OF HOSPITALISATION

Causes of hospitalisation and alcohol data have been provided by a separate data set through the WA Department of Health, WA Hospital Morbidity Data System, Information and System Performance Directorate.[5]

As such, the numbers presented within this section have been coded differently to the rest of the report and present different hospitalisation numbers; see Technical Notes (p.3) for further details. Despite this, the data provides valuable information to inform future work and was concluded as integral to include within the report.

A large proportion (25.4%, n=8,244) of WA falls-related hospitalisations in 2017 were attributed to falls occurring on the same level due to slipping, tripping or stumbling, followed by falls from, off or into an object on the same level (n=7,873), falls from escalator/curb/stairs or steps (n=1,561) and falls from bed (n=1,461).[5]

However, it should be noted, that the cause of 7,832 falls-related hospitalisations were not specified within the data set. Table 5 outlines the full list of causes for falls-related hospitalisations.

Alcohol

Although no direct causal relationship can be made between the consumption of alcohol and the falls incident, in 6.2% (n=2,001) of falls-related hospitalisations the patient had consumed alcohol (60.9% aged 0 to 64 years and 39.1% aged 65 years and older).[5]

Even at moderate doses, alcohol consumption can impact a person's risk-taking behaviour and psychomotor performance, including cognition, co-ordination, and reaction time, which can in turn influence their risk of falling.[19,20]

6.2% of those hospitalised for a fall had consumed alcohol.[5]

FALL DESCRIPTION	HOSPITALISATIONS	
	n	%
Fall on same level from slipping, tripping, or stumbling	8,244	25.4
Fall from, off, or into an object on the same level	7,873	24.2
Unspecified fall	7,832	24.1
Fall from an escalator, curb, stairs, or step	1,561	4.8
Fall from bed	1,461	4.5
Fall from one level to another	1,003	3.1
Fall from chair	972	3.0
Fall from playground equipment	675	2.1
Fall involving pedestrian conveyance	638	2.0
Fall from, out of, or through a balcony, bridge, roof, floor, or other structure	555	1.7
Fall on or from ladder	528	1.6
Other	1,137	3.5
Total	32,479	100.0

Table 5 Number of falls-related hospitalisations by cause, WA, 2017.[5]
Note: Data in this table cannot be compared to data in the rest of the report due to the different data source.

INJURY DIAGNOSES

Falls injury diagnostic data was provided through the WA Department of Health Epidemiology Branch.[1]

Note, the total count of hospitalisations included within this section is less than the overall hospitalisations count (p.5) as only a proportion of cases (n=19,831) had an injury category listed in the provided categories.

Falls-related injuries were greatest in the lower limbs, including the hip, thigh, knee, lower leg, ankle and foot (34.1%; n=6,764).

This is followed by injuries to the upper limbs, which contributed to 27.6% of falls-related injuries (n=5,465), and injuries to the head and neck contributing to 23.1% of falls-related injuries (n=4,589).

INJURY DIAGNOSIS	HOSPITALISATIONS	
	n	ASR
Injuries to lower limbs (hip, thigh, knee, lower leg, ankle, and foot)	6,764	245.2
Injuries to upper limbs (shoulder, upper arm, elbow, forearm, wrist, hand, and fingers)	5,465	205.5
Injuries to head and neck	4,589	168.8
Injuries to thorax, abdomen, back, spine and pelvis (thorax, abdomen, lower back, lumbar spine, pelvis, and external genitals)	2,859	102.3
Other and unspecified effects of external causes	94	3.4
Injuries to multiple or unspecified region, foreign body effects*	55	2.1
Burns and frostbite*	5	-

Table 6 Injury diagnoses due to falls-related hospitalisations, by number and age-standardised rate (ASR), WA, 2017.[1]
Note: *Counts indicated with an asterisk have been rounded to a multiple of 5 to protect the privacy of individuals.

KIDSAFE WA | CASE STUDY

Falls are the leading cause of injury hospitalisation and emergency department presentation for children aged 0 to 15 years.[21] This case study describes data provided by Kidsafe WA, via the Perth Children's Hospital Emergency Department Injury Surveillance System.

In WA in 2017, 6,621 children aged zero to 15 presented to Perth Children's Hospital Emergency Department (PCH ED) due to a falls-related injury.[22] Children five years old and under accounted for the largest proportion of falls-related presentations, contributing to 41.5% (n=2,749) of all falls-related presentations.[22]

These falls-related incidents contributed to over a third of all injury presentations (36.9%).[22] Falls on the same level were the most common type of fall injury and accounted for 58.7% of falls-related injuries (n=3,887), followed by falls less than one metre high (29.2%, n=1,934) and falls over one metre high (12.1%, n=800).[22]

Over 16% of falls-related injury presentations occurred during a sporting activity (n=1,107).[22] The most common sporting activity involved in fall injuries were trampolining (n=317), followed by soccer (n=118) and basketball (n=113).[22] The majority of children that presented to PCH ED for a falls-related injury departed with treatment complete (85.3%, n=5,651), while over 13% of presentations were admitted to hospital (13.6%, n=899).[22]

Kidsafe WA work to inform the community on how to protect children from preventable injury and death at home, at play and on the road. Falls prevention is covered in a range of Kidsafe WA programs and resources.

For more information visit **www.kidsafewa.com.au**

Falls are the leading cause of injury hospitalisation and emergency department presentation for children aged 0 to 15 years.[21]

Kidsafe
Child Accident Prevention Foundation of Australia
Western Australia

GET INVOLVED IN FALLS PREVENTION

The Stay On Your Feet® program includes workforce engagement activities to support health and community workers to prevent falls in Western Australia.

Get involved

» Stay up to date with the latest evidence, current policy and best practice for preventing falls by attending training. Professional development opportunities are available in-person, by webinar and via online learning modules.

» Share solutions through the Community Falls Network and connecting through other networking events.

Apply for a grant

» Grants up to $5,000 are available per campaign to deliver a falls prevention project in your community.

Access resources

» Promotional displays are available to help you raise awareness as well as a variety of print and online resources to educate older adults about how they can prevent falls.

» Download the campaign toolkit to access campaign materials for social media and hosting events.

Stay up to date with what is happening in falls prevention in Western Australia by accessing the Stay On Your Feet® website and subscribing to the Falls eNews.

STAY ON YOUR FEET®
Move Improve Remove

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falls are preventable.

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PREVENTION TO RECOVERY