

WA Health costs associated with family and domestic violence

A snapshot

**King Edward Memorial Hospital
Osborne Park Hospital
Sir Charles Gairdner Hospital**

March 2017

Tables of Contents

Acknowledgements	3
Project Group	3
List of Tables	4
Executive Summary	5
Introduction	8
Methodology	10
Demographics	12
Emergency Department Costs	13
Patients originally identified at King Edward Memorial Hospital.....	13
Patients originally identified at Osborne Park Hospital.....	14
Patients originally identified at Sir Charles Gairdner Hospital	15
Inpatient Costs	16
King Edward Memorial Hospital	16
Osborne Park Hospital	17
Sir Charles Gairdner Hospital	18
Concluding comments and recommendations	19
Appendix 1	21

Acknowledgements

This project was driven by Women’s Health Strategy and Programs, Women and Newborn Health Service, North Metropolitan Health Service.

A special thank you to the System Performance Division, Department of Health, particularly to Ian Massingham, who conducted the analysis for the project and provided expertise on the clinical costings.

A thank you also to Epidemiology Branch, Public Health Division, Department of Health, particularly to Drs Alex Xiao and Le Jian who provided information on costs across health regions.

Project Group

Department of Health	System Performance Division
Women and Newborn Health Service	Women’s Health Strategy and Programs Graduate Health Officer
King Edward Memorial Hospital	Social Work Department
Osborne Park Hospital	Social Work Department
Sir Charles Gardiner Hospital	Social Work Department

Suggested citing:

Department of Health, Western Australia. WA Health costs associated with family and domestic violence – a snap shot. Perth: Women’s Health Strategy and Programs, Women and Newborn Health Service, Department of Health, Western Australia; 2017.

List of Tables

Table 1: Summary results for FDV compared with the control group

Table 2: Total costs of FDV related hospitalisation by spouse or domestic partner and family member and health region, 2009-2015

Table 3: Total number of patients and health service

Table 4: Sex, Aboriginality, age groups and residence of patients identified with FDV as risk factor

Table 5: KEMH-identified patients' ED costs across WA Health over 3 years and average cost per year

Table 6: KEMH-identified patients' average state wide ED presentations

Table 7: OPH-identified patients' ED costs across WA Health over 3 years and average cost per year

Table 8: OPH-identified patients' average state wide ED presentations

Table 9: SCGH-identified patients' ED costs across WA Health over 3 years and average cost per year

Table 10: SCGH-identified patients' average state wide ED presentations

Table 11: KEMH-identified patients' inpatient costs over 3 years

Table 12: KEMH-identified patients' average hospital separations per patient

Table 13: KEMH-identified patients' average length of stay per patient

Table 14: OPH-identified patients' inpatient costs over 3 years

Table 15: OPH-identified patients' average hospital separations per patient

Table 16: OPH-identified patients' average length of stay per patient

Table 17: SCGH-identified patients' inpatient costs over 3 years

Table 18: SCGH-identified patients' average hospital separations per patient

Table 19: SCGH-identified patients' average length of stay per

Executive Summary

The aim of the project was to better understand the financial impact on WA Health of caring for patients with family and domestic violence (FDV) identified as a risk factor. Sites considered were King Edward Memorial Hospital (KEMH), Osborne Park Hospital (OPH) and Sir Charles Gairdner Hospital (SCGH). The information in this report is based on the costs for a small number of patients.

FDV is a major public health and social concern with women being at most risk¹. The financial impact for WA Health is largely unknown as well as the extent to which people may be suffering poor health and illness as a consequence of ongoing abuse. FDV is linked to several adverse health outcomes² with an estimated one in four women having experienced violence in Australia³.

The current system in place for WA Health inpatient data collection puts the total cost of FDV at **\$51,879,096** (2009-2015) across all WA Health regions⁴. This system of identification and coding captures the costs only when people are admitted to hospital for assault related injuries caused by a spouse or domestic partner, parent, other family member, carer, or acquaintance/friend. Seventy one per cent of this cost is attributed to injuries caused by a spouse/domestic partner or a family member.

The cost of assault related injuries is in addition to the costs associated with the group of patients in this project. For the majority of patients, FDV was not disclosed as the presenting health issue and was only identified as a risk factor following social work assessment.

At each of the three health services, there was a patient group identified by social work as at risk of experiencing FDV, and another group with no FDV risk identified (the control). KEMH and OPH utilised a third and fourth group of patients as a subset of the overall FDV group, which assisted with comparing those experiencing only FDV risk and those experiencing FDV as well as other social risk factors.

The KEMH and OPH patients were identified from a group of women attending antenatal clinics. The SCGH patients were emergency department (ED) presentations where FDV was assessed as a risk factor. Each patient's Unique Medical Record Number (UMRN) was utilised to track their attendance at EDs and as inpatients across state wide WA Health services over a three year period.

At the time of reporting, the 2015/2016 cost information was not available. The costs from the available years (2013/2014 and 2014/2015) have been extrapolated out for the three year activity period. The variance in costs between the FDV group/s and control group for patients originally identified at each of the three health services has been calculated by the System Performance Division at the Department of Health.

¹ Global and regional estimates of violence against women: Prevalence and health effects of intimate partner violence and non-partner sexual violence, 2013, retrieved February 24, 2017 from http://apps.who.int/iris/bitstream/10665/85239/1/9789241564625_eng.pdf

² Examination of the health outcomes of intimate partner violence against women: State of knowledge paper / Miriam Lum On, Julie Ayre, Kim Webster, Lynelle Moon, ANROWS, 2016

³ Violence against women: Key statistics, ANROWS Fast Facts publications, 2014, retrieved 24 February, 2017 from <http://media.aomx.com/anrows.org.au/s3fs-public/Key%20statistics%20-%20all.pdf>

⁴ WA Hospital Morbidity Data System. Epidemiology Branch, WA Department of Health. Costs of hospitalisations due to family and domestic violence by health region, year, gender, Aboriginality and type. 2017.

Table 1 below outlines the summary results for patients identified as at risk of experiencing FDV compared to the control group.

Table 1: Summary Results for FDV compared with the control group

	Patients originally identified at KEMH	Patients originally identified at OPH	Patients originally identified at SCGH
Costs (Over 3yrs)			
Emergency Dept.	ED + \$207,364	ED + \$8,959	ED + \$28,458
Inpatients	IP + \$743,244	IP -\$75,225	IP -\$115,771
Average no. of ED presentations	FDV Only* + 1.7 times higher FDV + SRF* + 2.2 times higher	FDV Only* + 1.2 times higher FDV + SRF* + 1.5 times higher	1.4 times higher
Average no. of hospital separations for IP	FDV Only* + 1.4 times higher FDV + SRF* - 1.8 times higher average	FDV Only* + 1.3 times higher FDV + SRF* - 1.9 times higher average	2.7 times higher average in control group
Average length of stay for IP	FDV Only* + 0.5 days longer FDV + SRF* + 0.8 days longer	FDV Only* - 0.4 days less FDV + SRF* + 0.4 days longer	1.8 times longer in control group
Demographics (FDV Group)	ALL Female 28% Aboriginal	ALL Female 15% Aboriginal	83% - Female 17% - Male 25% - Aboriginal

***FDV only**: Patients with FDV as an identified risk factor but no other recorded social risk factors.

***FDV and SRF** (social risk factors): Patients with FDV in combination with one or more social risk factors such as housing, welfare, psychological disorders, child at risk.

In summary, there were additional emergency department costs for **all** patients identified at the three hospital sites at risk of FDV and they presented more frequently to EDs across WA Health than the control group.

The KEMH patients at risk of experiencing FDV recorded an overall greater average cost for inpatients as well as a higher average number of hospital separations⁵ and length of stay⁶ than the control group.

⁵ An episode of care for an admitted patient which can be a total hospital stay or a portion of a hospital stay beginning or ending in a change of type of care

⁶ Number of days spent in hospital

Whilst the inpatient costs for the OPH patients at risk of experiencing FDV was less than the control group, there was still a higher average number of hospital separations and length of stay for the at risk FDV group.

The SCGH patients' control group was comprised of general ED patients that had similar demographic attributes to the FDV cases. This means patients in the same time frame that had the same gender, age grouping and ATSI indicator. The control group experienced a higher inpatient cost and greater number of hospital separations than the patients at risk of experiencing FDV. The SCGH patients presented for a range of health issues as opposed to the KEMH and OPH patients who all attended for antenatal care. This may have influenced average costs.

Further investigation is required into the OPH and SCGH at risk FDV groups and their inpatient costs. There are several issues for consideration including the age and gender of patients, particularly at SCGH, the presenting health issue for each patient across the 3 year period, the health services they presented at and the variations between the length of stay and number of separations.

FDV often coexists with other social challenges and is difficult to extract as the sole or primary problem for people and families. There was a further increase in the average number of ED presentations and inpatient care (length of stay and hospital separations) for patients identified at KEMH and OPH at risk of FDV when coupled with other risk factors, compared to patients at risk of only FDV.

In each of the health services, Aboriginal women identified at risk of experiencing FDV was between 15-28%. This supports well documented national statistics that Aboriginal women are 35 times more likely to be hospitalised due to FDV related assaults than non-Aboriginal women⁷.

The ability to identify other vulnerable groups is difficult. Prohibiting factors include non-mandated fields of data collection not completed, patient non-disclosure of abuse or violence, consistent use of interpreters, lack of privacy in hospital settings to discuss sensitive matters and lack of screening for FDV.

Areas for future consideration:

- A larger study across a variety of health services, including rural and regional hospitals.
- Data collection that identifies FDV as an underlying risk factor standardised across the system to capture and better understand the extent and impact of the problem.
- Further investigation into screening patients, with specific attention to women who have repeat attendances in emergency settings, high risk groups such as the Aboriginal community and within specific health services such as mental health and refugee/migrant services.
- Development of local referral pathways to external agencies in an effort to address complex, interconnecting social risk factors that influence repeat presentations to health services.

⁷ Reporting on Family Violence in Aboriginal and Torres Strait Islander Communities, 2014
https://www.ourwatch.org.au/MediaLibraries/OurWatch/Images/ourwatch_reporting_on_a-ts_family_violence_aa_v1.pdf

Introduction

Family and domestic violence (FDV) is a major public health concern that is also a gendered issue with one in four women experiencing violence in Australia. The Personal Safety Survey conducted in 2013 through the Australian Bureau of Statistics estimate that 41% of Australian women aged 18 years and above, 3,560,600 have experienced violence at some stage in their life since the age of 15 years⁸.

The definition of FDV varies across services, jurisdictions and sectors. In WA Health, the policy definition is broader than intimate partner violence and encompasses extended family relationships, older people and same sex partnerships to capture the diversity and complex nature of abuse.

FDV is usually not an isolated event, but is a pattern of ongoing, repetitive and purposeful use of physical, emotional, social, financial and/or sexual abuse used to intimidate and instill fear⁹.

Aboriginal people generally prefer to use the term 'family violence'. This concept describes a matrix of harmful, violent and aggressive behaviours and is considered to be more reflective of an Aboriginal world view of community and family healing¹⁰.

There is evidence of direct causal relationship for women experiencing FDV and anxiety, suicide and self-inflicted injuries, alcohol-use disorders, homicide and violence, early pregnancy loss and issues related to pregnancy loss, pre-mature births, and low birth weights¹¹. Research findings positively associate intimate partner physical violence with drug related and mood disorders¹², as well as adverse impact on development of infants and children¹³. Intimate partner violence has been found to contribute more to the burden of disease for Australian women aged 18-44 years than alcohol use and tobacco use, illicit drug use and being overweight or obese¹⁴.

The costs of responding to Family and Domestic Violence

For WA Health, hospitalisation costs are estimated based on the Australian Refined Diagnostic Related Group (AR-DRG) classification system. The average DRG costs for each DRG as determined by the national Independent Hospital Pricing Authority are then applied to hospitalisation episodes regardless of length of stay.

The current system in place for WA Health data collection puts the total costs of FDV at **\$51,879,096** (2009-2015) across all WA Health regions¹⁵. The identification and coding captures the costs only when people are hospitalised for assault related injuries caused by a spouse or domestic partner, parent, other family member, carer, or acquaintance/friend

⁸ Australian Bureau of Statistics. (2013). Personal Safety, Australia, 2012 (Cat. No. 4906.0). Canberra: ABS.

⁹ Family and Domestic Violence Policy, Department of Health, WA, 2014, retrieved February 27, 2017 from http://kemm.health.wa.gov.au/health_professionals/WHCSP/fdv.php

¹⁰ Guideline for responding to family and domestic violence, Department of Health, WA, 2014, retrieved February 27, 2017 from http://kemm.health.wa.gov.au/health_professionals/WHCSP/fdv.php

¹¹ A preventable burden: measuring and addressing the prevalence and health impacts of intimate partner violence in Australian women. Kim Webster. Sydney: ANROWS, c2016

¹² Examination of the health outcomes of intimate partner violence against women: State of knowledge paper / Miriam Lum On, Julie Ayre, Kim Webster, Lynelle Moon, ANROWS, 2016

¹³ Issues Paper 2: Children, young people and domestic violence, Australian Domestic and Family Violence Clearinghouse UNSW, NSW, 2000

¹⁴ Examination of the health outcomes of intimate partner violence against women: State of knowledge paper / Miriam Lum On, Julie Ayre, Kim Webster, Lynelle Moon, ANROWS, 2016

¹⁵ WA Hospital Morbidity Data System. Epidemiology Branch, WA Department of Health. Costs of hospitalisations due to family and domestic violence by health region, year, gender, Aboriginality and type. 2017.

(i.e., does not entirely reflect the WA Health policy definition of FDV). The breakdown of costs associated with each of these categories for people believed responsible, reveals that 48% relate to spouse or domestic partner caused injuries, increasing to 71% of the cost when assault by a family member is included.

A significant proportion (56%) of the hospitalisation cost of injuries by a spouse or domestic partner between 2009 and 2015 was for Aboriginal women.

The table below lists the total cost of care for patients with assault related injuries caused by a spouse or domestic partner or a family member across each health region from 2009-2015.

Table 2: Total costs¹⁶ of FDV related hospitalisation by spouse or domestic partner and family member and health region, 2009-2015¹⁷

HEALTH REGION	TOTAL COST
Kimberley	\$9,159,645
East Metro	\$7,279,915
North Metro	\$4,617,383
South Metro	\$4,110,385
Pilbara	\$3,922,269
Midwest	\$2,507,767
Goldfields	\$1,953,747
South West	\$1,255,796
Wheatbelt	\$1,205,131
Great Southern	\$545,150

¹⁶ Costs are derived based on Australian Refined Diagnostic Related Group average costs from the National Hospital Cost Data Collection. The costs are based on principal diagnosis, not on external causes that were used to identify the five types shown in the tables. The costs for periods from 1 July 2014 to the end of 2015 used the escalation factor of 4.58% to the costs for 2014/15 and 2015/16.

¹⁷ WA Hospital Morbidity Data System. Epidemiology Branch, WA Department of Health. Costs of hospitalisations due to family and domestic violence by health region, year, gender, Aboriginality and type. 2017.

Methodology

For this project, patients were identified at three metropolitan hospitals – King Edward Memorial Hospital (KEMH), Osborne Park Hospital (OPH) and Sir Charles Gairdner Hospital (SCGH) – and allocated to an FDV group/s (where FDV was identified as a risk factor for the patient) or a control group (where no FDV risk was identified).

All these patients were then tracked via their unique medical record number (UMRN) over three years for their utilisation of EDs and/or inpatient (IP) services across the entire of WA Health and the costs of this service utilisation calculated.

For patients identified at WNHS and OPH (via an antenatal clinic), there were four patient groups tracked:

1. Control group – patients with no FDV risk identified;
2. All FDV group – patients with FDV identified as a risk factor (including both with and without additional risk factors);
3. FDV only group – patients with FDV identified as a risk factor but no other social risk factors were recorded (i.e., a sub-set of group 2); and
4. FDV with other social risk factors – patients with FDV identified along with one or more other social risk factors (i.e., a sub-set of group 2).

These groups are illustrated in Figure 1 below.

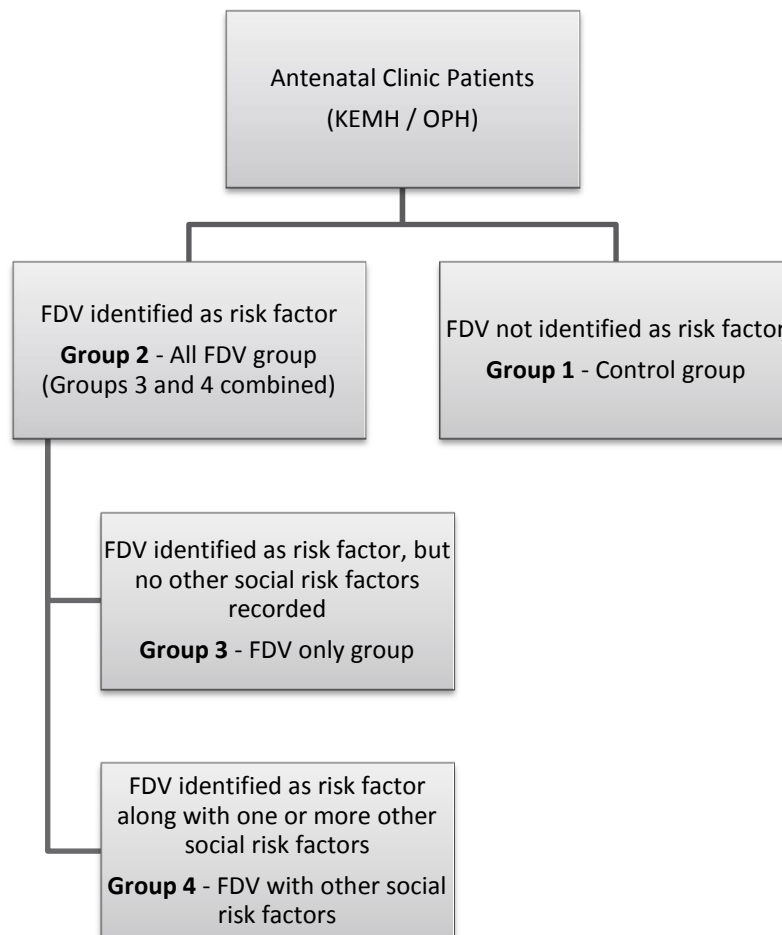


Figure 1: Patient groups tracked who were originally identified at KEMH and OPH.

Where other social risk factors (SRFs) were identified (i.e., group 4), these were known comorbidities associated with FDV such as inadequate housing, welfare issues, drug misuse, psychological disorders and child at risk concerns. The list of SRFs for each health service was drawn from the Allied Health System indicators (Appendix 1).

For patients originally identified at SCGH (via the ED), there were two patient groups tracked (no other social risk factors were recorded):

1. Control group – patients with no FDV risk identified;
2. All FDV group – patients with FDV identified as a risk factor.

These groups are illustrated in Figure 2 below.

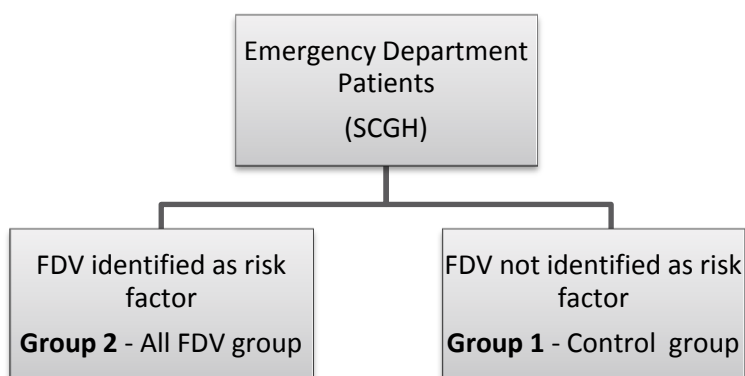


Figure 2: Patient groups tracked who were originally identified at SCGH.

At the time of reporting, the 2015/2016 cost information was not available. The costs from the available years (2013/2014 and 2014/2015) have been extrapolated out for the three year activity period. The variance in costs between the FDV group/s and control group for patients originally identified at each of the three health services has been calculated by the System Performance Division at the Department of Health.

The total number of patients tracked from each health service is outlined in Table 3.

Table 3: Total number of patients and health service

	Number of patients and tracking	How identified
KEMH	<ul style="list-style-type: none"> • FDV: 473 patients • FDV and other SRF*: 632 patients • Control: 21,618 patients 	Antenatal patients (East Wing Clinic)
OPH	<ul style="list-style-type: none"> • FDV: 52 patients (UMRNs supplied by OPH) • FDV and other SRF*: 21 • Control: 6,531 patients (supplied by OPH) 	Antenatal patients
SCGH	<ul style="list-style-type: none"> • FDV: 36 patients (UMRNs supplied by SCGH) • Control: 12,635 patients 	Emergency department

**FDV and SRF (social risk factors): Patients with FDV in combination with one or more social risk factors such as housing, welfare, psychological disorders, children at risk.*

Demographics

The cohort of patients originally drawn from KEMH and OPH were identified through their attendance at antenatal clinics, and as such they were all female.

For the cohort of patients originally drawn from SCGH, there was a combination of male (17%) and female (83%) patients tracked who had been identified with FDV as a risk factor. The control group (also derived from SCGH ED) had similar attributes to the FDV group such as age, sex, indigenous status, marital status, postcode, country of birth, interpreter requirement, admitting diagnosis.

A significant proportion of the All FDV group identified at each health service was Aboriginal, ranging from 15-28%.

For patients identified at KEMH, the majority of those in the All FDV group resided in the East Metropolitan Health Service (EMHS) health region area, while for patients identified at OPH, the majority of those in the All FDV group were from the North Metropolitan Health Service (NMHS) health region area, followed by EMHS.

Table 4: Sex, Aboriginality, age groups and residence of patients identified with FDV as risk factor

	Sex	Aboriginality (All FDV Group)	Age Groups (All FDV Group)	Health region* residence of patients (All FDV Group)
KEMH	All female	28%	14% - 5-19 years 67% - 20-34 years 19% - 35-49 years	21% - NMHS 19% - SMHS 41% - EMHS 17% - WACHS
OPH	All female	15%	15% - 5-19 years 70% - 20-34 years 13% - 35-49 years 2% - 50-64 years	64% - NMHS 3% - SMHS 32% - EMHS 0% - WACHS
SCGH	83% - female 17% - male	25%	94% of patients (34) were over the age of 18 years and 6% of patients (2) were paediatric.	69% - NMHS 14% - SMHS 8% - EMHS 3% - WACHS

*WA Health regions – North Metropolitan Health Service (NMHS), South Metropolitan Health Service (SMHS), East Metropolitan Health Service (EMHS) and WA Country Health Service (WACHS)

Emergency Department Costs

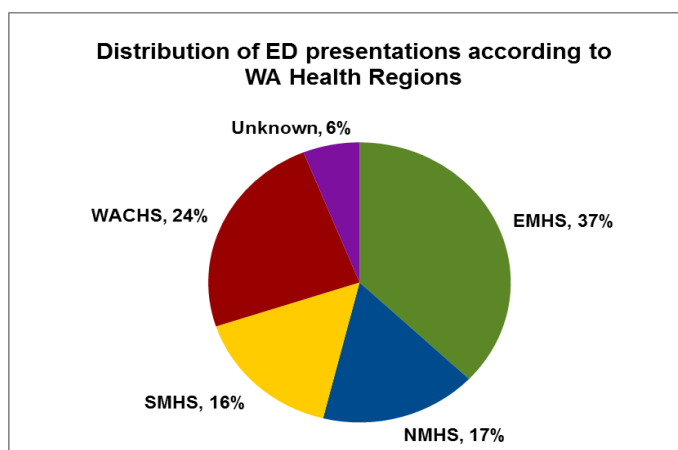
The project investigated patients with FDV identified as a risk factor and the cost of their ED presentations across WA Health compared to patients without an identification of FDV risk. The number of ED patients is less than the total inpatient number as not all patients had an ED presentation in the three-year period.

Patients originally identified at King Edward Memorial Hospital

KEMH patients identified as having FDV as a risk factor cost WA Health **\$207,364 more** for ED presentations across WA Health than patients who did not have FDV identified as a risk factor¹⁸. Overall, patients with FDV as an identified risk also had a **2.2 times higher average** number of ED presentations than the control group.

Table 5: KEMH-identified patients' ED costs across WA Health over 3 years and average cost per year

Category	Costs over 3 years*	Average cost per year
All FDV group (Group 2)	\$ 682,693	\$ 227,564
Control group (Group 1)	\$ 475,329	\$ 158,443
Difference	+\$ 207,364	+\$ 69,121



For KEMH-identified patients with FDV as a risk factor, 37% presented at the EMHS ED followed by 24% at a WACHS emergency department.

Figure 3: Distribution of KEMH patients identified as at risk of FDV and ED presentations according to WA Health Regions

¹⁸ This was the difference in cost between the All FDV group and the control group

Table 6: KEMH-identified patients' average state wide ED presentations

KEMH	Average number of ED presentations (state-wide) per patient		
	Control (Group 1)	3.23	
	FDV Only (Group 3)	5.46	1.7 times higher average number of ED presentations across WA Health compared to the control group (group 1)
	FDV with other social risk factors (Group 4)	7.25	2.2 times higher average number of ED presentations than the control group (group 1) 1.3 times more ED presentations than the FDV only group (group 3)

Patients originally identified at Osborne Park Hospital

OPH patients identified as having FDV as a risk factor cost WA Health **\$8,959 more** for ED presentations across WA Health than patients who did not have FDV identified as a risk factor¹⁹. Overall, patients with FDV as an identified risk also had a **1.5 times higher average** number of ED presentations than the control group.

Table 7: OPH-identified patients' ED costs across WA Health over 3 years and average cost per year

Category	Costs over 3 years*	Average Cost per year
All FDV group (Group 2)	\$ 28,883	\$ 9,628
Control group (Group 1)	\$ 19,924	\$ 6,641
Difference	+ \$ 8,959	+ \$ 2,986

¹⁹ This was the difference in cost between the All FDV group and the control group

Table 8: OPH-identified patients' average state wide ED presentations

OPH	Average state-wide ED presentations per patient		
	Control (Group 1)	2.54	
	FDV Only (Group 3)	3.11	1.2 times higher average of ED presentations across WA Health compared to the control group (group 1)
	FDV with other social risk factors (Group 4)	3.72	1.5 times higher average ED presentations than the control group (group 1)
1.2 times higher average ED presentations than the FDV only group (group 3)			

Patients originally identified at Sir Charles Gairdner Hospital

SCGH patients identified as having FDV as a risk factor cost WA Health **\$28,458 more** for ED presentations across WA Health than patients who did not have FDV identified as a risk factor²⁰. Overall, patients with FDV as an identified risk also had a **1.5 times higher average** number of ED presentations than the control group.

Table 9: SCGH-identified patients' ED costs across WA Health over 3 years and average cost per year

Category	Costs over 3 years*	Average Cost per year
FDV group (Group 2)	\$ 83,997	\$ 27,999
Control group (Group 1)	\$ 55,539	\$ 18,513
Difference	+\$ 28,458	+\$ 9,486

Table 10: SCGH-identified patients' average state wide ED presentations

SCGH	Average state- wide ED presentations per patient		
	Control (Group 1)	3.5	
	All FDV (Group 2)	4.9	1.4 times higher average than patients in the control group.

²⁰ This was the difference in cost between the All FDV group and the control group

Inpatient Costs

All patients were tracked for their **inpatient** (IP) care across WA Health with the average number of hospital separations and length of stay investigated. The difference between patients with FDV only as a risk factor and all FDV (i.e., including other social risk factors) was also explored for KEMH and OPH.

Patients originally identified at King Edward Memorial Hospital

KEMH patients identified as having FDV as a risk factor cost WA Health **\$743,244 more** for IP care across WA Health than patients who did not have FDV identified as a risk factor²¹. Overall, patients with FDV as an identified risk also had a **1.8 times higher average** number of hospital separations and stayed on average **0.8 days longer** than the control group.

Table 11: KEMH-identified patients' inpatient costs over 3 years

Category	Costs over 3 years	Average Cost per year
All FDV group (Group 2)	\$ 9,807,277	\$ 3,269,092
Control group (Group 1)	\$ 9,064,033	\$ 3,021,344
Difference	+\$ 743,244	+\$ 247,748

Table 12: KEMH-identified patients' average hospital separations per patient

KEMH	Average number of hospital separations* per patients		
	Control (Group 1)	1.82	
	FDV Only (Group 3)	2.59	1.4 times higher average of inpatients separations compared to the control group (group 1)
	FDV with other social risk factors (Group 4)	3.27	1.8 times higher average separations than the control group (group 1)
1.3 times higher average separations than the FDV only group (group 3)			

²¹ This was the difference in cost between the All FDV group and the control group

Table 13: KEMH-identified patients' average length of stay per patient

KEMH	Average length of stay per patient		
	Control (Group 1)	3.02	
	FDV Only (Group 3)	3.52	0.5 days longer than control (group 1)
	FDV with other social risk factors (Group 4)	3.79	0.8 days longer than control group (group 1)
0.3 days longer than FDV only group (group 3)			

Osborne Park Hospital

OPH patients identified as having FDV as a risk factor cost WA Health **\$75,225 less** for IP care across WA Health than patients who did not have FDV identified as a risk factor²². However, patients with FDV as an identified risk had a **1.9 times higher average** number of hospital separations and stayed on average **0.4 days longer** than the control group.

Table 14: OPH-identified patients' inpatient costs over 3 years

Category	Costs over 3 years*	Average Cost per year
All FDV group (Group 2)	\$553,193	\$184,398
Control group (Group 1)	\$628,418	\$209,473
Difference	-\$75,225	-\$25,075

Table 15: OPH-identified patients' average hospital separations per patient

OPH	Average number of hospital separations* per patients		
	Control (Group 1)	1.57	
	FDV Only (Group 3)	1.97	1.3 times higher average number of inpatients separations across WA Health compared to the control group (group 1)
	FDV with other social risk factors (Group 4)	3.05	1.9 times higher average number of separations than the control group (group 1)
1.3 times higher average number of separations than the "FDV only" group (group 3)			

²² This was the difference in cost between the All FDV group and the control group

Table 16: OPH-identified patients' average length of stay per patient

OPH	Average length of stay per patient (number of days spent in hospital)		
	Control (Group 1)	2.38	
	FDV Only (Group 3)	2	0.4 days less than the control group (group 1)
	FDV with other social risk factors (Group 4)	2.73	0.4 days longer than the control group (group 1)
			0.7 days longer than FDV only group (group 3)

Sir Charles Gairdner Hospital

SCGH patients identified as having FDV as a risk factor cost WA Health **\$115,771 less** for IP care than patients who did not have FDV identified as a risk factor²³. The control group also experienced **2.7 times higher average** number of hospital separations than the FDV group.

Table 17: SCGH-identified patients' inpatient costs over 3 years

Category	Costs over 3 years*	Average Cost /per year
All FDV group (Group 2)	\$160,006	\$53,335
Control group (Group 1)	\$275,776	\$91,925
Difference	-\$115,771	-\$38,590

Table 18: SCGH-identified patients' average hospital separations per patient

SCGH	Average number of hospital separations* per patients		
	Control (Group 1)	5.6	2.7 times higher average of inpatient separations for control group across WA Health compared to the FDV group (group 2)
	All FDV (Group 2)	2.1	

Table 19: SCGH-identified patients' average length of stay per patient

SCGH	Average length of stay per patient (number of days spent in hospital)		
	Control (Group 1)	3.5	1.8 times average longer in hospital compared to the FDV group (group 2)
	All FDV (Group 2)	2.0	

²³ This was the difference in cost between the All FDV group and the control group

Concluding comments and recommendations

The aim of the project was to better understand the financial impact for WA Health of patients with FDV identified as a risk factor. It is a snapshot of costs across WA Health and a glimpse of service usage for people identified as at risk of experiencing violence and abuse during a period of their lives.

The current system collecting FDV information reflects a small proportion of patients hospitalised as a result of assault related injuries. In this project, however, FDV was not the presenting health issue and was only identified as a risk factor following social work assessment at some stage of the patient journey.

Costing patient care is complex and dependant on various factors such as Diagnostic Related Groups (DRGs) and tertiary hospital loading for each health service. The three hospital sites in this project (KEMH, OPH and SCGH) had differing 'national weighted activity units' attributed to the care of each patient and the final estimation of costs are based on these varying levels.

In summary, there were additional emergency department costs for **all** patients identified at the three hospital sites at risk of FDV and they presented more frequently to emergency departments across WA Health within the 3 year period than the control group.

There were also increased costs for KEMH patients at risk of FDV and their inpatient care. Whilst the costs for the OPH patients at risk of experiencing FDV were less than the control group, there was still a higher average number of hospital separations and length of stay. SCGH patients at risk of FDV were the exception in inpatient costs and service usage. A study with a larger number of patients may provide a different outcome.

Further investigation is warranted into the OPH and SCGH at risk FDV groups and their inpatient costs. There are several issues for consideration including the age and gender of patients, particularly at SCGH, the presenting health issue for each patient across the 3 year period, the health services they presented at and the variations between the length of stay and number of separations.

Collecting information on high risk groups is complicated but an area that necessitates attention if prevalence and impact on health is to be determined. Even on the small scale of this project, the results on Aboriginal women indicate their vulnerability and overrepresentation as is evident in national statistics.

The social determinants of health and the interconnectedness of FDV with other issues needs to be better understood and to ensure appropriate action. This can promote informed health care responses and long term change for people.

Areas for future consideration:

- A larger study across a variety of health services, including rural and regional hospitals.
- Data collection that identifies FDV as an underlying risk factor standardised across the system to capture and better understand the extent and impact of the problem.

- Further investigation into screening patients, with specific attention to women who have repeat attendances in emergency settings, high risk groups such as the Aboriginal community and within specific health services such as mental health and refugee/migrant services.
- Development of local referral pathways to external agencies in an effort to address complex, interconnecting social risk factors that influence repeat presentations to health services.

Appendix 1

Flags utilised to filter social risk factors through the Allied Health System database.

KEMH	
FDV	ICPC2+: domestic violence
	ICPC2+: Domestic violence(I)
Other Social Risk Factors	(When FDV is not also present)
	ICD10AM: Homelessness
	ICPC2+: Abuse; drug(s);other substance
	ICPC2+: Abuse; emotional; child
	ICPC2+: Disorder; psychological(I)
	ICPC2+: Problem; housing
	ICPC2+: Problem; welfare
	ICPC2+: psychological disorder
	ICPC2+: Abuse; emotional; child

OPH	
FDV	UMRNs provided by OPH
Other Social Risk Factors	(When FDV is not also present)
	ICD10AM: Psychosocial assessment ICD10AM: Other problem: housing & economic circumstances ICPC2+: Notification; child abuse ICPC2+: Referral; child abuse

SCGH	
FDV	UMRNs provided by SCGH – identified by: ICPC2+: domestic violence ICD10AM Z56.9 Prob rel to unsup psychosocial cirmst ICPC2+ Z08003 Problem; welfare
Other Social Risk Factors	N/A



This document can be made available in alternative formats on request for a person with a disability.

© Department of Health 2015

Copyright to this material is vested in the State of Western Australia unless otherwise indicated. Apart from any fair dealing for the purposes of private project , research, criticism or review, as permitted under the provisions of the *Copyright Act 1968*, no part may be reproduced or re-used for any purposes whatsoever without written permission of the State of Western Australia.