



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

Your safety in our hands in hospital

An Integrated Approach to Patient Safety Surveillance in WA Hospitals, Health Services and the Community: 2013

Delivering Safer Care Series Report Number 2



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The PSSU would like to thank and acknowledge the contribution of all clinical and administrative staff who have devoted their time and effort to notify, report and investigate clinical incidents with the goal to improve health care delivery. We would also like to acknowledge the patients and their families who have experienced unintended harm whilst receiving care in our health system. By reporting, investigating, implementing change and sharing the lessons learned, we aim to reduce error and improve patients' safety.

Foreword

An increasing body of international evidence has shown that interventions designed to improve health care outcomes can too often result in patient harm. The seminal work, *To Err is Human* (1999), clearly articulated that health care staff are not infallible and mistakes do happen. Therefore we need to ensure that the health care systems we practice within are designed to reduce and prevent clinical incidents from occurring. By doing so we further enable our staff to provide high quality care in a safe clinical environment.

WA Health staff work in a culture of 'no blame' and this is evidenced by the number of clinical incidents that are reported and investigated each year so that lessons can be learnt. Our health care staff are trained to the highest level in all facets of medicine, nursing, allied health and patient support. Their continual dedication and commitment to providing excellent quality care is renowned and clearly demonstrated in the low hospital mortality and clinical incident rates.

However, our patients aren't numbers and sometimes the reality of health care delivery can be shocking, with this shock compounded when the harmful outcome was preventable. Reality hits hard when a child dies from a misdiagnosis, an elderly patient sustains permanent injury after receiving an incorrect medication or when a young father has to remain in hospital weeks longer because he has sustained a serious pressure injury. Being empathetic is only one response, making sure that we understand the machinations of how these clinical incidents occurred and more importantly, how they can be prevented, is imperative if the delivery of our health care is to advance.

Systematic approaches to patient safety are warranted as these allow us to understand the nature and magnitude of clinical incidents and the factors that have contributed to their occurrence. Since revising the Clinical Incident Management (CIM) Policy (2012), we have seen a substantial increase in the reporting of clinical incidents resulting in serious harm or death and we expect this reporting increase to continue with the implementation of the new web-based clinical incident management system (Datix CIMS). The new Datix CIMS is a coup for WA Health and will be instrumental in providing both qualitative and epidemiological data to direct and address our system's patient safety issues.

This is the second report in the WA Health Patient Safety series which continues the integration of clinical incident reporting within WA. The aim of this report is to provide evidence of the types of patient safety issues that require greater focus and will assist clinicians and researchers in finding solutions that further improve our health care delivery.

We must focus on every patient, every time, everywhere. Delivering safe care is in our own hands.

**DR DOROTHY JONES
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Contents

Foreword	i
Contents	ii
List of Figures	iii
List of Tables	iv
Common Acronyms	v
Patient Safety Process	1
Executive Summary	5
About this Report	7
Clinical Incident Management: Overall Notifications	8
SAC 1 Clinical Incidents	12
Sentinel Event Notifications	13
Other SAC 1 Clinical Incident Notifications	15
SAC 1 Contributory Factor Analysis	17
Sentinel Events	19
SAC 1 Case Study	27
Key SAC 1 Clinical Incident Messages	28
SAC 2 Clinical Incidents	30
SAC 2 Clinical Incident Focus	32
SAC 2 Case Study	35
Key SAC 2 Clinical Incident Messages	36
SAC 3 Clinical Incidents	38
SAC 3 Clinical Incident Focus	40
SAC 3 Case Study	44
Key SAC 3 Clinical Incident Messages	45
Quality of Care	47
Coronial Review	53
Review of Death (formerly known as WARM)	59
Western Australian Audit of Surgical Mortality	61
DVT and PE: Multiple Failures Lead to Death	64
Current Achievements	66
Future Focus	68
Appendix One	70
Appendix Two	73
Appendix Three	74
Appendix Four	75
Data Quality Statement: For Datasets Used in This Report	76
Glossary	77

List of Figures

Figure 1:	Clinical Incidents by SAC	1
Figure 2:	Clinical Incident Notification Processes	3
Figure 3:	Percentage of Clinical Incidents by SAC (2012/13)	9
Figure 4:	Percentage of SAC 1 Clinical Incidents by Category (2012/13)	12
Figure 5:	Frequency of Sentinel Event by Category (2003/04 to 2012/13)	14
Figure 6:	Percentage of Other SAC 1 Clinical Incidents by Category (2012/13)	15
Figure 7:	Frequency and Percentage of Contributory Factors Identified for SAC 1 Clinical Incidents (2012/13)	17
Figure 8:	Frequency and Percentage of the Contributory Factors Identified for SAC 1 Clinical Incidents (2010/11 to 2012/13)	18
Figure 9:	Frequency and Percentage of Contributory Factors Identified for Complication of an Inpatient Fall SAC 1 Clinical Incident (2012/13)	22
Figure 10:	Frequency and Percentage of Contributory Factors Identified for Unexpected Death of a Mental Health Patient SAC 1 Clinical Incident (2012/13)	24
Figure 11:	Percentage of Principal Incident Types by SAC 2 Category (2012/13)	30
Figure 12:	Frequency and Percentage of Outcome Levels for SAC 2 Clinical Incidents (2012/13)	32
Figure 13:	Frequency and Percentage of Staff Contributory Factors to SAC 2 Falls and Behaviour Clinical Incidents (2012/13)	33
Figure 14:	Frequency and Percentage of Patient Contributory Factors to SAC Falls and Behaviour Clinical Incidents (2012/13)	34
Figure 15:	Frequency and Percentage of System Contributory Factors to SAC 2 Falls and Behaviour Clinical Incidents (2012/13)	34
Figure 16:	Percentage of PIT for SAC 3 Clinical Incidents (2012/13)	38
Figure 17:	Frequency and Percentage of Outcome Levels for SAC 3 Clinical Incidents (2012/13)	40
Figure 18:	Ten Most Frequently Cited Medications Involved in SAC 3 Medication Clinical Incidents (2012/13)	41
Figure 19:	Frequency and Percentage of Staff Contributory Factors to SAC 3 Medication and Fall Clinical Incidents (2012/13)	42
Figure 20:	Frequency and Percentage of Patient Contributory Factors to SAC 3 Falls and Medication Clinical Incidents (2012/13)	43
Figure 21:	Frequency and Percentage of System Contributory Factors to SAC 3 Falls and Medication Clinical Incidents (2012/13)	44
Figure 22:	Frequency and Percentage of SAC Clinical Incidents Compared to HMDC COF Code Data (2012/13)	50
Figure 23:	Frequency and Percentage of Top Ten HMDC COF Code Data (2012/13)	51

List of Tables

Table 1:	Frequency and Percentage of the Top Five Confirmed SAC 1 Clinical Incident Categories (2012/13)	9
Table 2:	Frequency and Percentage of the Most Confirmed SAC 1 Clinical Incident Categories for Mental Health Patients (2012/13)	10
Table 3:	Frequency and Percentage of the Top Five Principal Incident Types for SAC 2 and 3 Clinical Incidents (2012/13)	10
Table 4:	Frequency of Confirmed SAC 1 Clinical Incidents by National Sentinel Event and Other SAC 1 Clinical Incident Type (2003/04 to 2012/13)	13
Table 5:	Frequency of Confirmed SAC 1 Clinical Incidents Other than Sentinel Events (2003/04 to 2012/13)	16
Table 6:	Frequency and Percentage of the Top Five PIT by Nature of SAC 2 Clinical Incidents (2012/13)	31
Table 7:	Demographic Data for SAC 2 Falls and Behaviour Clinical Incidents (2012/13)	32
Table 8:	Frequency and Percentage of the Top Five PIT by Nature of SAC 3 Clinical Incident (2012/13)	39
Table 9:	Demographic Data for SAC 3 Medication and Falls Clinical Incidents (2012/13)	40
Table 10:	WA Health Quality of Care Framework 2013/14	48
Table 11:	Overview of Coronial Liaison Unit Activity (2010 to 2013)	53
Table 12:	Review of Death Indicators	59
Table 13:	Frequency and Percentage of Adverse Events Causing Death that were Considered Definitely Preventable (2003 to 2012)	61
Table 14:	Frequency of Adverse Events Causing Death for 2010 to 2012 and Includes Events that were Not Considered Preventable	62
Table 15:	Most Frequently Reported Adverse Events Causing Death 2003 to 2012 and Includes Events that were Not Considered Preventable	63

Common Acronyms

ACSQHC	Australian Commission on Safety and Quality in Health Care
AMI	Acute Myocardial Infarction
CHADx	Classification of Hospital Acquired Diagnoses
CIM	Clinical Incident Management
CIMS	Clinical Incident Management System database
CLU	Coronial Liaison Unit
CPD	Continuing Professional Development
CPoA	Condition Present on Admission
DVT	Deep Vein Thrombosis
FNOF	Fractured Neck of Femur
HS	Health Service/s
HMDC	Hospital Morbidity Data Collection
HSMR	Hospital Standardised Mortality Ratio
NSQHS	National Safety and Quality Health Service (Standards)
OSQH	Office of Safety and Quality in Healthcare
PIRC	Peak Incident Review Committee
PIT	Principal Incident Types
PMF	Performance Management Framework
PSSU	Patient Safety Surveillance Unit
PE	Pulmonary Embolism
QoCF	Quality of Care Framework
ROD	Review of Death
ROGS	Report on Government Services
SAC	Severity Assessment Codes
VLAD	Variable Life Adjusted Display
VP	Ventricular Peritoneal (shunt)
WAASM	Western Australian Audit of Surgical Mortality
WA Health	Western Australian Health
WARM	Western Australian Review of Mortality



Patient Safety Process

Western Australian Health (WA Health) is committed to delivering safe and high quality health care which is achieved through the provision of health care that is:

- evidence based
- governed by sound clinical practice
- efficient
- focussed on preventing and reducing the impact of clinical incidents.

While prevention is always the best strategy, it is also important to investigate and address clinical incidents when they occur. The reporting and investigation of a clinical incident enables strategies to be put into place to improve the safety of health care delivery and prevent another patient being harmed. To further enhance the clinical incident process, Severity Assessment Codes (SAC; see Figure 1), are used to guide incident analysis, action and escalation. Clinical incidents are categorised according to the harm caused to the patient by the delivery of health care and not the patient's underlying condition/illness.

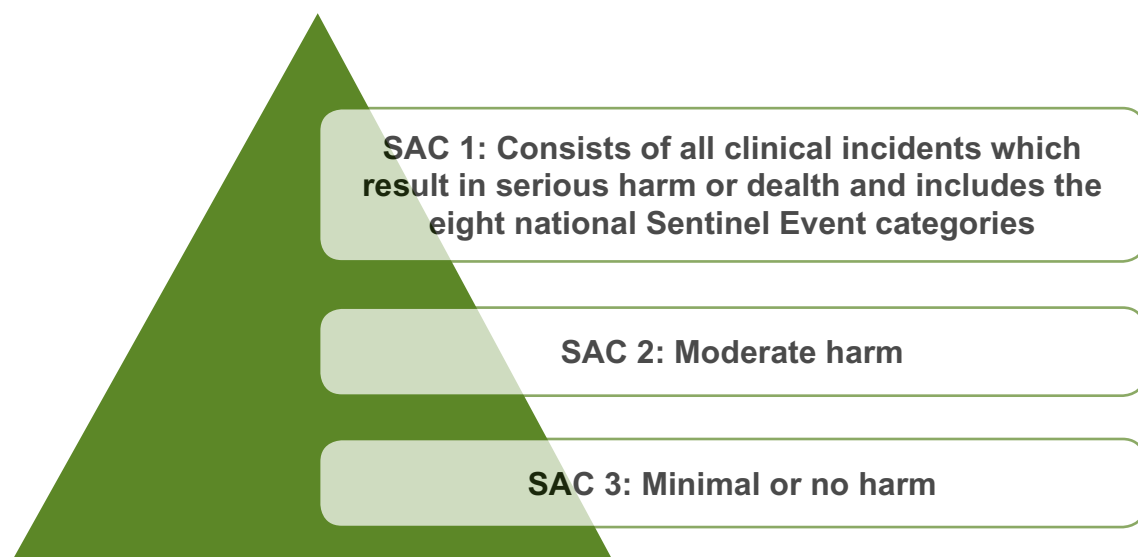
A **SAC 1** rating refers to clinical incidents resulting in serious harm/death/near miss, and includes the eight nationally reported clinical incidents known as sentinel events:

1. Procedure involving wrong patient or body part resulting in death or major permanent loss of function.
2. Suicide of a patient in an inpatient unit (or whilst on leave).
3. Retained instruments or other material after surgery requiring return to theatre.
4. Intravascular gas embolism resulting in death or neurological damage.
5. Haemolytic blood transfusion reaction resulting from ABO incompatibility.
6. Medication error resulting in death of a patient.
7. Maternal death or serious morbidity associated with labour or delivery.
8. Infant discharged to wrong family or infant abduction.

SAC 2 rating refers to clinical incidents resulting in moderate harm/near miss and

SAC 3 rating refers to clinical incidents resulting in minimal/no harm/near miss.

Figure 1: **Clinical Incidents by SAC**

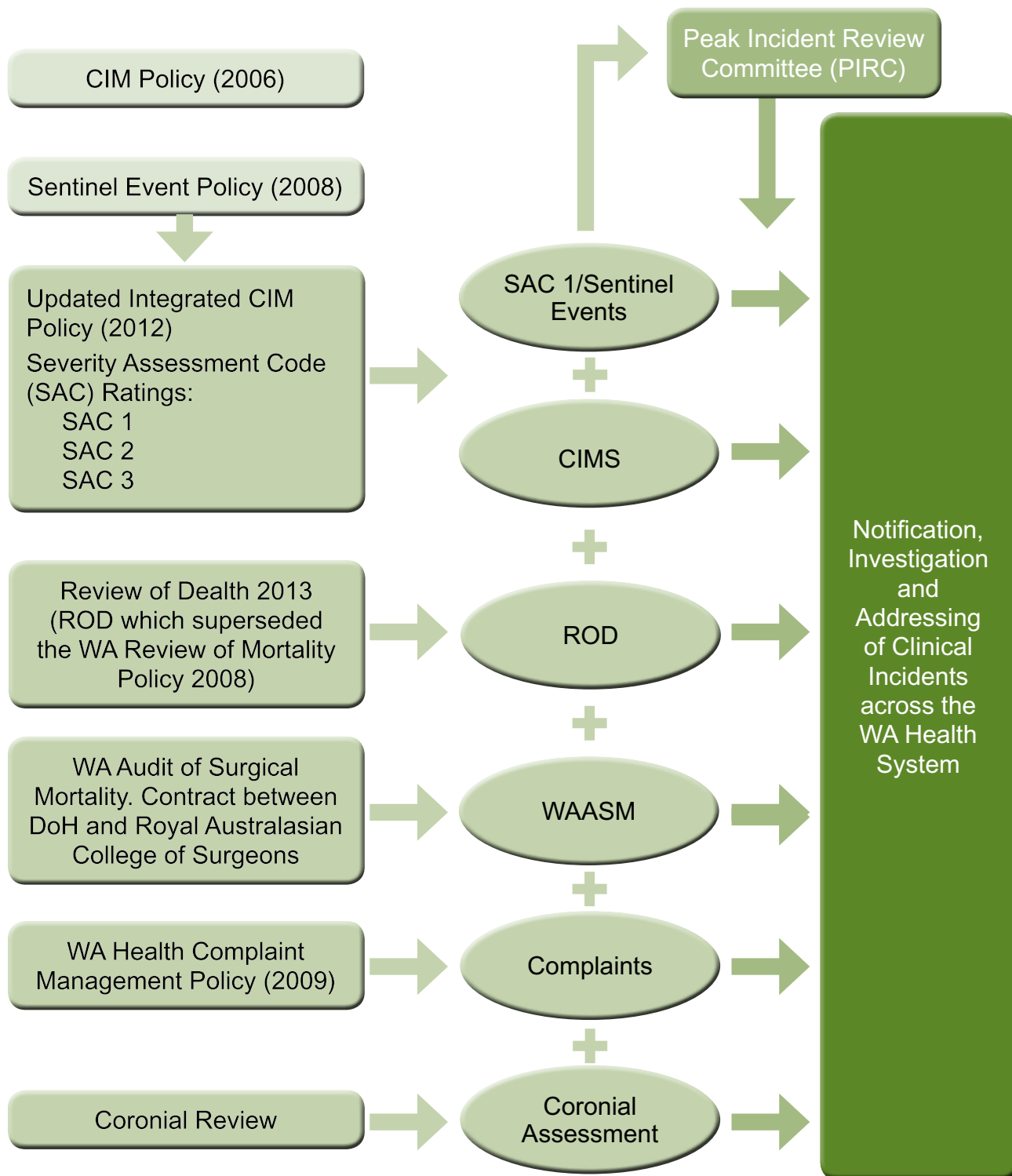


When a clinical incident is identified, immediate action is taken to provide care to the patient involved. Once this has occurred a clinical incident form is completed to notify senior staff and enable an appropriate investigation to take place. The clinical incident is then assigned a SAC rating that guides the type of investigation method used (see Figure 2).

Clinical incidents resulting in serious harm or death (SAC 1) require a detailed and rigorous investigation to be undertaken. Analysis of the clinical incident is then undertaken which results in the implementation of recommendations to prevent the clinical incident from recurring. All clinical incidents are then captured in the Clinical Incident Management System (CIMS) database and the Severity Assessment Code 1 database. This clinical incident data is then used at a local and state-wide level to review trends and identify areas where practice improvements can be achieved. Complementing this annual report is the release of the CIM Quarterly Report which includes all SAC 1 and CIM data. The quarterly CI Check-Up Report is a one page poster report that focuses on specific state-wide clinical incident trends. These reports are available at: <http://intranet.health.wa.gov.au/osqh/reports/>

Additional strategies to further strengthen the clinical incident notification process include the Review of Death (ROD) Policy formally known as the WA Review of Mortality (WARM) and the WA Audit of Surgical Mortality (WAASM). The purpose of ROD and WAASM is to systematically review patient deaths to identify those that may have been preventable so that lessons can be learnt. These separate state-wide review processes (SAC 1 clinical incident notification, ROD, and WAASM) ensure that clinical incidents resulting in a patient's death are captured, notified and investigated. Complaints are also an integral component of CIM but due to data discrepancies, complaints data is not presented in this report but will be included in the next iteration of the report. All health related findings from coronial inquests are reviewed and assessed, with recommendations then considered by HS and implemented where appropriate.

Figure 2: **Clinical Incident Notification Processes**



Considerable initiatives and resources have been invested to improve patient safety within WA Health, with the overarching goal of addressing clinical incidents at the local and system level, analysis of contributory factors, and raising awareness/education to prevent the recurrence of clinical incidents. Resources to guide clinical incident management include the CIM Policy¹ and CIM Toolkit, which were first released in September 2011 (replacing the Sentinel Event Policy) with a 12 month review undertaken in 2012.

¹ Clinical Incident Management Policy (2012; Operational Directive 0421/13).



Executive Summary

This second edition of the Your Safety in Our Hands Report 2012/13 provides to the West Australian (WA) public, information and data on how WA Health manages and resolves clinical incidents and coronial recommendations resulting from health care delivery.

During 2012/13 there were 643,834² hospital separations, with 16,407 clinical incidents notified. Clinical incidents were associated with 2.5% of separations.² The majority of clinical incidents (n=9,231; 57%) reported in 2012/13 resulted in minimal or no harm to the patient (SAC 3).

There were 326 SAC 1 clinical Incidents notified and investigated, with 309 of these clinical incidents confirmed by public hospitals, private licensed healthcare facilities, and other non government organisations which is a substantial increase in notifications compared to the previous reporting periods (90 notifications in 2010/11, 174 notifications in 2011/12). Nineteen SAC 1 clinical incidents comprised one of the eight national sentinel event incident categories. The most frequently reported category of SAC 1 clinical incident included complications of an inpatient fall (n=77), the unexpected death of a mental health patient (n=47) and the absconding of any mental health patient (n=27). The rate of SAC 1 clinical incidents continues to remain low and was calculated at 5 clinical incidents per 10,000 hospital separations.³

The substantial increase in the number of SAC 1 clinical incidents reported, clearly demonstrates the effectiveness of the revised Clinical Incident Management Policy (2012). Specifically, the CIM Policy has enabled staff to better classify a clinical incident and thereby ensure that the appropriate SAC is assigned and that the most suitable investigation methodology is undertaken. Furthermore, increased clinical incident reporting is evidence of a system that has embraced patient safety and is continually working toward improving the delivery of health care by notifying, investigating and implementing system improvements.

Communication factors and issues in relation to policies, procedures and guidelines continue to be the major contributory factors identified in the investigation of SAC 1 clinical incidents and therefore warrant continued focus if improvements in patient safety are to be achieved.

Clinical Incident Management in WA Health is entering a new phase with the recent purchase and implementation of a state-wide electronic system to capture, monitor and analyse clinical incidents. The procurement of this new web based Datix CIMS is a huge coup and one that will benefit not only WA Health staff but more importantly will benefit our patients. Specifically, the utilisation of an electronic CIMS will streamline the clinical incident process by offering a complete seamless patient safety work flow which allows the notification of clinical incidents to be easily and quickly managed and investigated. The new CIMS will provide access to data in real time thereby eliminating the two to three month time lag currently experienced with a paper based system. The implications of this mean that clinical incident trends and detailed reports can be developed and disseminated quickly to allow clinical incident issues to be addressed more promptly.

² Public hospital separations include public patient separations from Joondalup and Peel Health Campus.

³ Please note that the numerator for the SAC 1 clinical incident rate includes incidents reported from WA Health hospitals and community health services, private licensed health care facilities and contracted non government organisations while the denominator only includes separation data from WA Health hospitals' inpatient activity. Separation data from private hospitals and non hospital organisations are not included in the SAC 1 rate calculations.

Further complementing clinical incident data analysis in this annual report is the inclusion of administrative data from the Hospital Morbidity Data Collection (HMDC) which captures all inpatient discharge summary data, including clinical incidents that have occurred during the inpatient stay. Considerable differences were observed between data sets with a significantly higher proportion of clinical incidents notified to the CIMS than were captured in the HMDC.

Complaints data were excluded due to discrepancies associated with data definitions. Standardisation of these complaints definitions is currently taking place via the implementation of the Complaints Policy (2013), and it is anticipated that complaints data will be included in the next iteration of the report.

The Coronial Liaison Unit (CLU) continues to work effectively with the Office of the State Coroner to share lessons learned from mortality review to improve future patient care.

Twelve coronial findings relevant to WA Health were released in 2012/13 with 23 health recommendations currently being implemented across all relevant Health Services (HS).

All deaths that occur whilst the patient is under the care of a surgeon are notified to the WAASM office during each calendar year, with 584 deaths notified in 2013. The WAASM Annual Report (2013) identified ten adverse events that caused death in 2011 (two of these were considered preventable) and three adverse events that caused death in 2012⁴ (one of these was considered preventable).

The WAASM report is available at:

<http://www.surgeons.org/for-health-professionals/audits-and-surgical-research/anzasm/waasm/>

Finally, patient safety is a critically important component of health care delivery. In 2012/13, WA Health provided 643,834 episodes of care to inpatients. Encouragingly, reported clinical incidents were associated with only 2.5% (n=16,407) of separations and an even lower figure was reported for confirmed SAC 1 clinical incidents (n=309; 0.19%). However, more work in enhancing communication and engaging staff in adopting safer practices are required if further advancements in patient safety are to be achieved.

⁴ Partial analysis – 2012 data includes that for which the audit process was complete at March 1, 2013.

About this Report

This comprehensive patient safety report for 2012/13 is the second WA Health report of this kind to integrate findings captured from the:

- CIMS and SAC 1 database
- Hospital Morbidity Data Collection (HMDC)
- Review of Death (ROD, formally known as WARM)
- Western Australian Audit of Surgical Mortality (WAASM)
- Coronial Review process.

Data for 2012/13 are presented with the following caveats:

- CIMS data has a two month coding/reporting lag with 2,934 clinical incidents outstanding as at 30 June 2013.
- There is a two to three month HMDC data coding/reporting lag.
- The ROD data reflects a 9 month period (July 1 2012 – March 31 2013), with April 1 to June 30 data not due for submission at the time of this report.
- The SAC 1 and Coronial data include a full 12 months of financial year data.
- The WAASM data are captured by calendar year.

Declassification of a SAC 1 clinical incident may occur if it is identified that no healthcare causative factors contributed to the incident outcome. Declassification requests are tabled at the Peak Incident Review Committee (PIRC), which provides oversight of SAC 1 clinical incidents, the WA Sentinel Event program, Coronial Liaison Unit and mandatory mortality review processes. Care should be taken when comparing data from previous reports as the data summarised here are taken from dynamic systems and the number of clinical incidents will vary over time. It is anticipated that future reports will not incur this data time lag once WA Health has moved to an online electronic Datix CIM notification system. The inclusion of composite case studies for each of the three SAC categories is used to facilitate learning opportunities by highlighting a few examples of the hundreds of quality improvement projects undertaken across WA Health, to address and improve patient safety. This annual report excludes complaints data due to discrepancies associated with data definitions. Standardisation of these complaints definitions is currently taking place and it is anticipated that complaints data will be included in the next iteration of this report.

Clinical Incident Management: Overall Notifications

WA Health uses the CIMS, which is a voluntary reporting system whereby staff, patients, clients, carers or visitors who witness a clinical incident are encouraged to notify the clinical incident. The CIMS is one of several reporting systems used by WA Health to capture clinical incidents. It facilitates the notification, investigation, analysis and monitoring of the clinical incidents that occur within all public hospitals in Western Australia.

A separate SAC 1 reporting system is also utilised to capture data on clinical incidents that result in serious harm/death or near miss. It is a mandatory requirement for all public hospitals/health services as well as all private licensed health care facilities and contracted non government organisations to notify and investigate SAC 1 clinical incidents.⁵

Between 1 July 2012 and 30 June 2013 there were 643,834 separations from public hospitals and public patients attending two private hospitals (Peel Health Campus and Joondalup Health Campus). Reported clinical incidents were associated with 2.5% (n=16,407) of hospital separations.

The rate of clinical incidents observed between July 2012 and June 2013 was calculated at:

- 5 SAC 1 clinical incidents per 10,000 separations⁶
- 100 SAC 2 clinical incidents per 10,000 separations
- 138 SAC 3 clinical incidents per 10,000 separations.

Clinical incidents categorised as SAC 3 (n=9,231; 57%), referring to minimal or no harm, were the most frequently reported category of clinical incidents (see Figure 3). The next most frequently reported incident category was SAC 2 clinical incidents (n=6,693; 41%) followed by SAC 1 clinical incidents (n=326; 2%).⁷

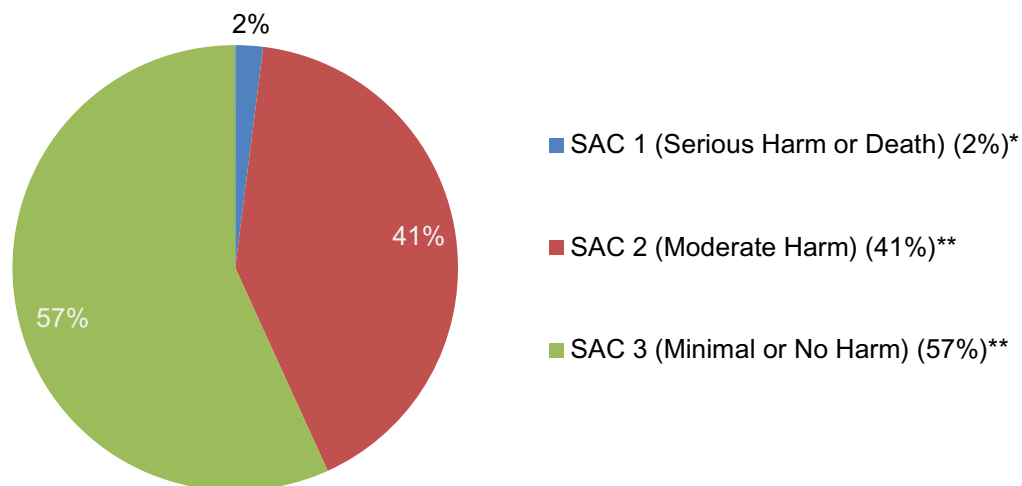
⁵ Further information on the licensing of private healthcare facilities can be found at:

http://www.public.health.wa.gov.au/2/1350/2/licensing_of_private_healthcare_facilities.pm

⁶ Please note that the numerator for the SAC 1 clinical incident rate includes incidents reported from WA Health hospitals and community health services, private licensed health care facilities and contracted non government organisations while the denominator only includes separation data from WA Health hospitals' inpatient activity. Separation data from private hospitals and non hospital organisations are not included in the SAC 1 rate calculations.

⁷ Missing data for SAC 2 and SAC 3 clinical incidents n=157.

Figure 3: **Percentage of Clinical Incidents by SAC (2012/13)**



* SAC 1 clinical incidents include clinical incidents from public and private hospitals and non government organisations in accordance with their license or contract with WA Health.

** SAC 2 and SAC 3 missing data n=157.

The five most frequently reported confirmed SAC 1 clinical incident categories representing 73.7% (n=228) of confirmed SAC 1 clinical incidents are presented in Table 1.

Table 1: **Frequency and Percentage of the Top Five Confirmed SAC 1 Clinical Incident Categories (2012/13)**

SAC 1 Category	(n)	(%)
Complication of an inpatient fall	77	24.9
Unexpected death of a mental health patient	47	15.2
Any other clinical incident resulting in serious harm or death	31	10.0
Absconding of any mental health patient	27	8.7
Complications of surgery	23	7.4
Misdiagnosis and subsequent management	23	7.4
Total	228	73.7

The most frequent SAC 1 clinical incidents involving mental health patients accounted for 27.1% (n=84) of all confirmed SAC 1 clinical incidents, with 47 clinical incidents resulting in the unexpected death of a mental health patient (see Table 2).

Table 2: **Frequency and Percentage of the Most Confirmed SAC 1 Clinical Incident Categories for Mental Health Patients (2012/13)**

SAC 1 Category	(n)	(%)
Unexpected death of a mental health patient	47	15.2
Absconding of any mental health patient	27	8.7
Suicide of an inpatient (or whilst on authorised leave)	10	3.2
Total	84	27.1

The five most frequently reported Principal Incident Types (PIT) categories, which represent 84.7% (n=14,168) of all SAC 2 and 3 clinical incidents reported during the 2012/13 period, are presented in Table 3. Falls continue to be the most frequently reported clinical incident accounting for 24.8% (n=4,070) of all clinical incidents in 2012/13, followed closely by medication incidents (n=3,693; 22.5%).

Table 3: **Frequency and Percentage of the Top Five Principal Incident Types for SAC 2 and 3 Clinical Incidents (2012/13)* ****

Principal Incident Type SAC 2/3	(n)	(%)
Falls	4,070	24.8
Medication	3,693	22.5
Other	2,396	14.6
Behaviour	1,949	11.9
Injury	1,790	10.9
Total	14,168	84.7

* Remaining PIT included: Blood, Oxygen, Gas clinical incidents, Documentation clinical incidents, Nutrition clinical incidents, Safety or Security incidents and Therapeutic devices incidents.

** SAC 2 and SAC 3 missing data n=157 and Principal Incident Type missing data n=113.



SAC 1 Clinical Incidents

The reporting of SAC 1 clinical incidents is mandatory for WA public hospitals, all private licensed health care facilities and non government organisations (in accordance with their license or contract with WA Health). The 2012/13 reporting period reflected the first complete period HS have reported SAC 1 clinical incidents as per the CIM Policy, which was introduced in September 2011.

In 2012/13, 326 SAC 1 clinical incidents were notified by WA public, private licensed health care facilities, and non government organisations. Seventeen clinical incidents had been declassified at the time of this report (based on data as of the 1st of July 2013), with 309 SAC 1 clinical incidents confirmed. The potential declassification of further SAC 1 clinical incidents, and thus a smaller count of confirmed SAC 1 clinical incidents, subsequent to the release of this report are acknowledged.

The majority of SAC 1 clinical incidents notified in 2012/13 were of non sentinel event categories (n=290, 94%), with 19 (6%) SAC 1 clinical incidents reflecting the notification of a sentinel event (See Figure 4).

Figure 4: **Percentage of SAC 1 Clinical Incidents by Category (2012/13)**

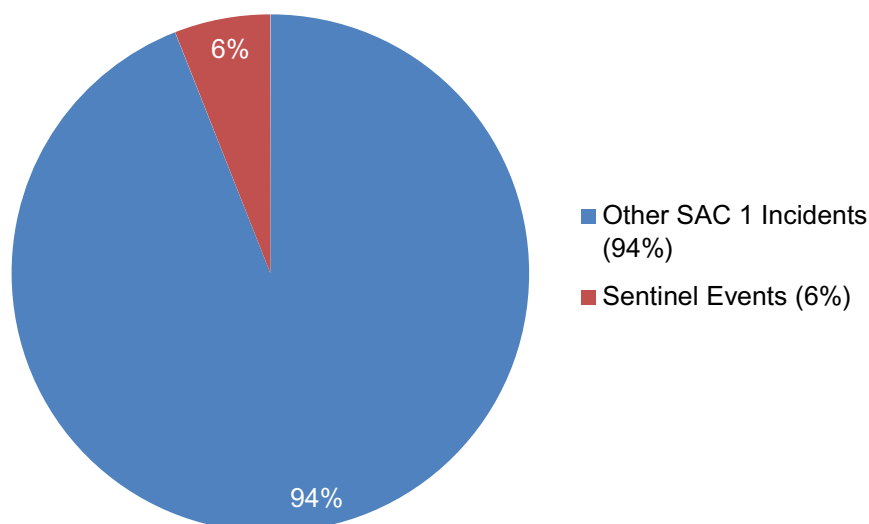


Table 4 illustrates confirmed SAC 1 clinical incidents notified by year from 2003/04 to 2012/13. As in previous periods, irrespective of reporting requirements, the majority of notified clinical incidents were those other than the eight sentinel event categories.

Table 4: **Frequency of Confirmed SAC 1 Clinical Incidents by National Sentinel Event and Other SAC 1 Clinical Incident Type (2003/04 to 2012/13)**

SAC 1 Category	2003/04	2004/05	2005/06	2006/07	2007/08	2008/09	2009/10	2010/11	2011/12	2012/13
Sentinel Events	4	19	13	15	37	25	11	17	15	19
Other SAC 1 incidents	18	23	31	32	45	56	34	73	159	290
TOTAL	22	42	44	47	82	81	45	90	174	309

Note: Data reflects confirmed SAC 1 clinical incidents and excludes declassified SAC 1 clinical incidents.

Death was an outcome in 107 (35%) of confirmed SAC 1 clinical incidents. Utilising separation data from all public hospital and public patients at Peel and Joondalup Health Campus, this equates to a rate of 1.6 deaths per 10,000 hospital separations.⁸

Sentinel Event Notifications

Sentinel events represent eight specific types of clinical incident that were endorsed by Australian Health Ministers in 2004. Western Australian public hospitals (and later licensed private healthcare facilities) have provided notification of their occurrence since 2004.

In addition to the annual reporting of sentinel events within this report, sentinel event notifications by WA Public Hospitals are included in the Australian Government Productivity Commission Report on Government Services (ROGS) annual report, and aggregated at a national level in the Australian Commission for Safety and Quality in Health Care publication *Windows into Safety and Quality in Health Care*.^{9,10}

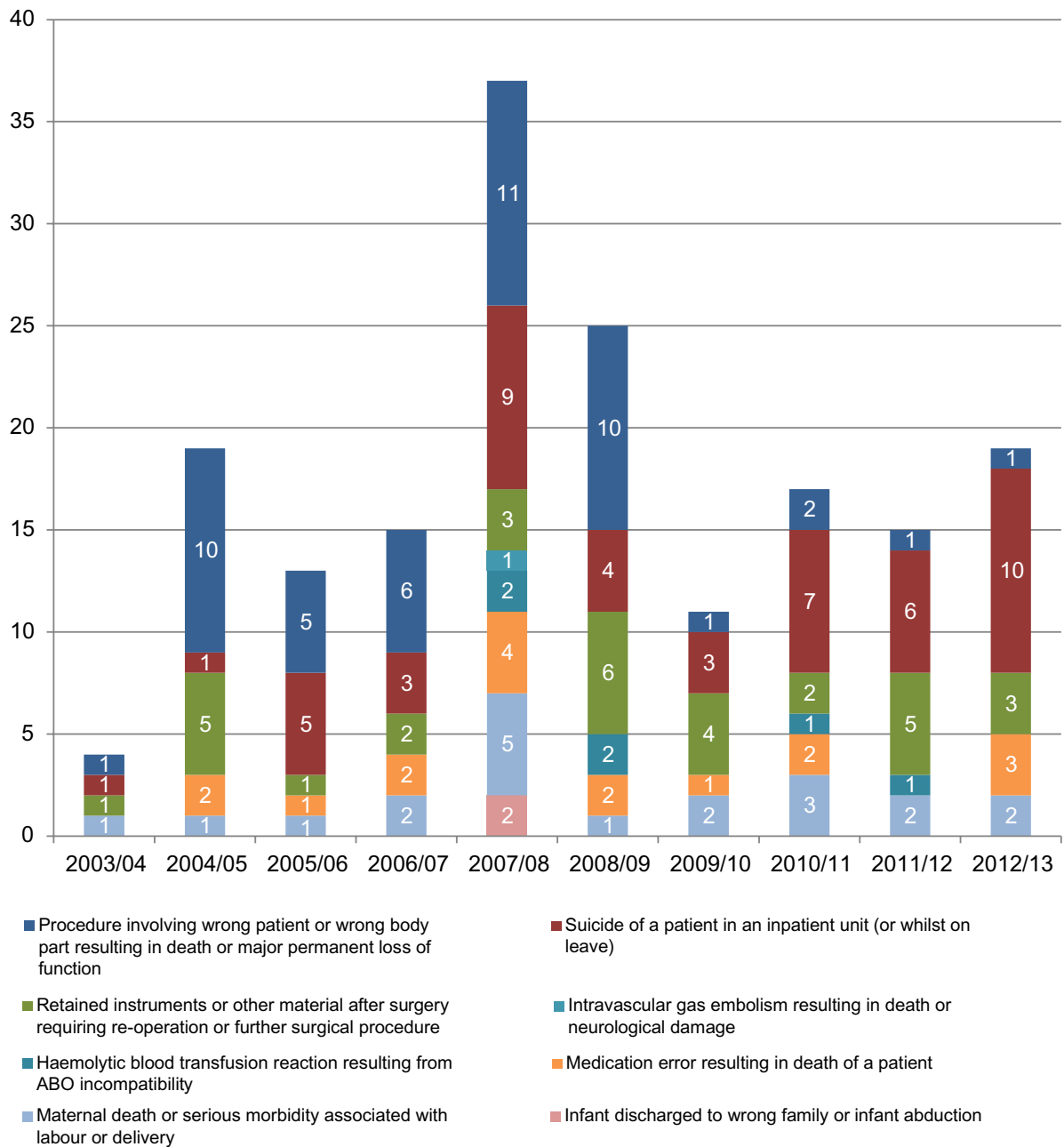
Figure 5 identifies the different categories of sentinel events notified from 2003/04 to 2012/13. The most frequently reported categories in 2012/13 were suicide of a patient in an inpatient unit (n=10), followed by retained instrument or other material after surgery requiring re-operation or further surgical procedure (n=3), medication error resulting in death of a patient (n=3) and maternal death or serious morbidity associated with labour or delivery (n=2). There were no notifications of infant discharged to the wrong family or infant abduction, haemolytic blood transfusion reaction resulting from ABO incompatibility, or intravascular gas embolisation resulting in death or neurological damage.

⁸ Calculation includes all notified SAC 1 clinical incidents with an outcome of death including those notified by private hospitals and non hospital organisations. Separation data from private hospitals and non hospital organisations are not included in calculations.

⁹ Productivity Commission Report on Government Services Reports can be accessed at: <http://www.pc.gov.au/gsp/rogs/2012>

¹⁰ The Australian Commission on Safety and Quality in Health Care, 'Windows into Safety and Quality in Health Care' reports can be accessed at: <http://www.safetyandquality.gov.au/publications-resources/publications/?t=W>

Figure 5: Frequency of Sentinel Event by Category (2003/04 to 2012/13)



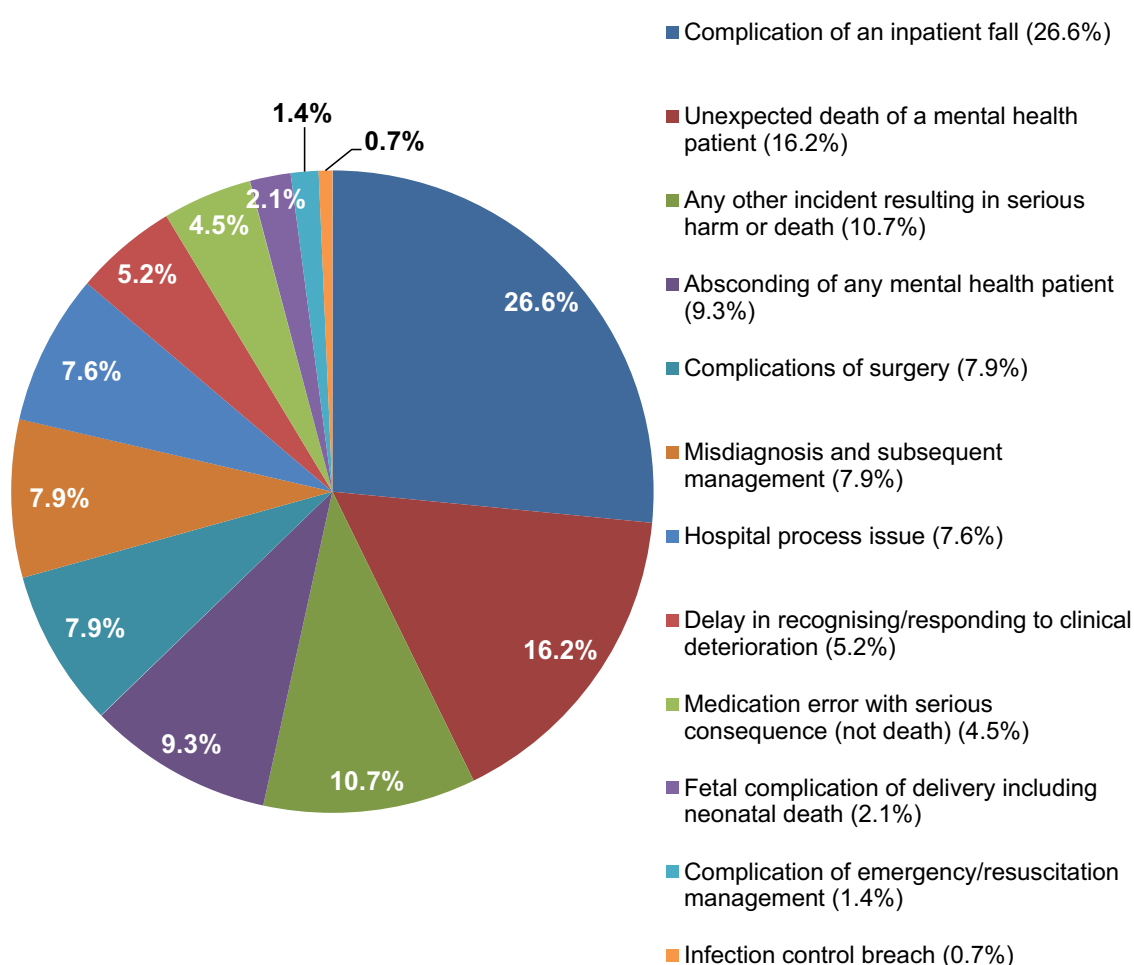
Data note: In 2009/10 the definition 'procedure involving the wrong patient or body part' was changed to only include clinical incidents 'resulting in death or major permanent loss of function.'

Other SAC 1 Clinical Incident Notifications

In 2012/13, there were 290 SAC 1 clinical incidents other than sentinel events notified (see Figure 6). Clinical incident types most frequently notified included:

- complication of an inpatient fall (n=77; 26.6%)
- unexpected death of a mental health patient (n=47; 16.2%)
- any other clinical incident resulting in serious harm or death (n=31; 10.7%)
- absconding of any mental health patient (n=27; 9.3%)
- complications of surgery (n=23; 7.9%)
- misdiagnosis and subsequent management (n=23; 7.9%).

Figure 6: **Percentage of Other SAC 1 Clinical Incidents by Category (2012/13)**



The frequency and type of SAC 1 clinical incidents (other than sentinel events) notified from 2003/04 to 2012/13 is presented in Table 5. The change in notification process based on SAC rating, in addition to greater clarity on the type of clinical incident to notify (as identified in the 2012 CIM Policy, see also Appendix one) makes comparison between the current and past periods difficult.

Table 5: **Frequency of Confirmed SAC 1 Clinical Incidents Other than Sentinel Events (2003/04 to 2012/13)**

	2003/04	2004/05	2005/06	2006/07	2007/08	2008/09	2009/10	2010/11	2011/12	2012/13
Complication of an inpatient fall (i)	-	-	2	5	6	7	1	11	34	77
Unexpected death of a mental health patient (ii)	-	-	-	-	-	-	-	-	30	47
Any other clinical incident resulting in serious harm or death	1	0	5	5	0	0	10	14	13	31
Absconding of any mental health patient (iii)	-	-	-	-	-	-	-	-	4	27
Complications of surgery	8	6	7	5	8	8	6	5	18	23
Misdiagnosis and subsequent management (iv)	-	-	-	-	-	1	5	10	6	23
Hospital process issue	3	9	7	7	22	16	2	14	11	22
Delay in recognising/responding to clinical deterioration (v)	-	-	-	-	-	-	-	-	10	15
Medication error with serious consequence (not death)	0	2	1	0	0	1	1	4	17	13
Fetal complication of delivery (including neonatal death)	2	2	6	5	6	14	2	6	4	6
Complication of emergency/resuscitation management	4	3	1	2	2	4	3	2	3	4
Infection control breach (vi)	-	-	-	1	0	1	2	1	2	2
Patient absconding with adverse outcome	1	0	0	0	1	3	2	4	5	0
Complication of anaesthetic management	0	1	0	1	0	1	0	2	2	0
Mental health incident (vii)	-	-	2	1	0	0	-	-	-	-
TOTAL	18	23	31	32	45	56	34	73	159	290

Note: Data reflects confirmed SAC 1 clinical incidents and excludes declassified SAC 1 clinical incidents. 2003/04 data comprises nine months only – 1 October 2003 to 30 July 2004.

The SAC 1 data base is a cumulative data base, with data changing over time as events are investigated retrospectively.

The addition of new subcategories to the SAC 1 data base, as well as additional information provided following the investigation of events, has resulted in reclassification of events to different sub categories.

(i) New category added for 2005/06. This event would previously have been classified as “Any other clinical incident”.

(ii, iii) New categories added 2011/12.

(iv) The category “not appropriate” was renamed “misdiagnosis and subsequent management” from the 2009/10 period.

(v) New category added 2011/12.

(vi) New category added 2006/07. These events would previously have been classified as “Any other clinical incident”.

(vii) Category not included from 2009/10.

SAC 1 Contributory Factor Analysis

Charles Vincent (2010) contended that if the purpose (of an incident investigation) is to achieve a safer healthcare system, then it is important to look beyond what happened and what caused it, to reflect on “what the incident reveals about the gaps and inadequacies in the healthcare system in which it occurred.”¹¹

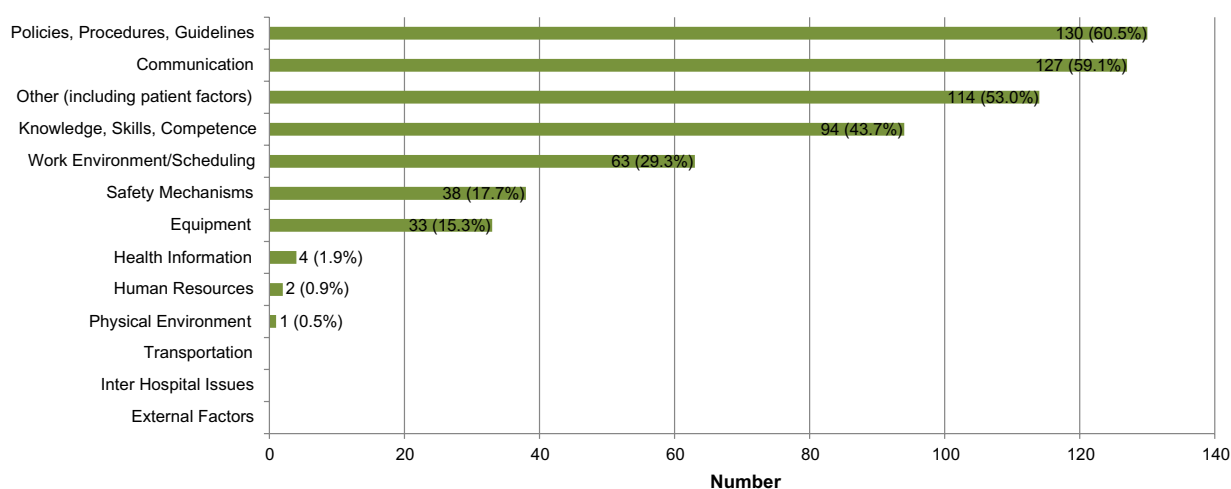
The investigations of SAC 1 clinical incidents seek to identify factors contributing to the incident. “Contributing factors/hazards are the circumstances, actions or influences which are thought to have played a part in the origin or development of an incident or to increase the risk of an incident. Examples are human factors such as behaviour, performance or communication; system factors such as work environment; and external factors beyond the control of the organization, such as the natural environment or legislative policy. More than one contributing factor and/or hazard is typically involved in a single patient safety incident.”¹²

Whilst the methodologies and processes employed by HS in investigating SAC 1 clinical incidents vary, common to all is the identification of contributory factors. Appendix two identifies contributory factor categories which are included within the SAC 1 clinical incident investigation report template. The PSSU provides this template to organisations to use as a guide to clinical incident investigation reporting.

Figure 7 shows the contributory factors identified following the investigation of 215 SAC 1 clinical incidents notified in the 2012/13 reporting period (representing 70% of all confirmed clinical incidents in 2012/13). At the time of this report (30 July 2013), the investigation of ninety-four SAC 1 clinical incidents remain in progress.

The most frequently identified contributory factors were those relating to policies, procedures and guidelines, identified in 60.5% (n=130) of investigated SAC 1 clinical incidents. This was followed by communication issues (59.1%, n=127), and other issues which included patient factors (for example the patients pre-existing medical condition; 53%, n=114).

Figure 7: **Frequency and Percentage of Contributory Factors Identified for SAC 1 Clinical Incidents (2012/13)**

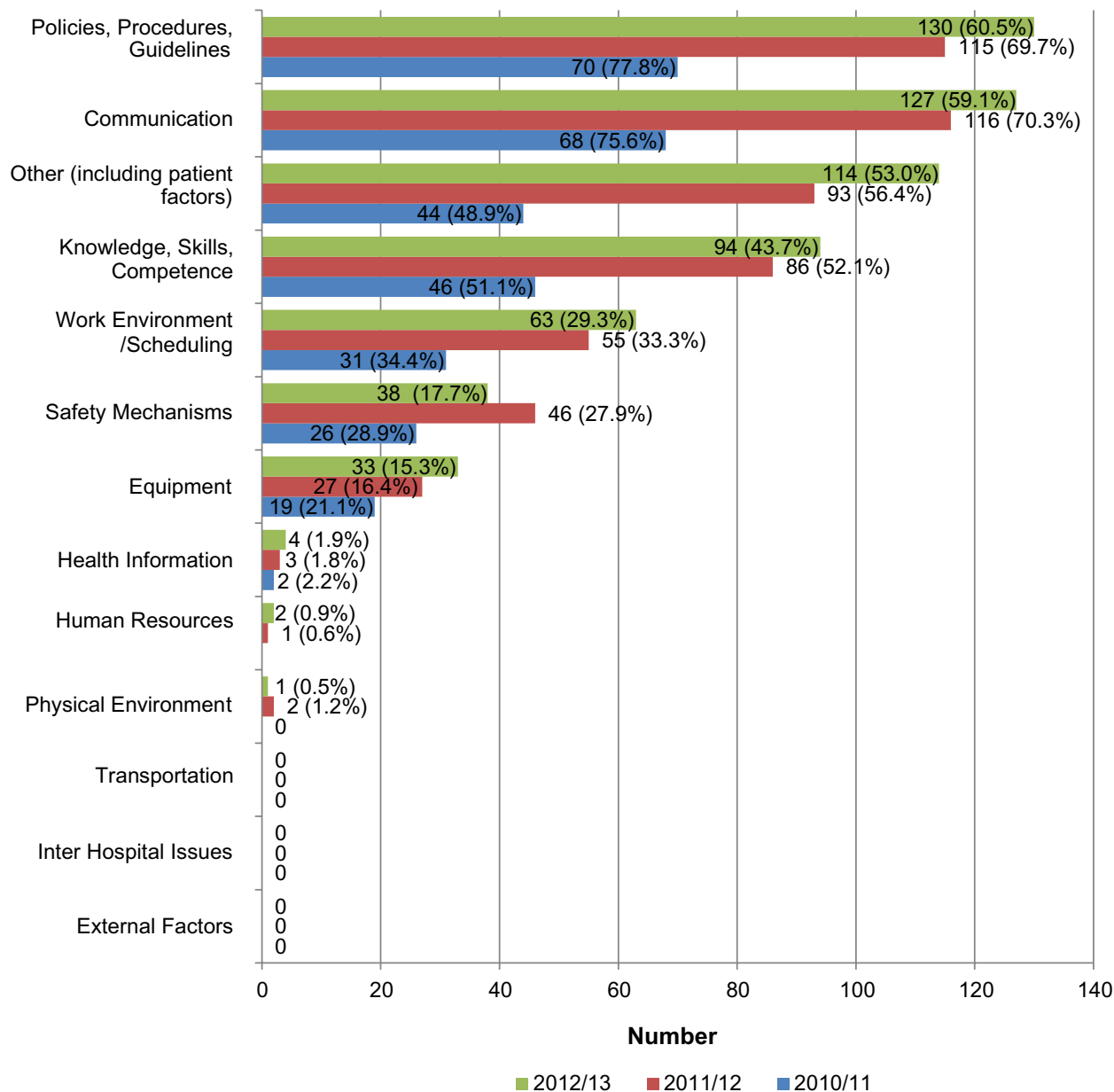


¹¹ Charles Vincent. Patient Safety. 2010. Second Edition. Wiley-Blackwell. p153.

¹² NHS Institute for Innovation and Quality Improvement, 2010, Quality and Service Improvement Tools; Cause and Effect, viewed 20 September 2013, London, (Available at: http://www.institute.nhs.uk/quality_and_service_improvement_tools/quality_and_service_improvement_tools/cause_and_effect.html)

Contributory factors identified in 2012/13 were compared with those identified in previous reporting periods (2010/11 to 2012/13; see Figure 8). The most frequently identified contributory factors for each period were those reflecting policies, procedures and guidelines, communication and patient (and other) factors.

Figure 8: Frequency and Percentage of the Contributory Factors Identified for SAC 1 Clinical Incidents (2010/11 to 2012/13)



Sentinel Events

In the 2012/13 period, 19 SAC 1 clinical incidents comprised sentinel event categories with a slight increase in notifications observed compared to the 2011/12 period (n=15). Of these 19 sentinel events, 13 incidents resulted in the death of the patient. The suicide of a patient in an inpatient unit (or whilst on authorised leave) accounted for 10 deaths with medication error accounting for the remainder.

Procedure Involving the Wrong Patient or Body Part (Sentinel Event Category 1)

The investigation that followed this clinical incident recommended the adoption of an alternative process when utilising x-ray confirmation prior to commencing a surgical procedure.

The Suicide of a Patient in an Inpatient Unit (or Whilst on Authorised Leave) (Sentinel Event Category 2)

Ten HS notified clinical incidents of this category in 2012/13, with six clinical incident investigations forwarded to the PSSU and four in progress at the time of reporting (30 July 2013). Notifications comprised clinical incidents where patients completed suicide within the inpatient setting (n=2), whilst on authorised leave (n=3), after absconding from the hospital setting (n=4), or whilst receiving hospital in the home type care in the community (n=1). Two investigations relating to the suicide of an inpatient on authorised leave, or whilst receiving hospital in the home care, did not identify healthcare related factors contributing to the clinical incident outcome with a decision as to the declassification of these clinical incidents yet to be determined.

Issues relating to communication, policy and the work environment, were factors identified in four clinical incidents where declassification had not been sought, these include:

- Escalation processes arising from patient assessment not facilitating timely communication between healthcare workers.
- Delayed information sharing (verbal and written) between clinicians that had the potential to affect the management plan for the patient.
- The admission criteria to a specialised unit identified as potentially not appropriate for a specific group of patient.
- Policies relating to the management of an inpatient environment impacting on the ability of staff to monitor ligature points.
- The design of an outdoor area of an inpatient unit not sufficient to deter at risk patients from absconding.

Recommendations to address the above-mentioned contributory factors comprised:

- Revision of interdisciplinary handover processes and the development of an escalation process that incorporated risk assessment and management plan review.
- Process changes to specify the timeframe for availability of patient information.
- The annual review of admission criteria coupled with environmental changes.
- Development of a procedure to appropriately identify and manage risks associated with the inpatient environment.
- Modifying the access and design of an outdoor area to limit the potential for patients to abscond via this location accompanied with changes in the management of at risk patients when accessing the area.

Retained Instruments or Other Material (Sentinel Event Category 3)

The following three clinical incidents were notified by two hospitals in the 2012/13 period:

1. A discrepancy in swab counts during the closure of an elective procedure occurred. The location of the swab was identified, with the swab retrieved through a second procedure that commenced immediately following the first. The non adherence to best practice with regards to documenting counts was identified in the investigation of this clinical incident, with a recommendation to address this issue including process changes.
2. A surgical pack was retained following abdominal surgery. Non-adherence to established practices regarding counts was identified as a contributory factor. The HS addressed this through the provision of additional education, supported by the regular auditing of practice.
3. Equipment utilised during a procedure was inadvertently retained. The investigation that occurred subsequent to the clinical incident, identified that adherence to accepted practices to locate equipment were not followed. The clinical incident was utilised locally by the HS to raise awareness of correct procedures/policies.

Medication Error Resulting in the Death of a Patient (Sentinel Event Category 6)

Three clinical incidents were notified by two hospitals in the 2012/13 period included:

1. An inpatient was prescribed and commenced oral anticoagulant therapy. Following a number of days of therapy the patient suffered a large haemorrhage and subsequently passed away. The outcome of this clinical incident investigation is still in progress.
2. A patient with a number of medical conditions presented to hospital. The patient's previous medical record documented that the patient had an allergy to penicillin. The patient was administered a different class of antibiotic (that had been administered in a previous admission with nil consequences), and subsequently suffered a cardiac arrest. The patient was resuscitated, however passed away five days later. The investigation of this clinical incident has not identified any healthcare related factors that contributed to the outcome, or recommendations to prevent the occurrence of similar clinical incidents. The notifying organisation has sought declassification of the clinical incident, which has yet to be determined at the time of reporting.
3. A patient admitted for management of heart failure was given cardiac medications and anticoagulants that were prescribed for another patient. The patient's condition deteriorated and the patient passed away two days later. Adherence to existing medication administration policies, inter-discipline communication, and clinician knowledge/skills/competence when commencing practice in a new clinical environment were identified as contributory factors to this clinical incident outcome.

The HS developed a number of recommendations including modifying competency based education requirements of clinicians working in the area where the clinical incident occurred, and the addition of scenario based simulations (including utilisation of the clinical incident in question) when orienting clinicians to the area.

Maternal Death or Serious Morbidity Associated with Labour (Sentinel Event Category 7)

In both clinical incidents notified in the 2012/13 period, significant post partum haemorrhage (PPH) occurred, leading to non elective hysterectomies.

Recommendations developed following an investigation of the two clinical incidents included:

- Improving the organisation's response to, and management of, PPH through the revision of existing protocols, supported by the provision of education to clinicians, and improved access to resources in the event of a significant haemorrhage.
- The development of a specific local policy replacing one initially developed for another service, and the up skilling of clinicians in the management and care of patients planning a vaginal birth after a previous caesarean section.

Other SAC 1 Clinical Incidents

Sixty six percent of SAC 1 clinical incidents (n=205) comprised one of five clinical incident types:

1. complication of an inpatient fall (n=77)
2. the unexpected death of a mental health patient (n=47)
3. any other clinical incident resulting in serious harm or death (n=31)
4. absconding of any mental health patient (n=27)
5. complications of surgery (n=23).

Whilst causative factors and recommendations are unique to each clinical incident, common themes are presented to assist in system wide learning.

Complication of an Inpatient Fall

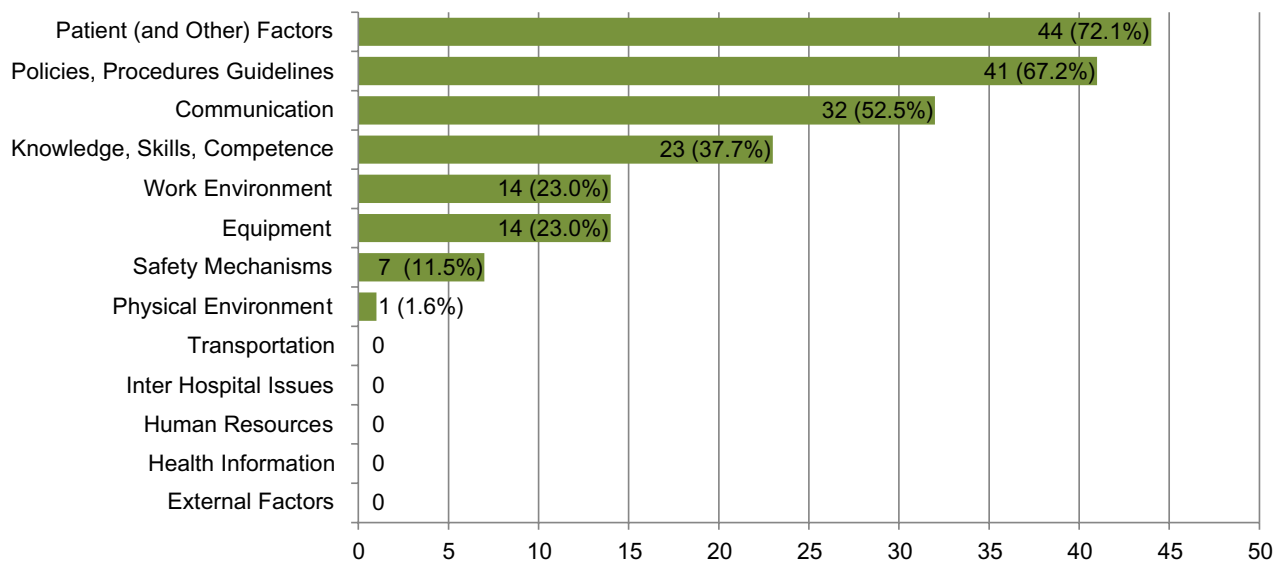
SAC 1 clinical incidents reflecting complications of an inpatient fall comprised the largest category of any SAC 1 clinical incident notified in 2012/13 (n=77). Notification information provided identified:

- Sixty four clinical incidents where the patient sustained at least one fracture. Of these clinical incidents fractures to the femur were the most frequent occurrence (n=40), followed by fractures of the upper limb (n=13) and spinal vertebrae (n=4).
- Twelve clinical incidents where the patient sustained a sub dural haemorrhage (SDH) or sub arachnoid haemorrhage (SAH).

Patient death was an outcome in 15 clinical incidents, with eight clinical incidents noting the sustaining of a SDH or SAH and seven clinical incidents where a fracture resulted.

At the time of data extraction for this report (30 July 2013), the completed investigation of 61 of 77 falls clinical incidents (79%) had been forwarded to the PSSU. Contributory factors identified in the investigation of the 61 clinical incidents are presented in Figure 9.

Figure 9: **Frequency and Percentage of Contributory Factors Identified for Complication of an Inpatient Fall SAC 1 Clinical Incident (2012/13)**



Contributory factors reflecting patient (or other) factors were identified in 44 of 61 clinical incidents. Issues related to policies, procedures, guidelines (identified in 41 clinical incidents), and communication issues (identified in 32 clinical incidents) were the next most frequently identified factors.

In relation to patient factors:

- Twenty one clinical incident investigations identified issues with patient cognition at the time the fall occurred.
- Nine clinical incident investigations noted a reluctance of the patient to seek assistance from clinical staff, or to comply with mobility requirements (for example not mobilising with appropriate aids).
- Fifteen clinical incident investigations documented that the patient had a significant medical history or co-morbidities.
- In ten clinical incidents it was documented that the patient had a recent history of falls.

With respect to the contributory factor policies, procedures and guidelines, the most common issue identified was the incomplete application of local falls risk management policies which included the appropriate completion of falls risk management tools. Variations in post fall management processes with local guidelines were also identified. A number of clinical incident investigations also identified the non adherence to policies or guidelines unique to each clinical incident; for example mobilisation, bladder management, appropriate ward admission, and the use of a companion/guard.

Issues relating to communication identified as a factor included delayed or incomplete communication of patient information, both written and verbal. Communication issues between disciplines and between different hospital areas were noted. Specific patient information identified in investigation reports included the:

- patient’s mobility status (including the level of supervision required when mobilising). Communicating mobility status to patient and family was also identified in two clinical incident investigations

- cognitive status of the patient
- level of agitation or propensity of a patient to wander
- patient's continence status.

Similar to previous reporting periods, the majority of investigation reports developed recommendations addressing the application by clinical staff of policies for preventing falls. The provision of education on the use, documentation and completion of the falls risk management tool were identified, including assessment requirements on patient admission to a ward or area, or reassessment following movement to a new clinical area.

A number of specific recommendations included:

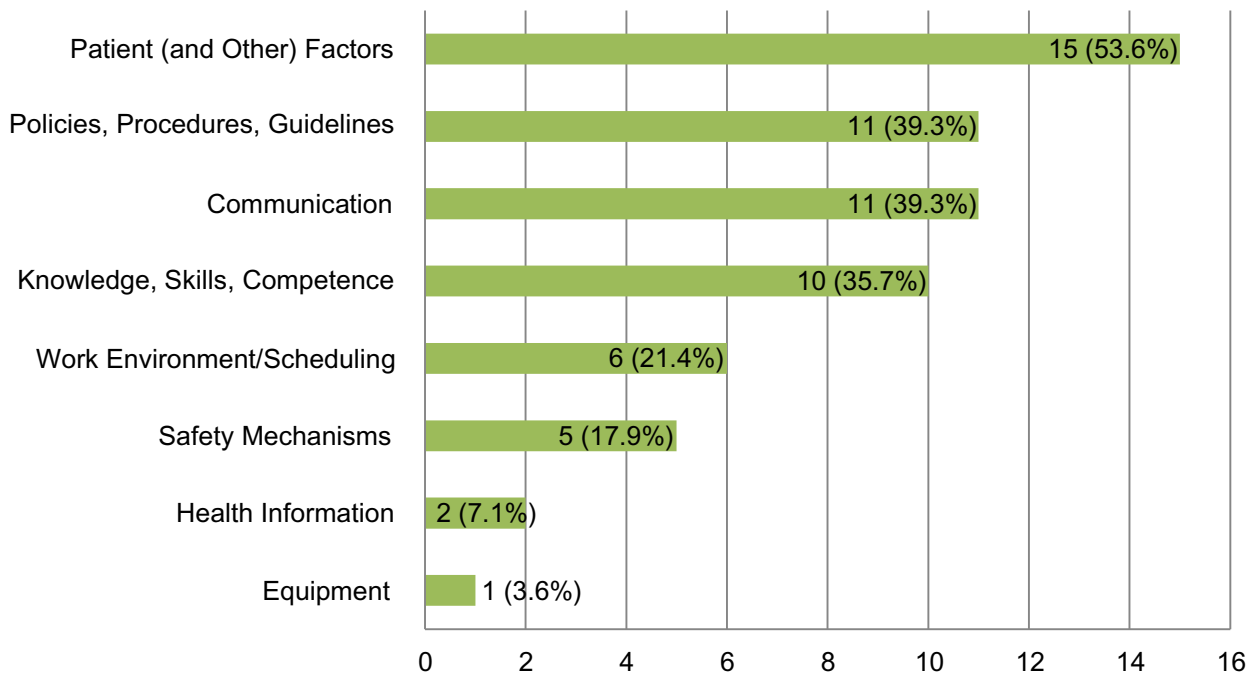
- Defining what "one person standby assistance" implies to clinicians when mobilising patients.
- Continuing to provide education on continence/bladder management.
- Raising awareness of the potential risks of prescribing multiple centrally acting medications to elderly patients.
- Ensuring greater use of interpreters when required.
- Increasing the availability of equipment to assist staff in managing patients at high risk of falls, including the use of floor alarm mats and low beds.

Recommendations in relation to post fall assessment and management requirements were identified in six investigations. This included clarifying medical and nursing responsibilities following a patient fall and reinforcing communication requirements following falls occurring overnight.

Unexpected Death of a Mental Health Patient/Client

'Unexpected death of a mental health patient/client' constituted the second largest category of SAC 1 notifications (n=47). Notifications comprised deaths occurring in the community (n=45) with two unexpected inpatient deaths. Twenty eight investigation reports have been submitted to the PSSU at the time of reporting (30 July 2013), with eight investigations accompanied with a request for declassification (not yet determined) as the investigating service did not identify healthcare related factors contributing to the clinical incident outcome. The remainder of investigation reports are still in progress. Figure 10 shows contributory factors for this clinical incident category, derived from the 28 investigation reports received. Patient (or other) factors were identified as the most frequent contributory factor (n=15).

Figure 10: **Frequency and Percentage of Contributory Factors Identified for Unexpected Death of a Mental Health Patient SAC 1 Clinical Incident (2012/13)**



Eleven investigation reports cited communication as a contributory factor. Communication issues between treating team members and service providers were identified, for example between inpatient and community mental health services, mental health services and general health practitioners and between private and public mental health services. Communication issues between service providers and patients/family/carers included delayed follow-up after non attendance at appointments, carer involvement in assessment processes, and the non involvement of patients in family assessments.

Documentation issues were identified in relation to patient and risk assessments, the need for clearly articulated management plans, and the inclusion of these within the Psychiatric Services Online Information System (PSOLIS). The documentation of outcomes and decisions of team reviews, the use of risk assessment tools in isolation to other information, and the absence of integrated biopsychosocial assessments were also identified.

The application of/currency of policies, procedures or guidelines were identified in eleven investigation reports, with specific issues identified relating to this factor including:

- The omission of incorporating risk and crisis management plans/actions, communication between relevant services, appropriateness of weekend discharge and level of risk at time of discharge into discharge summaries.
- Loss of relevant information during patient transfer between services/telephone handover.
- Guidance regarding the administration of antipsychotics for patients requiring transfer.
- Delayed follow-up in instances of non attendance at scheduled appointments.
- Unclear delineation of roles and responsibilities of team members/between different mental health services.

Recommendations developed in the investigation process primarily addressed:

- Strategies to improve staff compliance with and competence in the performance of complete, standardised and comprehensive clinical and risk assessments and management plans, including integrated biopsychosocial assessments.
- The review and revision of follow-up procedures, for example when clients did not attend appointments or when discharged from hospital whilst requiring further community mental health care.
- Clarification of and/or the establishment of roles and responsibilities with respect to inter-agency collaboration, communication and referral/handover processes. This included structuring regular meetings between facilities, implementation of referral and transfer protocols and enhancement of standardised and complete documentation.

Any Other Clinical Incident Resulting in Serious Harm or Death

In this category, 31 SAC 1 clinical incidents were notified in 2012/13. Whilst the majority of clinical incidents were of diverse types, three common clinical incident types were identified, comprising, notifications reporting patient self harm (n=6), the inadvertent choking of a patient whilst eating (n=3) and notifications of patient collapse following restraint (n=2).

Notifications reporting patient self harm

Three SAC 1 clinical incidents comprised notifications of self harm by community based mental health clients. Recommendations included enhancing inter service communication and documentation, reviewing local clinical practices governing patient assessment, and strengthening existing clinician activities that encourage patient self recognition and disclosure of self harming behaviour. Three clinical incidents reflected self harm by an inpatient. Recommendations to improve access to medical records that span multiple physical locations, reducing variation in the management of a specific mental health condition, and changing processes to improve communication and documentation of risk assessments were identified.

The inadvertent choking of a patient whilst eating

One clinical incident investigation identified clinician uncertainty as to the appropriateness of a menu item for a given modified dietary requirement. Recommendations to address this causative factor included substituting menu options available in the area where the clinical incident occurred, coupled with the provision of education to clinical staff regarding texture modified diets. The investigation of the second clinical incident developed recommendations to address contributory factors related to communication and work environment/scheduling. They comprised changing the existing mode and content of an education package provided to a cohort of employees, and replacing a non standardised dietary requirement alert system with a standardised method across the organisation. The investigation of the third incident did not identify any healthcare contributory factors.

Patient collapse following restraint

The two clinical incidents of this type concerned the restraint of mental health inpatients who were demonstrating aggressive behaviour. Whilst restrained, both patients became unresponsive, were found to be cyanotic and had stopped breathing. Immediate cardiopulmonary resuscitation was commenced with both patients resuscitated.

Contributory factors reflecting policies, procedures and guidelines, and knowledge, skills and competence of healthcare workers were identified. Policies governing restraint processes were under review at each service at the time of each clinical incident. The learnings from each clinical incident, concerning the use of mechanical restraints and the performance of observations on a restrained patient are to be addressed in the revised policy.

The Absconding of any Mental Health Patient

The category 'Absconding of any mental health patient' accounted for 27 SAC 1 clinical incident notifications. Whilst the majority noted no adverse outcome (n=26), the notification of clinical incidents of this type reflects the potential for patient harm. At the time of reporting (30 July 2013), 13 investigation reports had been provided to the PSSU, reflecting patients who had absconded from the emergency department (ED) (n=6) or inpatient setting (n=7).

Nine investigations identified the availability of resources as a causative factor. This included the availability of authorised mental health inpatient beds to convey patients under Form 1 and 3 of the *Mental Health Act 1996* and or the presence of WA Police Officers to transport patients to available authorised beds, necessitating extended management of the patient within the ED setting. Access to staff to provide one on one care was also identified.

Issues with respect to policies, procedures and guidelines, communication and work environment /scheduling, comprised:

- The absence of specific protocols for the review of mental health patients who remain in the ED setting for extended periods.
- A lack of adherence to established patient leave policies, including guidance for patients about leave requirements and expectations.
- Adherence to policies concerning the documentation of observations.
- Limited PSOLIS entries.
- Awareness of patient risks on leaving the hospital limited by communication issues.

Recommendations to address contributory factors included:

- The modification of local processes regarding the periodic review of patients in the ED setting.
- The review of current facilitated discharge plans.
- Policy implementation regarding specialising for mental health patients in non psychiatric clinical areas.
- Ongoing provision of education regarding the application of leave policies and observation requirements.
- Modification to the physical environment of inpatient areas in response to known risks.

Complications of Surgery

Twenty three clinical incidents reflecting the category 'complications of surgery' were notified in 2012/13, with 17 investigation reports received at the time of reporting (30 July 2013). Clinical incident notifications reflected a range of surgical types at differing organisations. Four investigations identified that no healthcare related factors contributed to the clinical incident outcome, with declassification of these incidents to be determined.

Inter discipline communication (including documentation issues) was identified as a contributory factor in seven clinical incidents, with adherence to policies, procedures or guidelines (n=6) and equipment concerns (n=3) or other contributory factors identified. Specifically, policies reflecting; correct patient correct site correct procedure, the management of chest pain in the recovery unit, massive blood loss protocols, and the performing of surgical counts were identified. Recommendations developed included the use of clinical incident information in education strategies to reinforce the adherence to existing policies and in the promotion of effective communication, including handover processes. With regard to identified equipment issues, recommendations comprised limiting or substituting equipment in certain surgical procedures (coupled with the provision of education to affected clinicians).

SAC 1 Case Study

This is a composite case study, using information taken from several SAC 1 clinical incident investigation reports.

Mr N is a 45 year old male who presented to hospital with a two day history of nausea. His medical history included diabetes, kidney disease, high blood pressure and obesity.

Assessment in ED identified poorly controlled blood sugar levels. Mr N was admitted to hospital, with a management plan that included intravenous (IV) fluids and insulin therapy, and hourly monitoring of blood sugar levels.

Mr N was later found unresponsive and a Medical Emergency Team (MET) call was made. Mr N was transferred to a higher acuity area, where he remained for three days before transfer to an inpatient ward.

A review of Mr N's records identified a delay in the administration of IV fluids, a gap in documented observations, and included observations that warranted escalation but had not been actioned.

Recognising and Responding to Clinical Deterioration in the Great Southern Region.

The Western Australian Country Health Service (WACHS) Great Southern Region implemented a quality improvement activity in 2010 at Albany Regional Hospital, when the new "track and trigger" observation chart was introduced to increase compliance with escalation processes for recognising and responding to clinical deterioration in acute healthcare settings. This included:

- The formation of a multi-disciplinary governance group to oversee the rollout and implementation of the deteriorating patient program and ongoing compliance monitoring.
- Education to all clinical staff on the deteriorating patient, including physiology, monitoring, escalation and local case studies.
- Regular monthly auditing of patient charts by clinical staff as a learning opportunity.
- Regular rounding was conducted by Clinical Nurse Managers with staff to review patient charts, and raise any issues of non-compliance in a timely manner.
- Escalation compliance, feedback of audit results to maintain the focus, and general discussion around the deteriorating patient program occurred daily at ward meetings.

Regional sites were included in the program development and governance group membership, but initially were not formally included in the audit and evaluation. The outcome was greater than 80% compliance with appropriate escalation for patients meeting the escalation criteria, based on audit results, clinical incident numbers and patient outcomes.

In the three years since the program started the value of the Deteriorating Patient Committee has proved effective in monitoring and feeding back results and identifying improvements. This program has been extended formally across the region to smaller hospital sites and the education updated and incorporated into the staff Essential Skills Day. Ongoing scrutiny of audit results and actions continues through the governance group, with discussion of the program and the results maintained at daily managers' meetings to keep the message of escalation and patient care as a regional priority.

WA Health has built on the exceptional work undertaken by WACHS in developing the adult observation and response chart to respond to clinical deterioration by:

- Establishing the Recognising and Responding to Clinical Deteriorating State-wide Executive Steering Committee to assist in the strategic governance of the Early Recognition and Response to Clinical Deterioration Strategy.
- Developing the WA Clinical Deterioration Policy.
- Releasing the adult observation and response chart across all HS in May 2012.
- Developing and releasing numerous educational tools and resources to support the adoption of the adult observation and response chart.

Key SAC 1 Clinical Incident Messages

The quantum of SAC 1 clinical incidents notified in 2012/13 increased significantly compared to the previous reporting period, reflecting the first complete period where clinical incident notification was further guided by the CIM Policy (2012).

The occurrence of sentinel event incident types within the Western Australian Public and Private Health System remains a small component of all serious clinical incidents; with inpatient falls and the unexpected death of a mental health patient the most frequently notified clinical incidents in the SAC 1 non sentinel event category.

The SAC ratings were introduced to WA Health in September 2011. Future reporting will contain 12 months of SAC 1 data and therefore will permit a like for like comparison of clinical incident notification types. However the primary rationale for the notification of clinical incidents is to examine why they occurred in order to prevent their re-occurrence.

Whilst the circumstances of each clinical incident are unique, based on the investigation of 70% of SAC 1 clinical incidents notified in 2012/13, the majority of investigations continue to identify causative factors in relation to policies, procedures or guidelines, including adherence to or variation in practice against established guidelines, and issues with regards to written and verbal communication between healthcare workers.

The implementation of recommendations to address identified causative factors - many described in this report – is essential to maximise learning from clinical incidents that cause serious harm and death.



SAC 2 Clinical Incidents

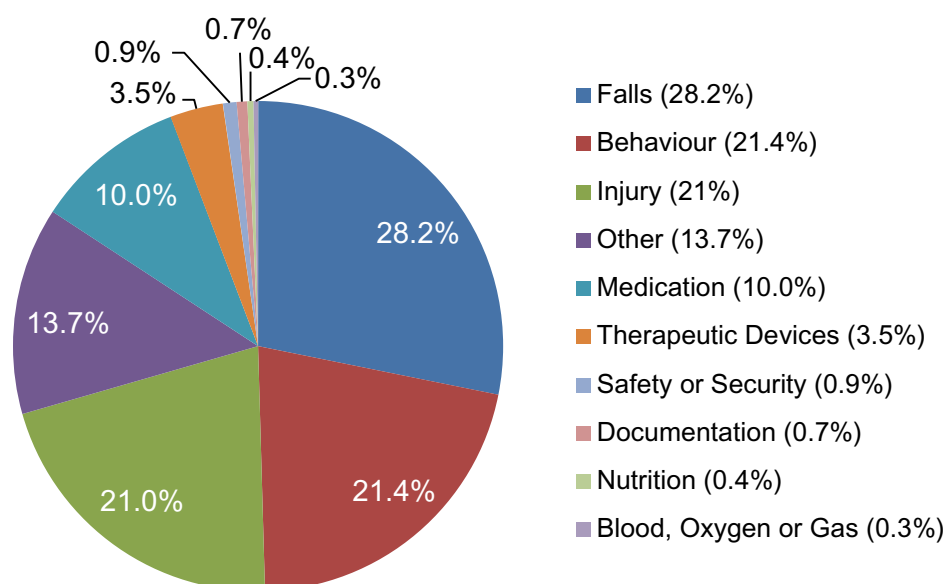
The category **SAC 2** includes all clinical incidents/near misses where moderate harm is/ could be specifically caused by health care rather than the patient's underlying condition or illness. Some examples of SAC 2 cases include clinical incidents that result in increased length of stay, or require additional investigations, interventions or referrals.

In 2012/13, there were 6,693 (40.8%) clinical incidents with a SAC 2 allocation. The PIT for these SAC 2 categories are presented in Figure 11.

Findings revealed that falls (n=1,888; 28.2%) were the most frequently reported SAC 2 clinical incident followed by behaviour clinical incidents (n=1,434; 21.4%) and clinical incidents resulting in injury (n=1,403; 21%).

The top five PIT accounted for 94.3% (n=6,316) of clinical incidents in this SAC 2 category. Falls and behaviour clinical incidents accounted for 49.6% (n=3,322) of all SAC 2 clinical incidents in 2012/13.

Figure 11: **Percentage of Principal Incident Types by SAC 2 Category (2012/13)**



The top five SAC 2 clinical incidents were reviewed to identify the nature of the clinical incident. For each of the five PIT, the three most frequently reported responses are shown in Table 6. Results showed that physical abuse, aggression or assault (n=806; 12%) was the most frequent category reported for behaviour incidents and overall.

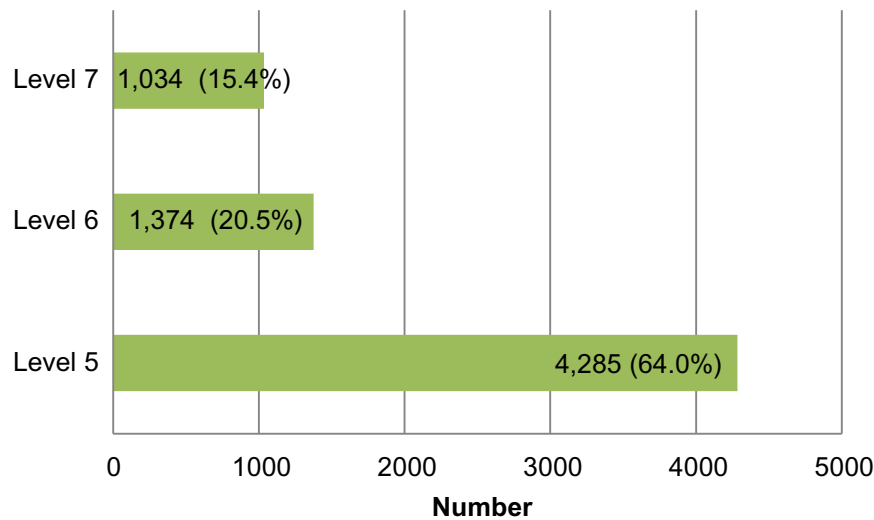
Table 6: **Frequency and Percentage of the Top Five PIT by Nature of SAC 2 Clinical Incidents (2012/13)**

PIT	Nature of Clinical Incident	(n)	%
Behaviour	Physical abuse, aggression or assault	806	12.0
	Absconding	232	3.5
	Intended self harm	120	1.8
Subtotal		1,158	17.3
Falls	Transferring from bed, chair, toilet	514	7.7
	Falls from same level	488	7.3
	Falls of unknown origin	296	4.4
Subtotal		1,298	19.4
Injury	Pressure injuries	380	5.7
	Unintended injury during a procedure or treatment	352	5.3
	Result of an impact or collision	249	3.7
Subtotal		981	14.7
Other	No, wrong or delayed procedure, treatment or assessment	594	8.9
	Other clinical incident	104	1.6
	No, wrong or delayed admission, inappropriate bed or ward	62	0.9
Subtotal		760	11.4
Medication	Overdose	206	3.1
	Omission	135	2.0
	Other medications involved	75	1.1
Subtotal		416	6.2
Total		4,613	69.0

Outcome levels¹³ for SAC 2 clinical incidents are assigned on completion of a clinical incident investigation. Figure 12 shows the most frequent outcome level assigned for a SAC 2 clinical incident was Level 5 (n= 4,285; 64%), referring to moderate harm having occurred.

¹³ Outcome levels range from level 1 to level 8. Levels 1-3 refers to no harm having occurred, level 4 refers to minor harm, level 5-6 refers to moderate harm, level 7 refers to significant harm and level 8 refers to severe harm having occurred.

Figure 12: **Frequency and Percentage of Outcome Levels for SAC 2 Clinical Incidents (2012/13)**



SAC 2 Clinical Incident Focus

This section will focus specifically on SAC 2 falls and behaviour clinical incidents as 49.6% (n=3,322) of all SAC 2 clinical incidents were captured in these two categories. The majority of SAC 2 falls (n=1,067) and behaviour (n=764) clinical incidents involved males (see Table 7). The mean age of patients involved in falls clinical incidents was 72 years compared to 38 years for patients involved in a behaviour clinical incident.

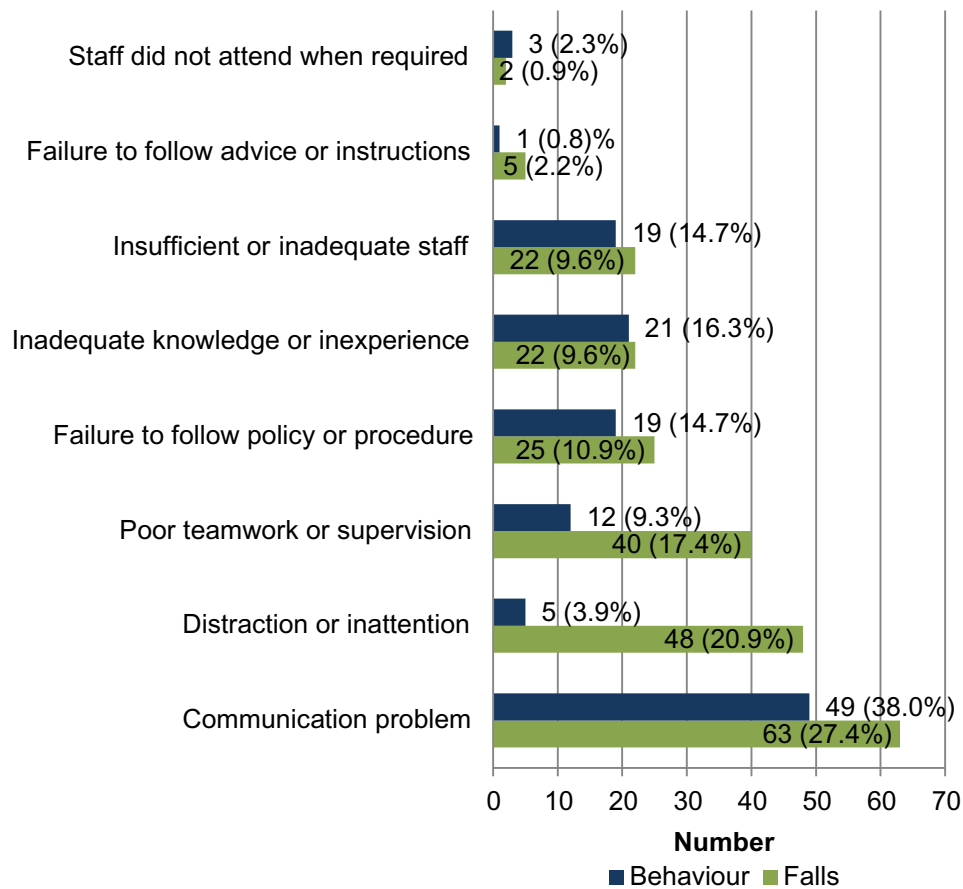
Table 7: **Demographic Data for SAC 2 Falls and Behaviour Clinical Incidents (2012/13)**

	Falls*	%	Behaviour*	%
Male	1,067	58	764	55.0
Female	776	42	624	45.0
Total	1,843	100	1,388	100.0
Age Range	0-102 Yrs	SD 18 Yrs	0-101 Yrs	SD 20 Yrs
Mean Age	72 Yrs		38 Yrs	

*Fall clinical incidents missing data n=31; Behaviour clinical incidents missing data n=46.

Analysis of staff contributory factors showed that only 10% (n=188) of falls and 7.1% (n=102) of behaviour clinical incidents identified staff issues as having contributed to the incident occurring. Communication problems were the most frequently reported staff contributory factor associated with both falls and behaviour clinical incidents (see Figure 13).

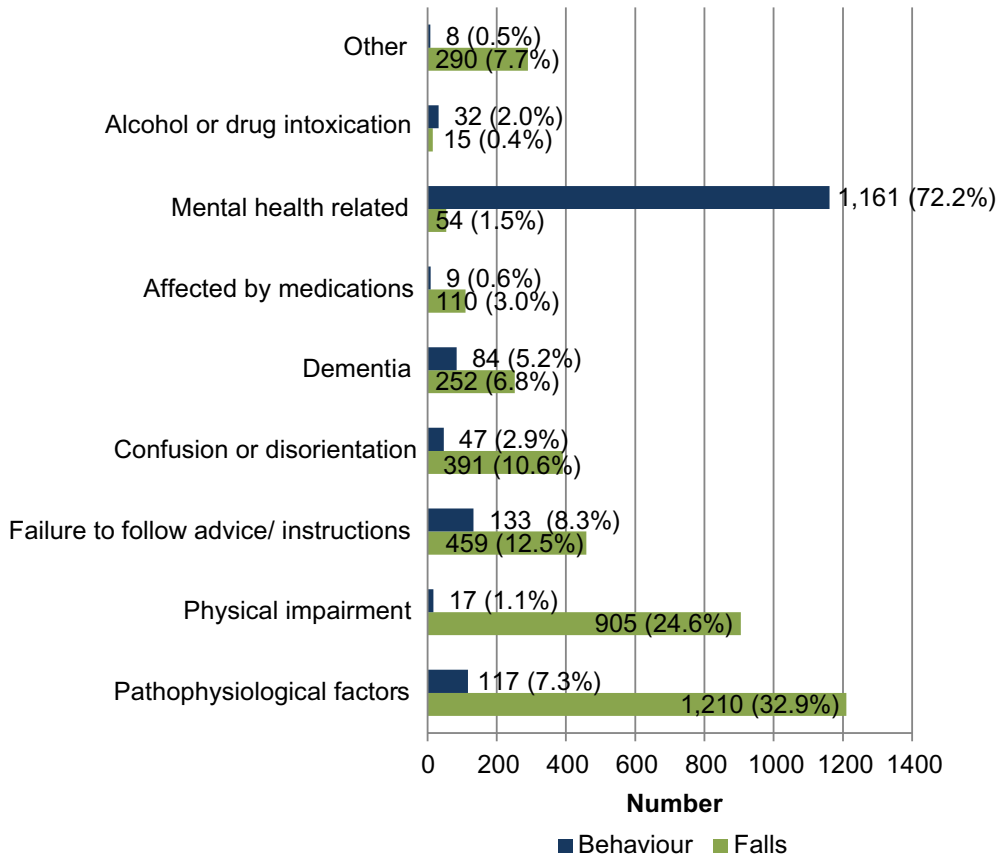
Figure 13: Frequency and Percentage of Staff Contributory Factors* to SAC 2 Falls and Behaviour Clinical Incidents (2012/13)



* Please note that more than one contributory factor can be chosen therefore multiple responses were captured for both falls and behaviour categories.

Patient factors were reported as having contributed to 91.3% (n=1,724) of falls and 93.2% (n=1,336) of behaviour incidents. Pathophysiological and physical impairment factors accounted for the majority of contributory factors that were identified in a falls clinical incident (n= 2,115; 57.4%). While mental health problems (n=1,161; 72.2%) were cited as the main patient contributory factor associated with behaviour clinical incidents (see Figure 14).

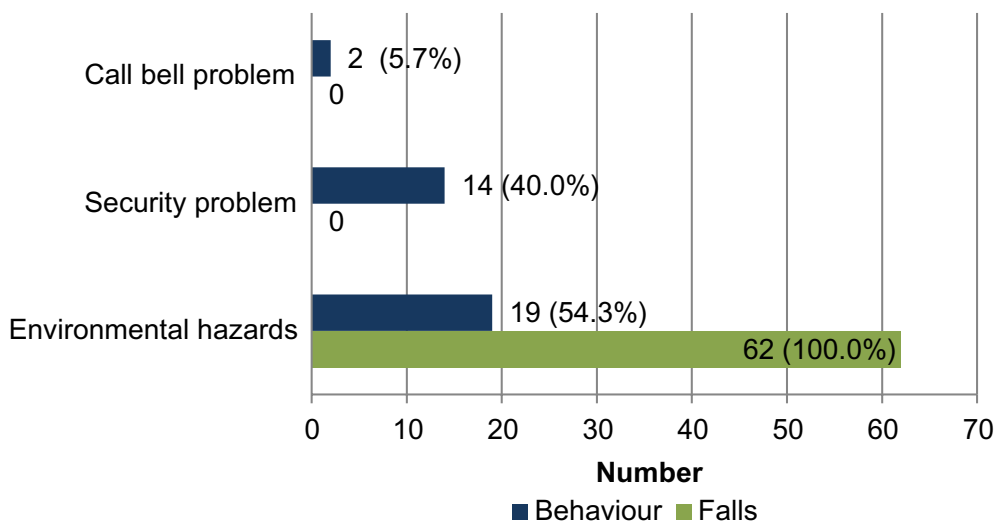
Figure 14: Frequency and Percentage of Patient Contributory Factors* to SAC 2 Falls and Behaviour Clinical Incidents (2012/13)



* Please note that more than one contributory factor can be chosen therefore multiple responses were captured for both falls and behaviour categories.

For SAC 2 falls and behaviour clinical incidents, system contributory factors were cited in less than 2.9% (n=97) of clinical incidents. For both falls and behaviour clinical incidents environmental hazards were the most frequently cited contributory factor (see Figure 15).

Figure 15: Frequency and Percentage of System Contributory Factors to SAC 2 Falls and Behaviour Clinical Incidents (2012/13)



SAC 2 Case Study

Ms J is a 49 year old patient with a history of severe vaginal bleeding who was admitted to hospital for a total abdominal hysterectomy.

In preparation for the operation, Ms J had an intravenous line (IV) inserted for her pain and fluid management.

Ms J's post operative recovery was going well with her pain managed using a patient controlled analgesic pump.

On day two of admission, Ms J complained of fever and pain and soreness at her IV site. Upon removing the dressing, it was revealed that the IV site was inflamed and infected.

This resulted in the IV being removed and resited and Ms J placed on a course of antibiotics to address the systemic infection.

The Anaesthetics Department at King Edward Memorial Hospital (KEMH) reviewed delivery systems for epidural analgesia when the "Go-Medical" pump system was no longer available due to manufacturing issues. The CADD Solis pump was selected, which is an electronic pump system that allows for continuous infusion of an epidural solution as well as calculating additional bolus doses, within the maximum allowable dose range. On implementation of the new CADD pump delivery system, midwives at ward level prepared a Fentanyl & Bupivacaine solution by withdrawing solutions from sterile ampoules and filling the CADD cassette.

Flagging of Safety Risk by Pharmacy: The Pharmacy Department identified that this delivery system was not optimal, as the preparation of the CADD cassette required 9 to 10 aseptic manipulations. Each manipulation has an inherent risk of microbiological contamination thus posing an infection risk to the patient. There was also a significant increase in nursing time required to prepare each cassette.

Outcome: The Pharmacy Department analysed all delivery device options available. It was concluded that the safest delivery form for the patient was sterile prefilled mini bags containing Fentanyl & Bupivacaine. These are custom manufactured bags that require the bags to be spiked once, with no other aseptic manipulations to be performed by clinical staff.

Conclusion: The potential risks with this new drug delivery system were identified early, before there was an adverse incident. The review, investigation and subsequent change in the administration of the epidural infusion system at KEMH has resulted in improved patient safety, reduced time wasted by midwives, significant cost savings, improved accountability and increased staff satisfaction.

Key SAC 2 Clinical Incident Messages

Clinical incidents which have resulted in moderate harm to the patient accounted for nearly 41% (n=6,693) of all clinical incidents in 2012/13. Investigations of SAC 2 clinical incidents are reportable at a local level with each clinical incident requiring that at least a clinical review be performed, and contributory factors addressed.

Clinical incidents involving falls and behaviour issues continue to be the most frequently reported SAC 2 clinical incident types. Falls prevention is a major priority not only for WA Health but also at a national level, as demonstrated by its inclusion in the National Safety and Quality Health Service Standards (2012).¹⁴

Behavioural incidents while not a national patient safety priority, are also frequently reported by other States such as South Australia,¹⁵ who in 2011/12 cited abuse, violent, disruptive or self harming behaviour as the fourth most common type of clinical incident notified (n=2,685; 8.2%). While Queensland Health,¹⁶ has also reported that behaviour incidents have been consistently cited as one of the 10 most frequently reported clinical incidents since 2005.

If the prevalence of these types of clinical incidents are to be reduced, the continued commitment of WA Health staff is required to undertake projects targeting falls whilst transferring, physical aggression, pressure injuries or injury whilst undertaking a procedure or treatment.

Furthermore, the pro active approach to patient safety as demonstrated by the KEMH quality improvement project, to prevent anaesthetic incidents, is an excellent example in mistake proofing health care delivery and is one that is applauded. This type of patient safety initiative needs to become an inherent part of health care delivery for every person working in health care and especially by those staff working in direct patient care areas.

¹⁴ Australian Commission on Safety and Quality in Health Care (September 2012), National Safety and Quality Health Service Standards, ACSQHC, Sydney.

¹⁵ South Australian Patient Safety Report 2011/12.

¹⁶ Patient Safety: From Learning to Action 2012. Fifth Queensland Health Report on Clinical Incidents and Sentinel Events in the Queensland Public Health System 2009/10 and 2010/11.



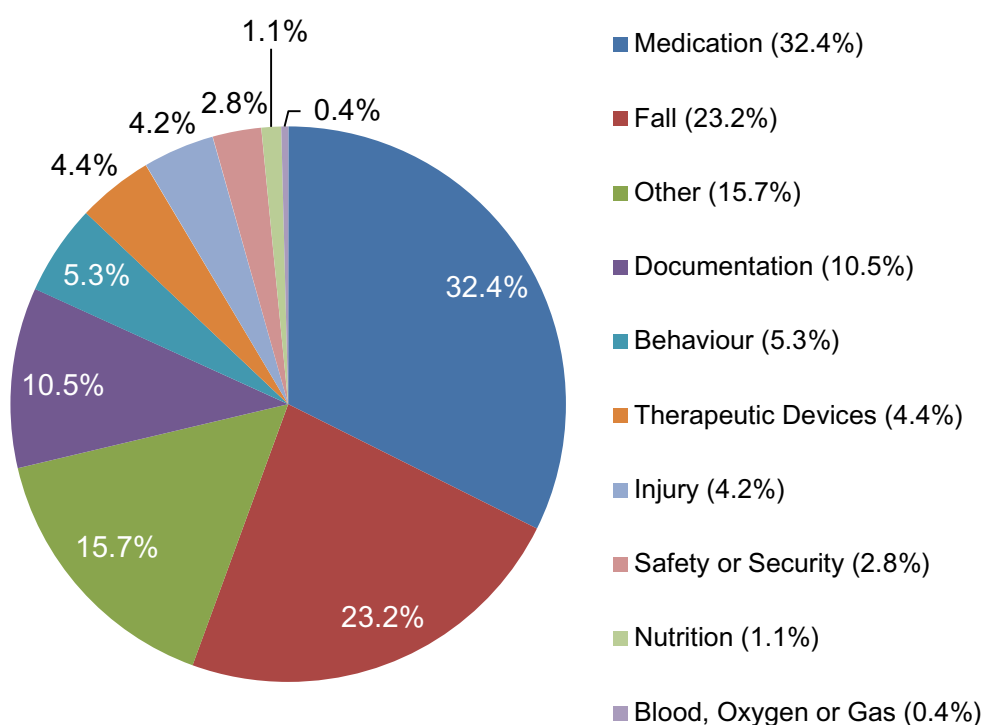
SAC 3 Clinical Incidents

There were 9,231 clinical incidents allocated to the SAC 3 category referring to clinical incidents that resulted in minimal or no harm that is/could be specifically caused by health care delivery rather than patient’s underlying condition or illness.

The PIT for these SAC 3 categories are presented in Figure 16. Findings revealed that medication clinical incidents (n=2,988; 32.4%) and falls (n=2,141; 23.2%) were the most frequently reported SAC 3 clinical incident types in 2012/13.

Eighty seven percent (n=8,034) of all SAC 3 clinical incidents were captured in the top five PIT categories.

Figure 16: **Percentage of PIT for SAC 3 Clinical Incidents (2012/13)**



The top five SAC 3 PIT were reviewed to identify the nature of the clinical incident and accounted for 62.5% of clinical incidents (n=5,825). For each of the top five SAC 3 categories, the three most frequently reported responses are shown in Table 8. No, wrong or delayed procedure, treatment or assessment showed the highest frequency with regard to the nature of the clinical incident (n=1,037). While medication omissions (n=828) followed by falls from a bed, cot or toilet (n=689) were the next most frequently mentioned clinical incident types.

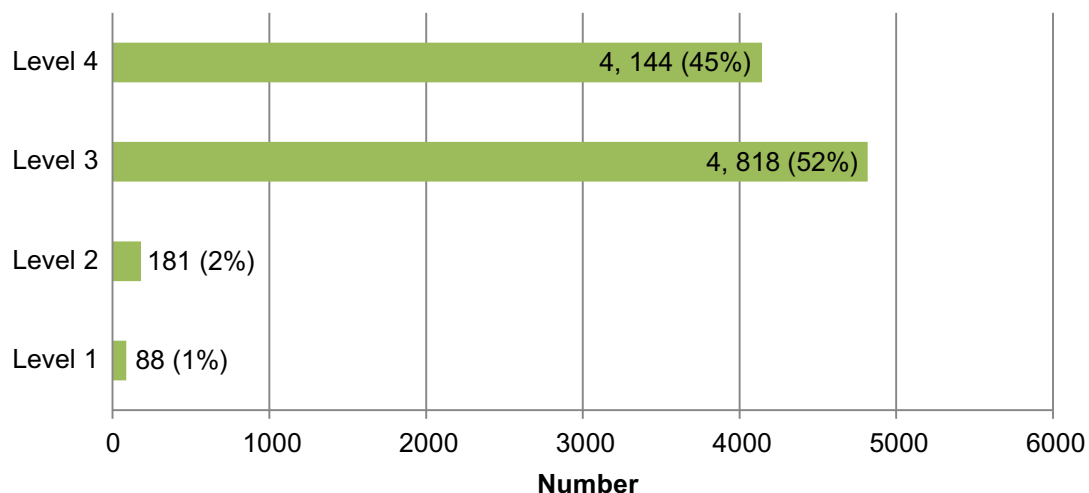
Table 8: **Frequency and Percentage of the Top Five PIT by Nature of SAC 3 Clinical Incident (2012/13)**

SAC 3 Type	Nature of Clinical Incident	(n)	(%)
Medication	Omission	828	9.0
	Overdose	529	5.7
	Wrong medication, additive or fluid	495	5.4
Subtotal		1,852	20.1
Falls	Falls from bed, cot or toilet	689	6.7
	Falls on the same level	533	5.8
	Falls of unknown origin	344	3.7
Subtotal		1,566	16.2
Other	No, wrong or delayed procedure, treatment or assessment	1,037	11.2
	No or delayed admission, inappropriate bed or ward	143	1.5
	Other	135	1.5
Subtotal		1,315	14.2
Documentation	Documentation error or omission	376	4.1
	Patient ID incorrect or absent	292	3.2
	Documentation unavailable or lost	81	0.9
Subtotal		749	8.2
Behaviour	Physical abuse, aggression or assault	202	2.2
	Absconding	99	1.1
	Inappropriate behaviour	42	0.5
Subtotal		343	3.8
Total		5,825	62.5

Outcome levels¹⁷ for SAC 3 clinical incidents are shown in Figure 17. Fifty two percent of SAC 3 clinical incidents were coded with a Level 3 outcome (n=4,818) which referred to no harm. A further 45% (n=4,144) of SAC 3 clinical incidents reported an outcome of level 4 which refers to minor harm having occurred.

¹⁷ Outcome levels range from level 1 to level 8. Levels 1-3 refers to no harm, level 4 refers to minor harm, level 5-6 refers to moderate harm, level 7 refers to significant harm and level 8 refers to severe harm having occurred.

Figure 17: **Frequency and Percentage of Outcome Levels for SAC 3 Clinical Incidents (2012/13)**



SAC 3 Clinical Incident Focus

This section focuses specifically on SAC 3 medication (n=2,998) and falls (n=2,141) clinical incidents which accounted for 56% (n=5,139) of all SAC 3 clinical incidents. Results showed that more females (n=1,430; 52%) were involved in a medication clinical incident compared to males, while a higher proportion of males were involved in falls incidents (n=1,118; 53%; see Table 9). Patients involved in a fall clinical incident were considerably older (mean age 70 years) than those involved in a medication clinical incident (mean age 55 years).

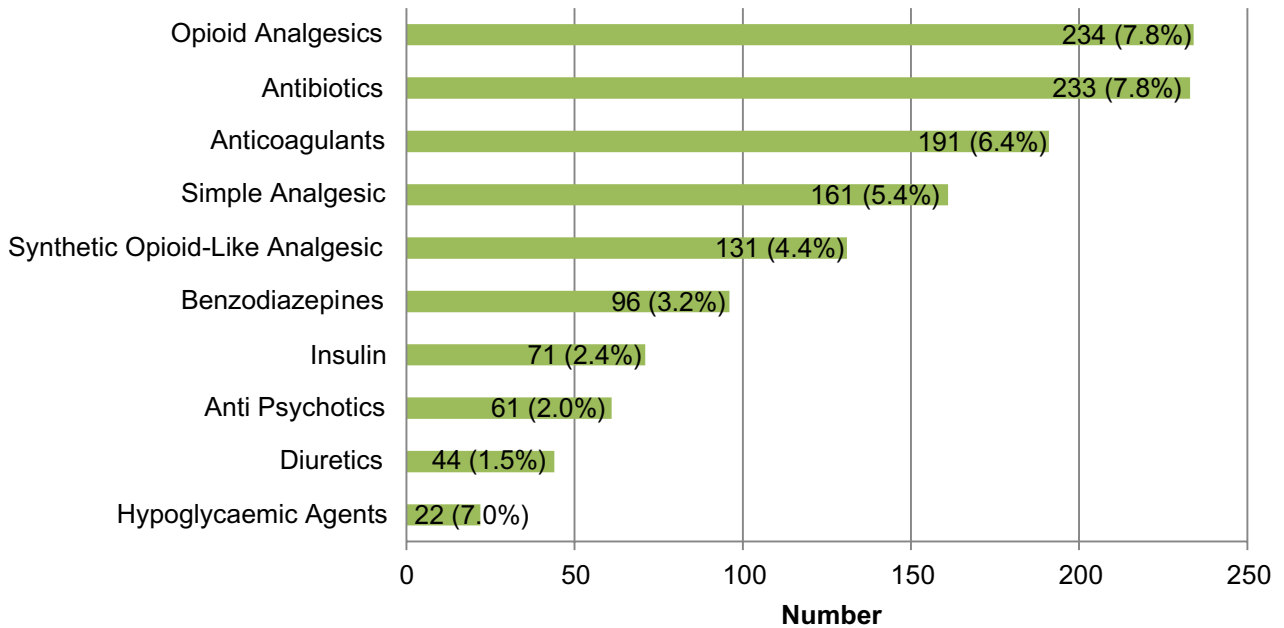
Table 9: **Demographic Data for SAC 3 Medication and Falls Clinical Incidents (2012/13)**

	Medication*	%	Falls*	%
Male	1,324	48	1,118	53
Female	1,430	52	972	47
Total	2,754	100	2,090	100
Age Range	0-106 Yrs	SD 27 Yrs	1-101 Yrs	SD 20 Yrs
Mean Age	55 Yrs		70 Yrs	

* Medication clinical incidents missing gender data n=234; Fall clinical incidents missing gender data n=51.

Analgesia, antibiotics and anticoagulant medication were cited in 41.6% (n=1,244) of all SAC 3 medication clinical incidents (see Figure 18).

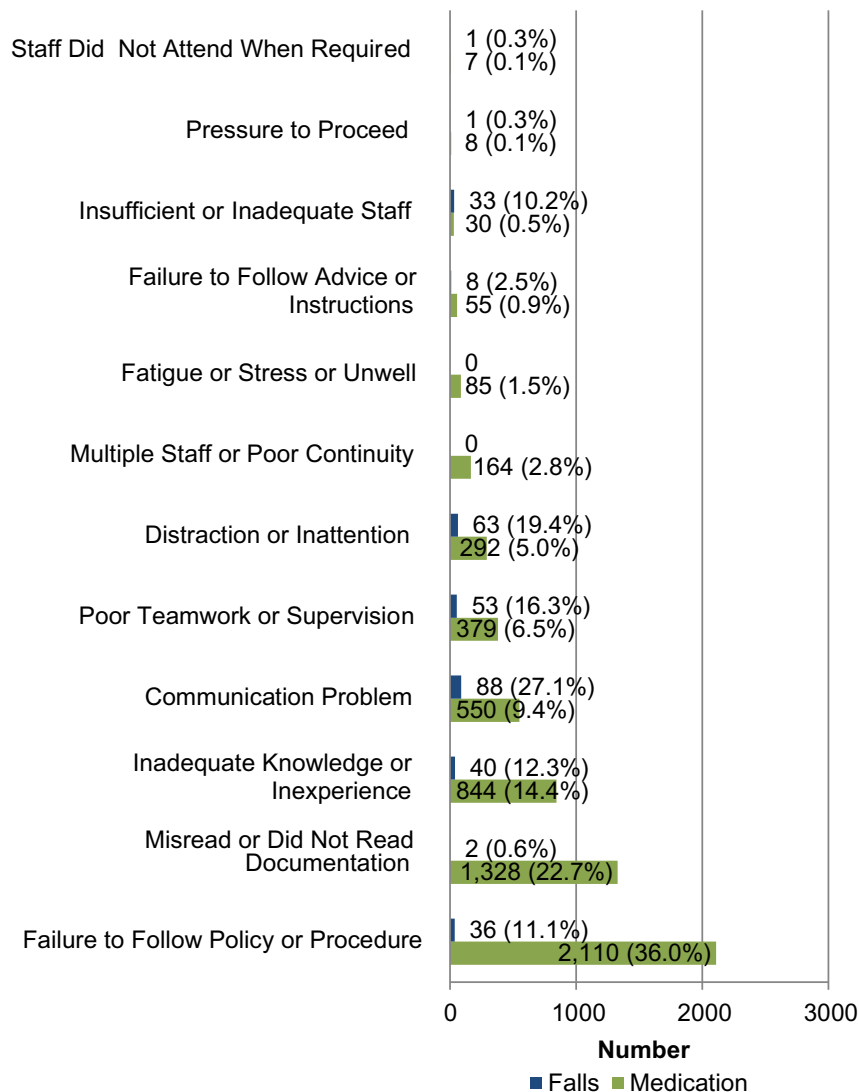
Figure 18: **Ten Most Frequently Cited Medications Involved in SAC 3 Medication Clinical Incidents (2012/13)**



When it came to SAC 3 medication clinical incidents, staffing factors were the most frequently reported contributory factor compared to patient or system contributory factors.

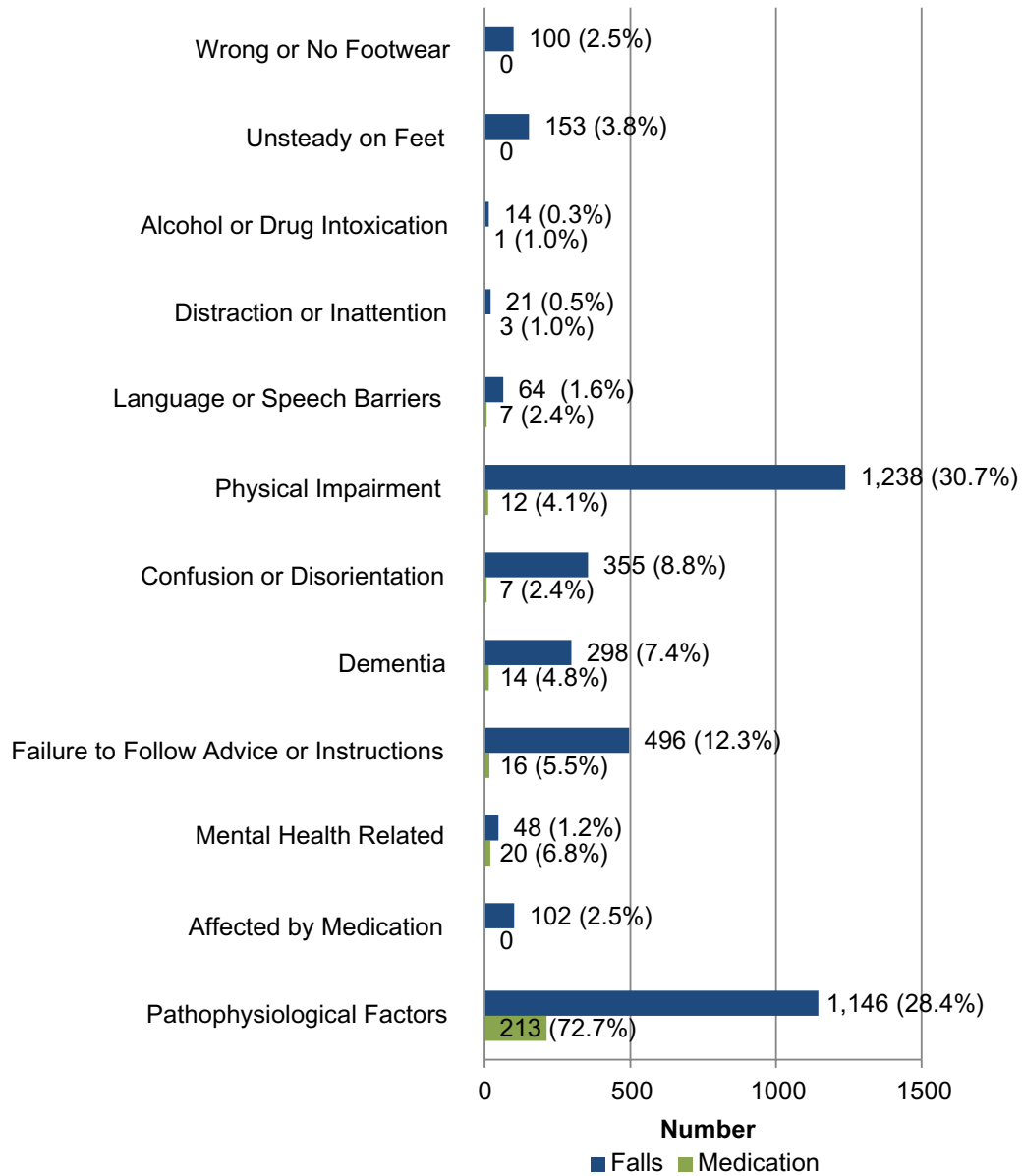
Figure 19 shows the main staff contributory factor for medication clinical incidents was failure to follow policy or procedure (n=2,110; 36%) with communication problems (n=88; 27.1%) cited as the main contributory factor for fall clinical incidents.

Figure 19: **Frequency and Percentage of Staff Contributory Factors to SAC 3 Medication and Fall Clinical Incidents (2012/13)**



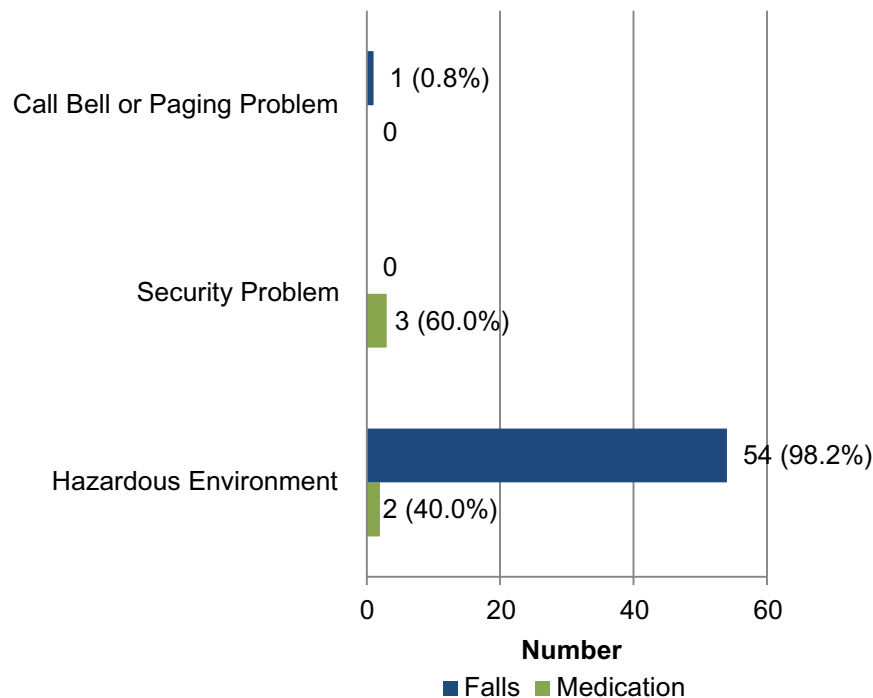
When it came to SAC 3 fall clinical incidents, patient factors were the most frequently reported reasons compared to other contributory factors. Specifically, physical impairment (n=1,238; 30.7%) or pathophysiological factors (n=1,146; 28.4%) were cited as the main contributory factors for fall clinical incidents (see Figure 20). While pathophysiological factors (n=213; 72.7%) contributed to the majority of medication clinical incidents.

Figure 20: **Frequency and Percentage of Patient Contributory Factors to SAC 3 Falls and Medication Clinical Incidents (2012/13)**



Only 60 system factors in total were cited as a contributory factor for either falls or medication clinical incidents in 2012/13 (see Figure 21). Environmental hazards (n=54; 98.2%) were the main system contributory factors for falls while security problems (n=3; 60%) were cited for medication clinical incidents.

Figure 21: **Frequency and Percentage of System Contributory Factors to SAC 3 Falls and Medication Clinical Incidents (2012/13)**



SAC 3 Case Study

Pressure Injury Prevention and Management (PIP&M) Strategies at SCGH during 2012/13

Mr O is 75 year old man who had been admitted to hospital after a severe asthma attack.

Mr O also had a history of diabetes, congestive cardiac failure and had a right below knee amputation.

Mr O's respiratory condition resulted in an admission to ICU where he stayed for three days before being transferred to the ward.

Whilst undertaking a skin assessment on the ward it was observed that Mr O had developed a stage 2 pressure injury (PI) causing partial thickness skin loss to his heel.

The PI was dressed and pressure relieving devices placed in situ, along with a repositioning regimen.

In addition, Mr O's nutrition status was assessed and his diet modified to assist wound recovery.

Sir Charles Gairdner Hospital (SCGH) employs a multi disciplinary approach to pressure injury (PI) following the WoundsWest Report (2011) and the release of National Standards Number Eight Preventing and Managing Pressure Injuries¹⁸ in 2013.

¹⁸ Australian Commission on Safety and Quality in Health Care (September 2012), National Safety and Quality Health Service Standards, ACSQHC, Sydney.

Strategies to Reduce PI Prevalence include:

- SCGH has patient safety teams in 22 clinical areas who conduct local audits relating to PIP&M. The audit results are managed by the clinical nurse specialist, with data brought to the monthly Wound Management Committee meeting and then relayed to the hospital executive.
- Regular PI point prevalence surveys.
- A PI support surfaces poster identifying the variety of support surfaces available and the corresponding patient population was developed and launched based on findings from a SCGH clinical audit.
- PI education is part of induction sessions for nursing, occupational therapy and patient support staff, as well as the nursing graduate program. Twice yearly PI education is provided to medical interns and regular PI education sessions provided by the Centre for Nursing Education.
- With the WA State-wide PI Forum, SCGH hosted the “Stop Pressure Injury” Awareness Education Program at SCGH in 2012, in line with the Global Awareness Campaign to prevent PI. With a consumer focus, a relative of a PI patient, had an article published in the local ‘The Post’ newspaper. The Program was attended by 220 staff and 29 sites via video conference.
- PI were further promoted with a display in the main corridor of SCGH ‘Watling Walk’ for one week in November (2012), with the multi-disciplinary team members present each day to discuss any PI questions and issues. Lanyards and posters highlighting the new additional PI staging were also distributed to staff.
- A PI booklet and pamphlet for patients/carers, was developed and approved by the Consumer Advisory Council. The DoH was consulted to ensure the information for patients was correct and meaningful.

Key SAC 3 Clinical Incident Messages

Clinical incidents resulting in no or minimal harm (SAC 3) accounted for the greatest proportion (n=9,231; 56.3%) of clinical incidents in 2012/13. Medication clinical incidents and falls were reported with the highest sub category frequencies. Despite the fortunate outcome of no or minimal harm to the patient, medication clinical incidents and falls prevention remain priority areas, not only at a State level, but also nationally.

This is evidenced in the release of the National Safety and Quality Health Service Standards (2012)¹⁹ by the ACSQHC with medication safety and falls prevention identified as two of its ten priority areas. Specifically, the medication safety standard aims to improve the quality of medication provision by providing criteria that will enable medication safety to be achieved. These medication safety criteria address governance and systems, documentation, medication management, continuity processes and communication.

Similarly, falls prevention and harm from falls was also identified as a National Safety and Quality Health Service Standards priority. Criteria to achieve a reduction in the incidence of falls and harm from falls include enhancing governance structures and systems that are in place to prevent/minimise falls from occurring. Other criteria include enhancing falls risk assessment, strategies to prevent falls and improving communication.

With both medication errors and falls constantly identified as significant patient safety issues it is essential that HS continue to implement and evaluate evidence based strategies and resources that improve medication safety and falls prevention.

¹⁹ Australian Commission on Safety and Quality in Health Care (September 2012), National Safety and Quality Health Service Standards, ACSQHC, Sydney.



Quality of Care

The delivery of high quality health care to patients commences at the bedside, with professional nursing, medical, allied health and support staff, who strive each day to achieve this goal. The notification of clinical incidents that have resulted/nearly resulted in harm to the patient is another strategy supporting the provision of high quality care. It is through the notification and investigation of clinical incidents that improvements in health care delivery can be achieved. However, clinical incident management is only one component in the delivery of high quality health care, with WA Health using many different methods to identify, investigate and improve clinical and service outcomes.

Pivotal to the delivery of high quality health care is the use of routine reporting mechanisms that are essential not only for the strategic planning of services and for operational decision making but also to ensure that continuous performance improvements are being measured and achieved. Currently, WA Health uses the Performance Management Framework (PMF)²⁰ to report on quality of service delivery and population outcomes, which address financial, workforce, activity, access, quality and safety domains. A service agreement is signed by both the HS providing care and the DOH who is the purchaser of those services, and involves regular reporting of service performance against an agreed set of key performance indicators (KPI). Examples of KPI include emergency departments attendances seen within the recommended national triage times, theatre activity or unplanned readmission to hospital. Each KPI is routinely assessed against an agreed target and thresholds with unacceptable performance targets requiring intervention to bring the performance back on track.

Complementing the PMF is the Quality of Care Framework (QoCF) 2013/14²¹, which unlike the PMF, focuses on individual health outcomes. The QoCF was developed by the Office of Safety and Quality in Healthcare (OSQH) and focuses on two domains:

1. Helping people to recover from episodes of ill health or injury.
2. Treating and caring for people in a safe environment and protecting them from avoidable harm.

Under each QoCF domain there is a series of clinical indicators, which are used to measure appropriate patient care such as complications of care, in hospital mortality, length of stay, readmission and complications of surgery (see Table 10). The continued focus in assessing individual outcomes has resulted in the OSQH collaborating with the Epidemiology Branch and the PSSU, to adopt the Variable Life Adjusted Display (VLAD) methodology for use by WA Health. The VLAD is a statistical methodology used to monitor patient outcomes from a range of clinical indicators to identify and analyse unexpected clinical trends. This data is used for comparative purposes against State averages to identify patterns that may indicate if patient outcomes at a particular hospital/health service are improving or if there are problems that require further investigation. The move to incorporate the use of VLADs within WA Health is another significant step in ensuring that health care delivery is constantly being monitored, and where needed improved so that WA patients continue to receive high quality and safe health care.

²⁰ Activity Based Funding and Management Program. Annual Performance Management Framework 2013/2014 Report. (2013).

²¹ Quality of Care Framework 2013/14. Monitoring Safety and Quality in Hospitals in WA Health (2013).

Table 10: **WA Health Quality of Care Framework 2013/14**

Domain 1: Helping people to recover from episodes of ill health or injury	Domain 2: Treating and caring for people in a safe environment and protecting them from avoidable harm
Tier 1 <ul style="list-style-type: none"> ■ In-hospital mortality rates for acute myocardial infarction (AMI), Stroke, fractured neck of femur (FNOF), pneumonia (PMF EQ8) 	Tier 1 <ul style="list-style-type: none"> ■ Hospital Standardised Mortality Ratio (HSMR) (PMF EQ5)
Tier 2 Appropriate Care <ul style="list-style-type: none"> ■ Model of care premium payment (Stroke, AMI & FNOF) ■ Unplanned readmissions (PMF EQ9) (Hip Replacement, Knee Replacement, Hysterectomy, Prostatectomy, Cataract Surgery, Adult Appendicectomy, Paediatric Tonsillectomy and Adenoidectomy) 	Tier 2 Complications of Care <ul style="list-style-type: none"> ■ Health care acquired infection (SAB & CDI)* (PMF EQ3 & EQ11) ■ Complications of surgery (FNOF, Hip Replacement, Knee Replacement, Prostatectomy, Abdominal Hysterectomy, Vaginal Hysterectomy) ■ Complications of medical care (AMI & Stroke)
Tier 3 <ul style="list-style-type: none"> ■ VLAD in-hospital mortality (VLADCM)** ■ VLAD long stay (VLADCM) ■ VLAD complications of surgery (VLADCM) ■ VLAD readmission (VLADCM) for AMI, Stoke, FNOF 	Tier 3 <ul style="list-style-type: none"> ■ SAC 1 Clinical Incidents (CIM Report, PSSU) ■ SAC 2 Clinical Incidents (CIM Report, PSSU) ■ SAC 3 Clinical Incidents (CIM Report, PSSU) ■ Health Service Complaints ■ CHADx data sets

* SAB refers to Staphylococcus Aureus Bloodstream; CDI refers to Clostridium Difficile Infection.

** VLADCM refers to the software system.

Both the PMF and the QoCF offer a state overview of how well WA Health is performing and provide accountability measures between the HS and the DOH. Additionally, both frameworks are instrumental in facilitating change by highlighting inequities within the health care delivery.

Better understanding of hospital acquired complications or injuries experienced by patients is imperative if improvements in health care delivery are to be achieved. Specifically, HS need to enhance their scrutiny of the health care data that they routinely collect, to address the incidence of health care acquired complications or injuries.

At a national level, the ACSQHC, via researchers at the Australian Centre for Economic Research on Health commissioned the development of the Classification of Hospital Acquired Diagnoses (CHADX).²² The CHADx system requires the capturing of a “Condition Present on Admission (CPoA)” variable, to identify if the condition was hospital

²² Utz, M., Johnston, T., Halech, R. A Review of the Classification of Hospital Acquired Diagnoses. Technical Report 12. Queensland Health 2012.

acquired. National collection of this CPoA variable commenced in 2008. In 2012, the ACSQHC released the CHADx version 4.2, which comprised of 17 major classes and 145 subclasses of valid hospital acquired diagnosis codes. The purpose of CHADx is to enable the monitoring of hospital acquired diagnoses from routine administrative inpatient data sources such as the HMDC, to assist clinicians in improving the care that is delivered to patients.

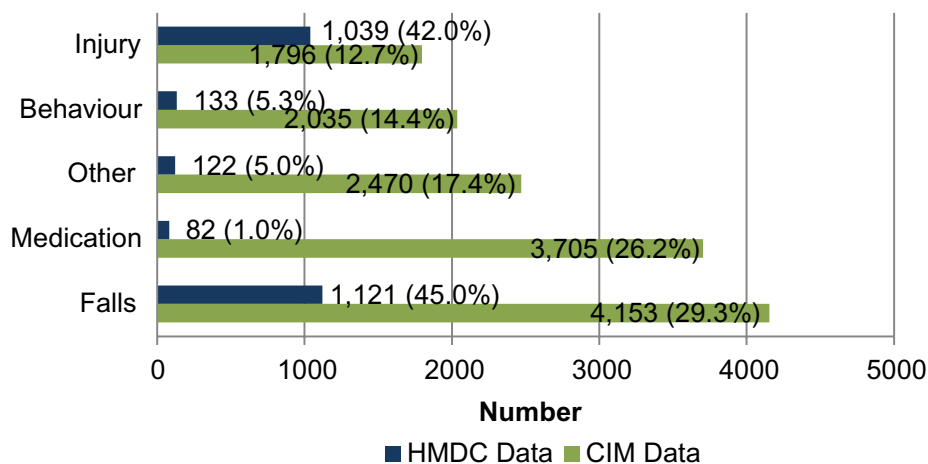
A review of 2010-11 CHADx data by Utz, Johnston and Halech (2012), showed that 9% of all hospital admissions within Queensland included at least one hospital acquired illness or injury. There appears to be virtually no Australian published reports which utilise hospital acquired diagnosis to monitor harm to patients. Specifically, Safety and Quality or Clinical Incident Management Department websites were searched to obtain published reports which include coded hospital acquired incident data but apart from the data reported by Utz, Johnston and Halech (2012), no reports were found.

Western Australian Health utilises the HMDC, which has mandatory and statutory reporting requirements, to capture inpatient data from all public and private patients within Western Australia. In 2008, the HMDC commenced collecting data on whether the onset of a diagnosed condition occurred during the inpatient episode. This condition onset flag (COF) code, allows analysis of those health care conditions/complications that have happened during the inpatient stay.

The COF code enables greater exploration of hospital acquired conditions/complications but is limited in that it does not indicate whether a condition/complication was considered to be preventable. However, the utilisation of the COF code is the first step in establishing and understanding the prevalence of health care conditions that could be better managed or even prevented.

The top five CIM data categories were compared to COF codes obtained from the HMDC. Findings highlighted reporting discrepancies between the two datasets. Substantially less HMDC incidents were coded as having been a diagnosed condition which commenced during the inpatient episode compared to CIM incidents (see Figure 22).

Figure 22: **Frequency and Percentage of SAC Clinical Incidents Compared to HMDC COF Code Data (2012/13)***

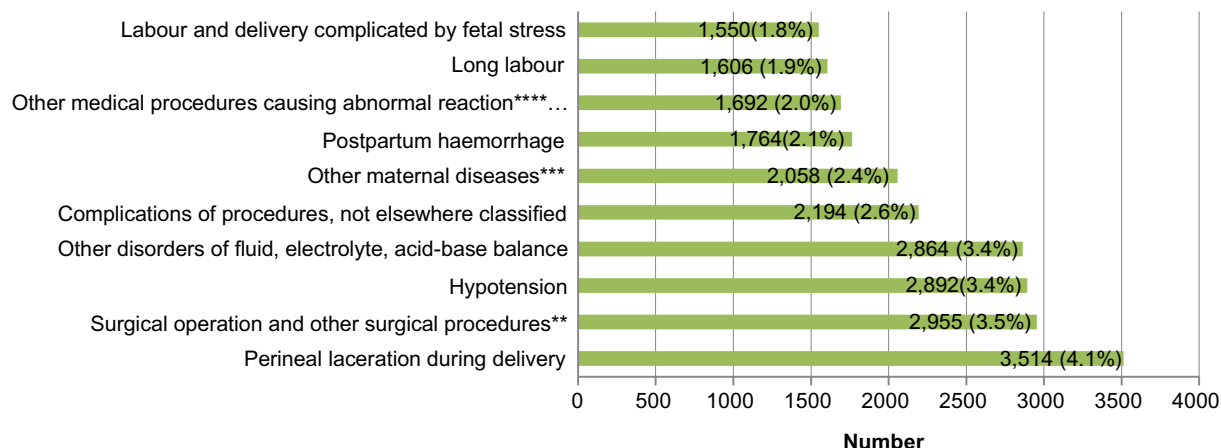


* Please note only SAC 1 clinical incidents that have occurred within a public hospital have been included when comparing data from CIMS and HMDC.

Further examination of HMDC data identified the top ten WA Hospital COF codes which accounted for 27% (n=23,089) of total COF data. Perineal laceration during delivery showed the highest frequency with 3,514 (4.1%) cases identified (see Figure 23). The next most frequently identified COF code was surgical operation and other surgical procedures as the cause of abnormal patient reaction, or of later complication without mention of misadventure at the time of the procedure (n=2,955; 3.5%).

Obstetric conditions were over represented with four of the ten most frequently reported COF codes related to perineal lacerations during delivery, post partum haemorrhage, long labour and labour/delivery complicated by fetal distress (see Figure 23).

Figure 23: Frequency and Percentage of Top Ten HMDC COF Code Data (2012/13)*



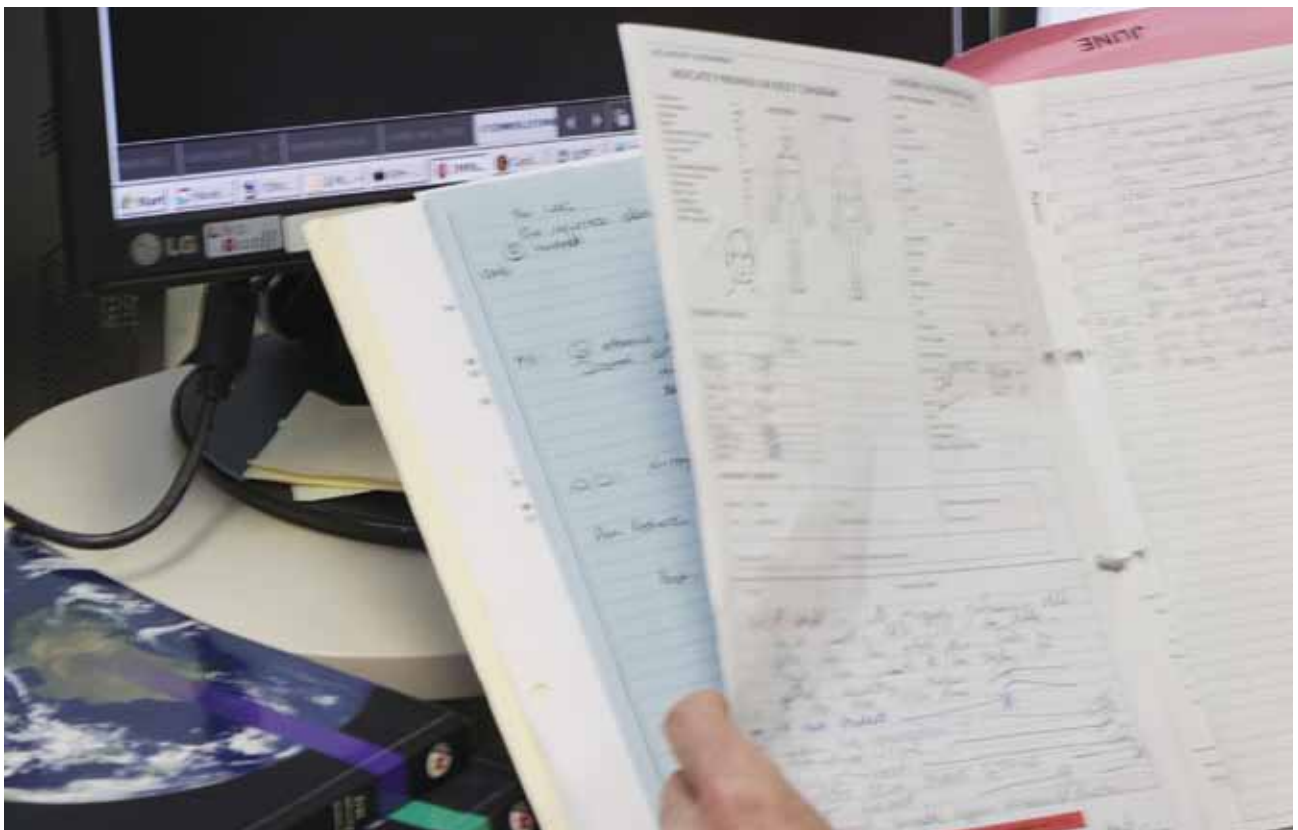
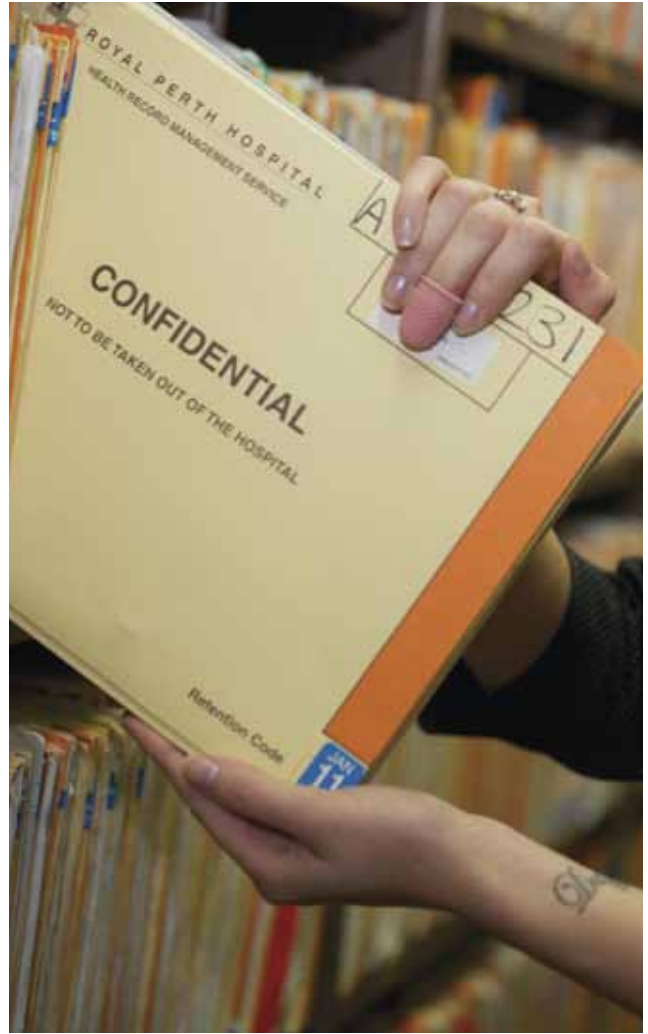
* HMDC data includes up to 9 months of data due to coding lag time.

** Refers to surgical operation and other surgical procedures as the cause of abnormal patient reaction, or of later complication without mention of misadventure at the time of the procedure.

*** Refers to other maternal diseases classifiable elsewhere but complicating pregnancy, childbirth and the puerperium.

**** Refers to other medical procedures as the cause of abnormal patient reaction, or of later complication without mention of misadventure at the time of the procedure.

The measurement of quality health care is complex and continually being refined. The use of routine CIM data, SAC 1 data and the administrative HMDC are necessary requirements in providing evidence to inform and guide decision making in health care delivery.



Coronial Review

The Coronial Liaison Unit (CLU) was established in 2005 to improve communication between WA Health and the Office of the State Coroner. It allocates health related findings from coronial inquests for implementation in hospitals and HS to support the continuous improvement of health care.

Health Services provide advice and comments on coronial findings and an account of actions taken to improve patient safety. This feedback is communicated to the State Coroner in a biannual report. The CLU continues to work effectively with the Office of the State Coroner to share lessons learned from mortality review to improve future patient care within the health care system.

Table 11 provides a summary of WA Health activity and response to coronial recommendations for the last three years. Where coronial recommendations propose more than one strategy for improvement, they have been recorded as separate recommendations. Recommendations are not considered completed until they have been implemented in all applicable HS (ongoing recommendations may be partially implemented).

Table 11: **Overview of Coronial Liaison Unit Activity (2010 to 2013)**

	2010/11	2011/12	2012/13
Total number of health related coronial inquest findings received by CLU	12	11	12
Total number of health related recommendations (including mental health) ^a	12	41	23
Number of general health related recommendations	11	28	20
Number of general health related recommendations completed/closed ^b	9	26	14
Number of mental health related recommendations	1	13	3
Number of mental health related recommendations completed/closed	1	6	2

^a Health related recommendations that are within WA Health's jurisdiction to action (targeted toward a specific Health Service, WA Health or Department of Health and not external agencies; or are applicable to the services provided by WA Health).

^b Status as at most recent report to the State Coroner (August 2013).

The following synopses are provided for coronial inquests where recommendations have implications for WA Health, and where findings have been released between July 2012 and June 2013. All HS are encouraged to use these summaries to raise awareness of important messages to facilitate continuous quality improvement. All inquests summarised here can be accessed at the WA Health website:

www.safetyandquality.health.wa.gov.au/mortality/inquest_finding.cfm

Ms S (August 2012)

Ms S was a 62 year old female with a history of depression and intermittent violent behaviour, who on the day of her death had been involved in a heated domestic dispute with her housemate. The police and ambulance service were called to the house and Ms S was taken to Albany Regional Hospital. Ms S was not able to receive a psychiatric review and declined to be admitted to hospital but agreed to attend a session with her psychologist an hour later, which she kept. On returning home, Ms S entered into a further argument with her housemate which deteriorated into physical violence. Ms S left and drove to a cliff where she proceeded to jump to her death. A note was found in her car indicating the disposal of her property.

The Coroner found that death arose from suicide and made recommendations relating to implementation of written protocols around the discharge of patients from ED who required psychiatric review. The Coroner stated that a psychiatrist should attend the ED for patient review (if requested to do so), in the event that a plan cannot be agreed between the treating doctor and psychiatrist.

Mr R (October 2012)

Mr R was a 15 year old male who died on 17 November 2012 as a result of cerebral ischaemia due to a blocked ventricular peritoneal (VP) shunt and obstructive hydrocephalus. Mr R was born with congenital abnormalities which resulted in severe intellectual disability, cerebral palsy and epilepsy.

Mr R's parents, concerned about him becoming unwell, took him to Fremantle Hospital where his VP shunt was examined and found to be "compressible but tense." On the afternoon following discharge two days later, Mr R had a seizure something that had not happened in some years. His parents took him to Princess Margaret Hospital (PMH) and requested a CT scan to enable assessment of his VP shunt. His VP shunt was examined but a CT scan was deemed to be unnecessary. The patient was discharged. The following day, while still unwell and vomiting, Mr R was taken back to Fremantle Hospital. Another request by the family for a "CT scan was refused." Mr R was administered morphine due to increasing pain, which resulted in him collapsing. Mr R was then intubated and transferred to PMH. It was then identified that the VP shunt was blocked and the patient underwent surgery to lower intracranial pressure. After the surgery, it was deemed that Mr R's "condition was such that he was unable to survive without medical technology." Once life support was removed Mr R passed away.

The State Coroner recorded that death arose by way of misadventure and made several recommendations to the Director General of Health which related to the development of clinical guidelines and consumer information about VP shunts, policy for the retention and accessibility of cranial CT scans, timely review of CT scans by those with the appropriate expertise and raising awareness of this case among physicians to highlight the need to exercise caution when treating paediatric patients with VP shunts.

Ms D (November 2012)

Ms D was a 17 year old female who died as a result of complications arising from a viral infection on 11 January 2009. Ms D first attended Rockingham Kwinana District Hospital (RKDH) two weeks before her death with a headache and respiratory symptoms. She was diagnosed with a viral upper respiratory tract infection and treated for mild dehydration before being discharged home feeling well. She was subsequently prescribed antibiotics by her General Practitioner (GP). Four days prior to her death Ms D represented to RKDH

with headache and fever, which she had for several days. She was admitted to hospital for two days for monitoring and treatment for likely viral meningitis, which is usually a self limiting disease that does not usually result in death.

An ambulance was called the day after discharge when Ms D was found at home, unresponsive, not breathing and without a pulse. Cardiac resuscitation was achieved at RKDH but Ms D had sustained significant hypoxic brain injury and died the following day at Sir Charles Gairdner Hospital (SCGH).

A post mortem examination confirmed the presence of both viral meningitis and viral myocarditis, and it has been postulated that the myocarditis precipitated cardiac failure and a lethal cardiac arrhythmia resulted in her death. The Deputy State Coroner noted that death occurred as the result of acute lymphocytic meningitis and focal myocarditis. The Deputy State Coroner made recommendations relating to accurate documentation of clinical decision making and raising awareness of concurrent inflammatory processes in rare cases of viral meningitis that may have an unexpected and fatal outcome.

Ms K (December 2012)

Ms K was a 38 year old female who died on 10 November 2012, as a result of bilateral pulmonary thromboembolism. Ms K had a complex medical history and had recently been diagnosed with an underlying pro-thrombotic disorder at Bunbury Regional Hospital. However, her treating teams at SCGH, where Ms K had undergone surgery for the removal of a pancreatic tumour, were not aware of this. Ms K's recovery was complicated and she was hospitalised for several months which resulted in her transfer to the SCGH Rehabilitation Unit where she continued on anti-coagulation therapy. On day five of her stay Ms K was found collapsed and unresponsive in bed and transferred to Royal Perth Hospital (RPH), however resuscitation was not successful.

The Coroner determined that death arose by way of natural causes. The Coroner recommended that SCGH consider developing a service to provide specialist advice in relation to patients with increased risk of deep vein thrombosis, and pulmonary embolism.

Mr W (December 2012)

Mr W was a 33 year old male who died on 14 March 2010. His cause of death was unascertainable from post mortem examination. Mr W, who was in police custody at the time, was escorted to RPH twice on 14 March 2010 for review, following high blood sugar readings taken at the watch house. On the second visit, Mr W was advised to increase his insulin dosage and was discharged back into custody.

Mr W administered his insulin, and was provided a meal in the early evening of the same day. It was unclear what insulin dose he administered or whether he consumed his meal. Later that evening, officers were unable to rouse Mr W and resuscitation was commenced. He was declared deceased at RPH. It was suggested that in the absence of significant dietary intake, the administration of his recommended dose of insulin may have resulted in hypoglycaemia. This in turn may have precipitated cardiac arrhythmia, something the deceased was predisposed to because he also suffered from Wolff-Parkinson-White syndrome and prolonged Q-T syndrome. The Coroner made two recommendations, however they were not directed to WA Health.

Ms T (January 2013)

Ms T was a 17 year old female who consumed a fatal quantity of ecstasy which led to her death on 2 February 2009. On the day Ms T attended a Big Day Out event she consumed three ecstasy tablets, with two tablets being consumed at the gates of the event in fear of being caught in possession of the tablets. Two hours later Ms T collapsed and was taken to SCGH for medical treatment however the quantity of ecstasy taken by Ms T proved fatal.

The Coroner found that death resulted from methylenedioxymethylamphetamine (MDMA) toxicity and arose by way of an accident. The Coroner recommended the revision of existing guidelines around the standard of medical care required at concerts, events and other organised gatherings, and the creation of a definition for the term 'paramedic' to ensure that only appropriately qualified and registered people are entitled to use this term and be able to practice in WA as a paramedic.

Ms A (January 2013)

Ms A was a 60 year old female who died on 29 October 2010 as a result of multi-organ failure following haemorrhage from penetration of her left femoral artery during a coronary angiography procedure.

After being discharged, Ms A complained of increasing pain and bruising over the next three days and presented to her GP for review. Extensive bruising and haematoma and significant pain were noted and Ms A was prescribed analgesia and antibiotics and was sent home.

Ms A's condition continued to deteriorate and two days later she was taken by ambulance to Armadale Kelmscott Memorial Hospital (AKMH) where she had a cardiac arrest secondary to hypovolaemic shock. Resuscitation was carried out at AKMH and Ms A was transferred to RPH where she underwent surgery to control bleeding from the angiogram puncture site. Several further surgeries and aggressive treatments were undertaken but, she developed ongoing complications including extensive ischaemic necrosis of the bowel, respiratory failure and renal failure. She died from these complications seven days after her procedure.

The Coroner stated "this death was unnecessary and could have been avoided had the deceased contacted her treating experts... or had she returned to [hospital]." The State Coroner recommended that discharge summaries be provided by all public and private patients having angiograms to document the extent of any haematoma, bleeding, pain level and medications at the time of discharge and that a discharge summary should be provided to the patient's general practitioner.

Ms M (January 2013)

Ms M was a 46 year old female who underwent a laparoscopic sleeve gastrectomy (removal of a portion of the stomach) at St John of God, Murdoch. After the surgery there were a number of complications such as an intra abdominal abscess and repair of a leak from the staple line. Ms M remained in the ICU and continued to be "extremely unwell", which resulted in two subsequent laparotomies and an endoscopic stent procedure being performed. Ms M also developed an extensive deep vein thrombosis, foot drop and gastric fistulae (leakage from the stomach to the skin).

Repair of these fistulae was attempted by a second surgeon at Fremantle Hospital, however during this difficult procedure, air was able to enter her blood vessels and heart and this caused a cardiac arrest. She was resuscitated in the operating theatre but later

died in the ICU after it was demonstrated that she had sustained extensive hypoxic brain injury during the cardiac arrest.

Ms M died as a result of a gas embolism and the Coroner made the finding that her death arose by way of misadventure. The Coroner made several recommendations in relation to communication of vital observations, auditing of MET calls and ensuring state-wide consistency in dealing with medical emergencies.

Mr C (February 2013)

Mr C was a 21 year old male who died on 8 June 2007 as a result of acute hypoxic ischaemic encephalopathy and pneumonia in a man with recent traumatic neck injury and combined drug effect (principally Oxycodone). He had a history of mental illness and substance abuse. Whilst intoxicated, Mr C engaged in risky behaviour by jumping onto the handrail of an escalator, which resulted in the fracture of his wrist. The injury was surgically corrected at RPH and he was later discharged with a number of medications including Oxycodone for pain relief. Later that day, Mr C consumed a fatal amount of Oxycodone tablets and he died in hospital. The Coroner found that death arose by way of accident due to the belief that the deceased did not intend to commit suicide.

The Coroner reviewed issues around the accessibility of information stored within PSOLIS, the adequacy of the psychiatric review of Mr C whilst at RPH and the amount of opioids provided to Mr C upon discharge. However, the Coroner made no recommendations.

Ms L (May 2013)

Ms L was a 55 year old female who underwent a successful gastric banding procedure in February 2008, which resulted in weight reduction. In November 2009 Ms L was feeling unwell and consulted her GP complaining of "ear ache and vomiting and was adamant that her lap band was not to blame." Ms L was advised to go to hospital but declined however, she did agree to attend if her condition did not improve.

Ms L was found the following day in bed and unresponsive. Paramedics called to the home could not resuscitate the deceased. The Deputy Coroner found that death resulted from aspiration of gastric contents in association with gastric necrosis in a lady with a lap band device and that death arose by way of misadventure. The Coroner also recommended that education programs be developed to inform junior doctors and GPs about the potential risks, side effects such as excessive vomiting and the long term management associated with bariatric surgery.

Mr M (May 2013)

Mr M was a 38 year old male who died as a result of acute clozapine toxicity whilst remanded in Hakea Prison. Mr M had a history of mental illness with an original diagnosis of borderline personality disorder evolving to schizoaffective disorder (probably schizophrenia). Whilst admitted to the Frankland Unit at Graylands Hospital his medications were adjusted with Olanzapine being withdrawn and replaced with Citalopram and Clozapine dosage increasing. Clozapine is subject to strict prescribing procedures and its effect must be monitored by way of blood tests. Once he was discharged to Hakea Prison, Mr M was secured in the Crisis Care Unit safe cell due to a high risk of self harm. Mr M was cooperative and compliant with his medication and there was no evidence that medication was secreted away.

Toxicology results indicated very high caffeine levels and clozapine in the fatal range. Caffeine consumption is restricted within Frankland Ward however, it was made readily available to prisoners within Hakea Prison. The expert clinical pharmacologist and toxicologist for the inquest was of the view that the cessation of smoking and the unlimited access to caffeine at Hakea Prison caused the toxic levels. A reduction in smoking reduces the activity in P450 2A1 (liver cytochrome), which in turn reduces the ability to remove caffeine and clozapine from the system, thereby increasing their levels in the body.

With the post mortem finding no obvious cardiac or liver dysfunction, and no clinical signs of toxicity, death was most probably a sudden death by way of cardiac arrhythmia and the Coroner found that death arose by way of misadventure. The Coroner made three recommendations; one of which was relevant to WA Health and related to the details that should be included in any formal handover to psychiatrists within custodial facilities.

Mr S (May 2013)

Mr S was a 47 year old male who travelled from Carnarvon to Geraldton Regional Hospital for a laparoscopic cholecystectomy. After making an “unremarkable recovery” Mr S was deemed fit for discharge but due to his travel arrangements remained in hospital another day. On the morning of his discharge Mr S complained of chest pain, dizziness and sweating, which culminated in a cardiac arrest from which Mr S did not survive. A post mortem revealed that Mr S died from a pulmonary embolus. The Coroner found that death arose from natural causes and recommended a revision of venous thromboembolism risk assessment forms to consider capturing information from pre operative patients on the type and duration of their travel.

Review of Death (formerly known as WARM)

Over the 2012/13 period the PSSU completed a review of the WARM Policy, which led to the release of the Review of Death (ROD) Policy in August 2013. The ROD Policy (2013) recognises the role that reviews of death play in improving the safety and quality of healthcare, complementing information identified from the reporting and investigation of clinical incidents and the investigation of patient complaints. As per the ROD Policy, all hospital deaths must be reviewed and categorised in terms of preventability. Appendix three provides a diagrammatical representation of the interaction of reviews of deaths with clinical incident management processes and the Western Australian Audit of Surgical Mortality.

In the 2012/13 reporting period, data provided by HS and private licensed healthcare facilities has demonstrated that for the period July 1 2012 to March 31 2013, 93.4% of hospital deaths were reviewed within six months of the date of death, with 1.2% of deaths referred for further local investigation (Table 12). Public and private hospitals are also required to indicate when notifying a SAC 1 clinical incident if notification was an outcome of a mortality review process. In the 2012/13 period, 74 SAC 1 clinical incidents comprised an inpatient (or emergency department) death, with five notifications of clinical incidents in this group originating from a mortality review process (6.8%).

Table 12: **Review of Death Indicators**

Indicator	Outcome
Percentage of deaths with a completed review within six months of the date of death (reflecting deaths that occurred between 1/7/2012 - 31/3/2013)	93.4%
Percentage of deaths referred for further investigation	1.2%

Data comprises public and private hospitals. A completed review includes a death a) where no further investigation is required; b) with a completed WAASM audit; c) sentinel event notification following confirmation of a preventable death. Data from Joondalup Health Campus reflects inpatient deaths only. Data from WACHS is an incomplete data set.



Western Australian Audit of Surgical Mortality

The Western Australian Audit of Surgical Mortality (WAASM) is an external, independent peer review of surgically related deaths. The WAASM is managed by the Royal Australasian College of Surgeons (RACS) and funded by the DOH. The WAASM has been operating since 2002, with data reported by calendar year.

Participation in the WAASM fulfils mortality review obligations mandated by the ROD Policy (2013). All deaths that occur in WA hospitals (including private hospitals), where the patient was under the care of a surgeon are notified to the WAASM Office and audited.

The RACS' Continuing Professional Development (CPD) Manual mandates surgeons' participation in the Australian and New Zealand Audit of Surgical Mortality (ANZASM)²³ if a surgeon is "in operative based practice, has a surgical death and an audit of surgical mortality is available in the surgeon's hospital." Non-participation jeopardises a surgeon's registration with the Medical Board of Australia.²⁴

Surgeons are sent a proforma to complete and are asked to identify when there has been an area for consideration,²⁵ an area of concern²⁶ or an adverse event. Once returned, the case is de-identified and sent to a peer surgeon at a different hospital for review (first-line assessment). Second-line assessment is the process whereby cases are reviewed by a second peer surgeon along with the patient's medical notes. Cases are only referred for second-line assessment if an area of concern or adverse event has been identified, or where there is the potential for lessons to be learned (refer to Appendix four for an overview of the audit process). In 2013, 584 deaths were notified from 35 hospitals. Fifteen per cent (n=41) of completed cases were referred for second-line assessment.

For the WAASM, an adverse event is defined as "an unintended injury caused by medical management, rather than by the disease process, which is sufficiently serious to lead to prolonged hospitalisation, lead to temporary or permanent impairment or disability of the patient at the time of discharge or contribute to/or cause death." The WAASM Annual Report 2013, identified ten adverse events that caused death in 2011 (two of these were considered preventable) and three adverse events that caused death in 2012²⁷ (one of these was considered preventable; see Table 13).

Table 13: **Frequency and Percentage of Adverse Events Causing Death that were Considered Definitely Preventable (2003 to 2012)***

2003	2004	2005	2006	2007	2008	2009	2010	2011	2012
2	3	7	3	4	3	3	2	2	1
1%	2%	4%	2%	2%	1%	1%	1%	1%	<1%

* Includes cases complete as at March 1, 2013. Terminal cases are excluded.

In 2012, three adverse events causing death were identified, including delay in transfer to surgical unit (n=1), post-operative bleeding after open surgery (n=1) and injury caused by a fall (n=1; see Table 14).

²³ <http://www.surgeons.org/for-health-professionals/audits-and-surgical-research/anzasm/>

²⁴ Royal Australasian College of Surgeons (2013). WA Audit of Surgical Mortality (WAASM) Annual Report 2013.

²⁵ Area of consideration = clinician believes an area of care could have been improved.

²⁶ Area of concern = clinician believes an area of care should have been better.

²⁷ Partial analysis – 2012 data includes that for which the audit process was complete at March 1, 2013.

Table 14: **Frequency of Adverse Events Causing Death for 2010 to 2012 and Includes Events that were Not Considered Preventable***

Adverse Event	2010	2011	2012
Intra or post-operative bleeding during or following open surgery	1	-	1
Intra-operative bleeding during laparoscopic operation	1	-	-
Aspiration pneumonia	-	1	-
Deep Vein Thrombosis (DVT) related events (including failure to use DVT prophylaxis)	-	2	-
Reaction to medication	1	-	-
Delay to surgery	1	-	-
Delay in transfer to surgical unit	-	-	1
Delay in diagnosis	1	-	-
Pre-operative assessment inadequate	1	-	-
Accidental arterial puncture	1	-	-
Injury caused by fall in hospital	1	2	1
General anaesthetic complications	1	-	-
Pulmonary embolism	2	-	-
Perforation of colon during endoscopic operation	-	2	-
Perforation of small bowel during open surgery	-	1	-
Septicaemia (cause unspecified)	1	-	-
Anastomotic leak	3	-	-
Other, equipment related complication	1	-	-
Communication issues	1	-	-
Cardiovascular Accident (Stroke) following open surgery	-	1	-
Missed diagnosis	-	1	-
Total	17	10	3

* 2012 data includes those cases that were complete at March 1, 2013.

The most frequently reported adverse events by surgeon assessors over the 10-year audit period of 2003 to 2012 were: complication of surgery (n=33), anastomotic leaks (n=31) and bleeding associated with the operation (n=15; see Table 15).

Table 15: **Most Frequently Reported Adverse Events Causing Death 2003 to 2012 and Includes Events that were Not Considered Preventable***

Adverse Event	2003-2012
Complication of surgery	33
Anastomotic leak	31
Bleeding associated with operation	15
Infection (including septicaemia)	13
Injury caused by fall in hospital	13
Pulmonary embolus	13
Decisions relating to surgical treatment	11
Delay to treatment (medical or surgical)	9
Gastrointestinal perforation	8
Related to DVT	8
Medical management/assessment issues	6
Total	160

* Note: Only events with frequencies ≥ 5 have been included. Adverse events have been grouped by the PSSU based on event descriptions provided by the surgeon assessors for the WAASM.

The WAASM has identified for a number of years now, that peer surgeons (assessors) identify areas of concern or adverse events more frequently than surgeons involved in a patient's care.²⁸ The WAASM Annual Report 2013, noted that assessors reported 17 adverse events in 2012 where surgeons identified 13 events. The measured level of agreement between surgeon and assessor increased in 2012. WA Audit of Surgical Mortality Annual Reports can be accessed online at:

www.surgeons.org/for-health-professionals/audits-and-surgical-research/anzasm/waasm/

The ANZASM provides central oversight over each of the jurisdictional surgical audits, including WAASM, and provides national overview of data. An annual case note review booklet which includes case studies from surgical audits across all ANZASM jurisdictions, was released by the RACS in May 2013. Although the cases are heavily biased toward surgical cases, they also contain important lessons that can be applied across the health system. The PSSU encourages all health practitioners to review the cases in the case note review booklet for educational and professional development purposes. The most recent booklet can be accessed here: <http://intranet.health.wa.gov.au/osqh/reports/> (access is restricted to WA Health staff).

²⁸ Royal Australasian College of Surgeons. (2013). *WA Audit of Surgical Mortality (WAASM) Annual Report 2013*, p.26.

DVT and PE: Multiple Failures Lead to Death*

A 42 year old female, who had sustained a serious injury of the left ankle, was transferred by Royal Flying Doctor Service from the local country hospital to a regional hospital. An X-ray revealed a tibial fracture. Following manipulation under anaesthesia, the patient was admitted under the care of the surgeon whilst awaiting transfer to a metropolitan hospital injury clinic, where the patient would undergo an injury assessment.

A public hospital referral was cancelled after the patient consulted a private orthopaedic surgeon in Perth, who determined the bone alignment was adequate. Two days later, the patient presented to the ED of a Perth hospital complaining of swelling above the knee. The treating doctor diagnosed thrombophlebitis, but determined that a DVT was unlikely. An ultrasound was arranged for the following day however, this did not occur. No DVT prophylaxis was prescribed.

Two days later, the patient collapsed at home and was rushed by ambulance to a metropolitan hospital, where she was pronounced dead. The cause of death was bilateral pulmonary emboli and a large saddle embolus.

This case highlights areas of care that are often overlooked and the continuation of DVT prophylaxis post discharge. The WAASM continues to monitor and report surgically related deaths attributed to DVT. Cases such as this are included in the annual ANZASM case note review booklet, which includes lessons learned that can most often be applied across the health system (see the above link for access to annual reports and case note review booklets).

* This case study has been provided by the Royal Australasian College of Surgeons and modified by the PSSU.



Current Achievements

Delivery of health care has numerous, complex and shifting challenges which range from increased demands made by an ageing population to costly advances in medical technology, underpinned by rising public expectations and awareness. How we solve these challenges is shaped very much by our work culture and context, funding and governance. WA Health has been innovative in nurturing and developing a culture of patient safety through the delivery of high quality health care and the rigorous investigation of clinical incidents but there is still more work to be done. Patient surveillance must move from a reporting culture to one of constant surveillance so as to prevent patient harm. This can be achieved by developing a workforce which recognises clinical errors and is mature enough to address and recover from them.

WA Health has been able to move from a clinical incident reporting culture which at times viewed the notification of clinical incidents as a criticism of individuals' actions, to a work culture that acknowledges the need to identify and investigate system errors in health care delivery.

Over the last 12 months, this maturation can be seen in achievements such as:

1. The provision of exceptional and safe health care as demonstrated by the very low rate reported for the more serious SAC 1 clinical incidents in 2012/13 (5 per 10,000 separations).
2. While SAC 1 clinical incidents comprise only a small proportion of clinical incidents, across the health system, there has been a dramatic increase in the number of SAC 1 clinical incidents notified in the past 12 months. This increase is seen as an achievement stemming from the release of the revised CIM Policy (2012). The CIM Policy (2012) revisions have assisted WA Health staff to better understand the types of clinical incidents resulting in serious harm or death that require rigorous clinical investigation and reporting at a State level. Previously, these clinical incidents tended to be captured in the CIMS database but not reported to the Sentinel Event Program.
3. The release of the CIMS and SAC 1 Data Request Process Guidelines occurred in November 2012. This document was developed to assist HS staff in requesting state-wide CIMS and SAC 1 data and incorporated the Guidelines for the Release of Data prepared by the Information Development Management Branch, DOH.
4. The follow-up 12 month review of the integrated CIM Policy which was undertaken to ensure that HS staff were confident in understanding the changes to the CIM processes introduced in 2011. This state-wide CIM Policy review resulted in only minor edits to the CIM Policy, which was re-released on the 10 April 2013.
5. A Report on Consultation: Feedback on the CIM Policy and CIM Toolkit was prepared and released. This report was developed to enhance communication with the HS and advise on what updates had been made to the CIM Policy and the CIM Toolkit based on the 86 suggestions received.
6. Ten state-wide CIM Focus Reports have been produced over the last 12 months. These reports were requested by WA Health staff and addressed ad hoc clinical incident issues ranging from clinical incidents involving epidural usage to clinical incidents resulting from incorrect patient identification.
7. The development of the first state-wide CIM Quarterly and Complaints Report which was developed to assist safety and quality staff in receiving timely state-wide clinical incident data.

8. The development and release of the first Clinical Incident Check-Up Report which is a one page poster report focusing on a specific CIM issue and designed to be used in the clinical settings to stimulate patient safety discussion and quality improvement activity.
9. Further refinement of the integrated Your Safety in Our Hand Patient Safety Annual Report occurred with the inclusion of new HMDC data to assist in providing a broader understanding of health care delivery from a quality of care perspective.
10. WA Health has also committed to having a stronger electronic CIM presence with the procurement and implementation of a state-wide electronic CIMS. This new CIMS will further advance the extensive work currently being achieved in this area. As a key stakeholder, PSSU has been heavily involved in the procurement and preparation process for the new web based CIMS.
11. The “From Death We Learn” annual publication was released in December 2012. This publication reviews the coronial inquests that have taken place and provides key messages, recommendations and actions taken by WA Health to address the Coroner’s concerns. In addition to this publication the PSSU was also involved with the development of five digital video educational resources which were released by the Nursing and Midwifery Office. These video simulations are based on genuine coronial inquest findings and are used to stimulate discussions on issues that have been identified as impacting on patient safety.
12. In August 2012 and February 2013, the State Coroner was provided with an account of WA Health’s response to recommendations that have been made following coronial inquests. The “Progress Report for Health Related Coronial Recommendations” included updates on recommendations that required longer term implementation, and responses for recent recommendations. WA Health values the comprehensive investigation that is undertaken by the Coroner, which is an important component of an integrated patient safety surveillance framework.
13. A consultation review of the WA Health Complaint Management Policy and Toolkit was undertaken with HS complaints handling officers in October 2012 to assist in the revision of Complaints Policy. This draft was disseminated more widely across the HS in March 2013, to seek further feedback. Key stakeholders included those from WA Health organisations as well as community health and consumer advocacy services such as the Health Consumers’ Council, Carers WA and Arafmi (Mental Health Carers Arafmi WA). It was encouraging to see significant engagement in this process, with 206 separate comments considered in the revision of the WA Health Complaint Management Policy and Toolkit.
14. A discussion paper to review the WARM Policy was undertaken in January 2013 and greatly assisted in the development of the Review of Death Policy (2013).

Future Focus

Building on the CIM achievements made in 2011/12, WA Health is looking to increase the number of notifications and investigation of clinical incidents, as a way of ensuring that safety and quality practices continue to be firmly embedded in all aspects of health care delivery. It is only when system errors in health care delivery are identified, that changes can be made to reduce/prevent clinical incidents from harming our patients.

One strategy that will greatly assist with increasing reporting, is the rollout of the state-wide electronic system to capture, monitor and analyse clinical incidents. The CIMS communication plan and training requirements have highlighted to WA Health staff, the need for patient safety vigilance and in particular the notification and investigation of such clinical incidents. The roll out of the new CIMS has also re-energised staff who have laboured for years with a paper based reporting system that is fraught with delays and limitations.

Additionally, this new CIMS will integrate the SAC 1 data with SAC 2 and SAC 3 data which previously were captured in separate databases. This integration will streamline data capture which can be viewed in real time and will afford greater data analysis opportunities including improved rates analysis. Furthermore, the implementation of a web based CIMS will assist in simplifying and standardising how clinical incidents are classified through the utilisation of a comprehensive online classification system, which provides step by step guidance.

While the new CIMS will be rolled out to all public hospitals and health services across the State, it is important to note that private hospitals and health services by way of their licensing and contractual arrangements with the DOH, will still be required to report and investigate SAC 1 clinical incidents that result in the serious harm or death of a patient. This ensures that all hospital patients whether utilising the public or private system are afforded the same patient safety management process with regard to clinical incidents resulting in serious harm or death.

The new CIMS will also enable WA Health to be well placed to align with the ACSQHC's National Patient Safety Measurement Model, which aims to:

- "Monitor core, hospital-based outcome indicators with audits of significant variance
- Monitor adverse event trends from coded, admitted patient datasets consisting of hospital acquired diagnoses
- Conduct surveys of patient hospital experience
- Structured analyses of selected sets of incident types and develop standards."²⁹

This new measurement model will permit HS to better understand their clinical incidents and thereby enhance their patient safety programs. As previously stated, the CHADx is used to map adverse events within an administrative data set. In WA Health, the CHADx has been used to identify clinical incidents within the HMDC to provide a more comprehensive picture of health care delivery. Findings have revealed inconsistencies between clinical incidents notified into the CIMS and those captured in the HMDC. Future work will involve understanding the reasons for these data differences and where possible identifying solutions to ensure that clinical incidents are better captured within our administrative data sets.

²⁹ Wakefield, J., Jorm, C. 2009. Patient Safety- A balanced measurement framework. Australian Health Review.33(3): 382-389.

WA Health is currently implementing the VLADs tool to enhance health care delivery through the ongoing monitoring of patient data so that unexpected clinical outcome trends can be identified and investigated. Additionally, VLADs data can also identify a change or shift in clinical practice that has resulted in increased treatment quality. The use of VLADs will further complement patient safety, as these data outcomes will be analysed in conjunction with both CHADx findings and clinical incident data. The use of different data sources provides a more comprehensive picture of patient safety issues within WA Health and will assist in highlighting those areas that either require improvement or are achieving improvements in health care delivery.

Staff at WA Health undertake an enormous amount of quality improvement projects as demonstrated in successful accreditation submissions. Previously, the CIM annual reports were the main source of state-wide CIM data available to guide quality improvement practice. The need for real time data was a driving force in the development and dissemination of quarterly CIM reports, that have initially addressed the current gap in routine state-wide CIM data availability, and should assist staff in developing quality improvement projects targeting the most urgent clinical issues. The implementation of the new CIMS will further facilitate the readily available access to patient safety information, which can be used to inform and enhance clinical practice.

The focus of synthesising and providing evidence from a variety of data sources to assist in enhancing patient safety is fundamental on two levels. Firstly, it provides a clear and comprehensive identification of state-wide patient safety issues, which will assist HS in their planning and implementation of quality improvements initiatives, that address both local and state-wide patient safety priorities. And secondly, it will assist in establishing an integrated reporting system that will further embed patient safety principles within our health service culture.

The PSSU is well positioned to direct this patient safety resurgence through its state-wide analysis of clinical incidents and complaints data and its review and management of coronial recommendations. Furthermore, the PSSU will continue to work collaboratively with the HS, the Office of Safety and Quality in Healthcare, the Epidemiology Department and the Information Development and Management Department to provide rigorous research evidence that can be used to reduce patient harm and make each patient's journey safer.

Appendix One: Severity Assessment Code 1 Clinical Incident Notification List

Severity Assessment Code 1 Categories	
Clinical incidents that must be reported as SAC 1 (Category 1-8 are nationally endorsed sentinel event categories)	
1	Procedures involving the wrong patient or body part resulting in death or major permanent loss of function.
2	Suicide of an inpatient (including patients on leave). Mental Health Services are required to report to the Chief Psychiatrist and to the State Coroner (for involuntary patients) episodes of unexpected death.
3	Retained instruments or other material after surgery requiring re-operation or further surgical procedure. Retention of a foreign object in a patient after surgery or other procedure including surgical instruments or other material such as gauze packs inadvertently left inside the patient when the surgical incision is closed - excluding objects intentionally implanted as part of a planned intervention and objects present prior to surgery that are intentionally retained.
4	Intravascular gas embolism resulting in death or neurological damage. Death or serious disability associated with intravascular gas embolism that occurs while the patient is being cared for in a facility – excluding deaths associated with neurosurgical procedures known to present a high risk of intravascular gas embolism.
5	Haemolytic blood transfusion reaction resulting from ABO incompatibility.
6	Medication error resulting in death of a patient.^c Death or serious injury associated with a medication error, including, but not limited to errors involving: <ul style="list-style-type: none"> ■ the wrong drug ■ a contaminated drug ■ the wrong dose ■ the wrong patient ■ the wrong time ■ the wrong rate ■ the wrong preparation; ■ the wrong route of administration ■ insufficient surveillance (e.g. blood tests, clinical observation).
7	Maternal death or serious morbidity associated with labour or delivery. Maternal death or serious disability associated with labour or delivery while the patient is being cared for in a facility or by maternity care providers, including events that occur within 42 days post delivery.
8	Infant discharged to wrong family or infant abduction.

^c This category excludes reasonable differences in clinical judgement on drug selection and dose.

Severity Assessment Code 1 Categories

Examples of SAC 1 Clinical incidents that must be reported

Fetal complications associated with health care delivery.

- Unrelated to congenital abnormality in an infant having a birth weight greater than 2500 grams causing death or serious and/or ongoing perinatal morbidity.
- Complications not anticipated yet arose and were not managed in an appropriately/timely manner resulting in death, serious harm or ongoing morbidity.
- Delivery at a site other than where labour commences which requires transfer to another facility for a higher level of care resulting in death or serious or ongoing morbidity.

Medication error (not resulting in death).

- The inappropriate administration of daily oral methotrexate*
- The intravenous administration of epidural medication*
- Wrong gas being administered.*

Misdiagnosis and subsequent management refers to physical and mental health.

- Failure to monitor and respond to oxygen saturation.*

Delay in recognising/responding to physical clinical deterioration.

Complications of resuscitation.

- Events in which staff experienced problems in managing an emergency situation or resuscitation resulting in death, or serious and/or ongoing morbidity.
- Failed resuscitation where resuscitation protocols or guidelines could not be followed due to a deficiency of equipment, communication, or staffing resulting in death, or serious and/or ongoing morbidity.

Complications of anaesthetic management.

- Unintended intra-operative awareness.
- Anaesthetic events resulting in death or serious and/or ongoing morbidity.

Complications of surgery.

- Wrong site surgery not resulting in death or permanent loss of function.*
- Pulmonary embolism.
- Injury to major blood vessels.

Complications of an inpatient fall.

Hospital process issues.

- Events in which hospital processes such as triaging, assessment, planning or delivery of care e.g. miscommunication of test results, response to abnormal test results contributed to death, or serious and/or ongoing morbidity.
- Transport or transfer – events in which delays in transport or transfer contributed to death, or serious and/or ongoing morbidity.
- Misidentification of patients.*

Infection control breach.

The unexpected death of a mental health patient/consumer.

Severity Assessment Code 1 Categories

Absconding of any mental health patient/consumer.

Patient absconding with adverse outcome.

Wrong route administration of oral/enteral treatment.*

This list is not exhaustive. Sites are encouraged to seek advice from within their organisation and/or the Patient Safety Surveillance Unit regarding the potential notification of clinical incidents not included in this list.

* Never Events refer to serious, preventable patient safety incidents that should not occur if preventative measures are in place.

Refer to the Clinical Incident Management Policy (2012):

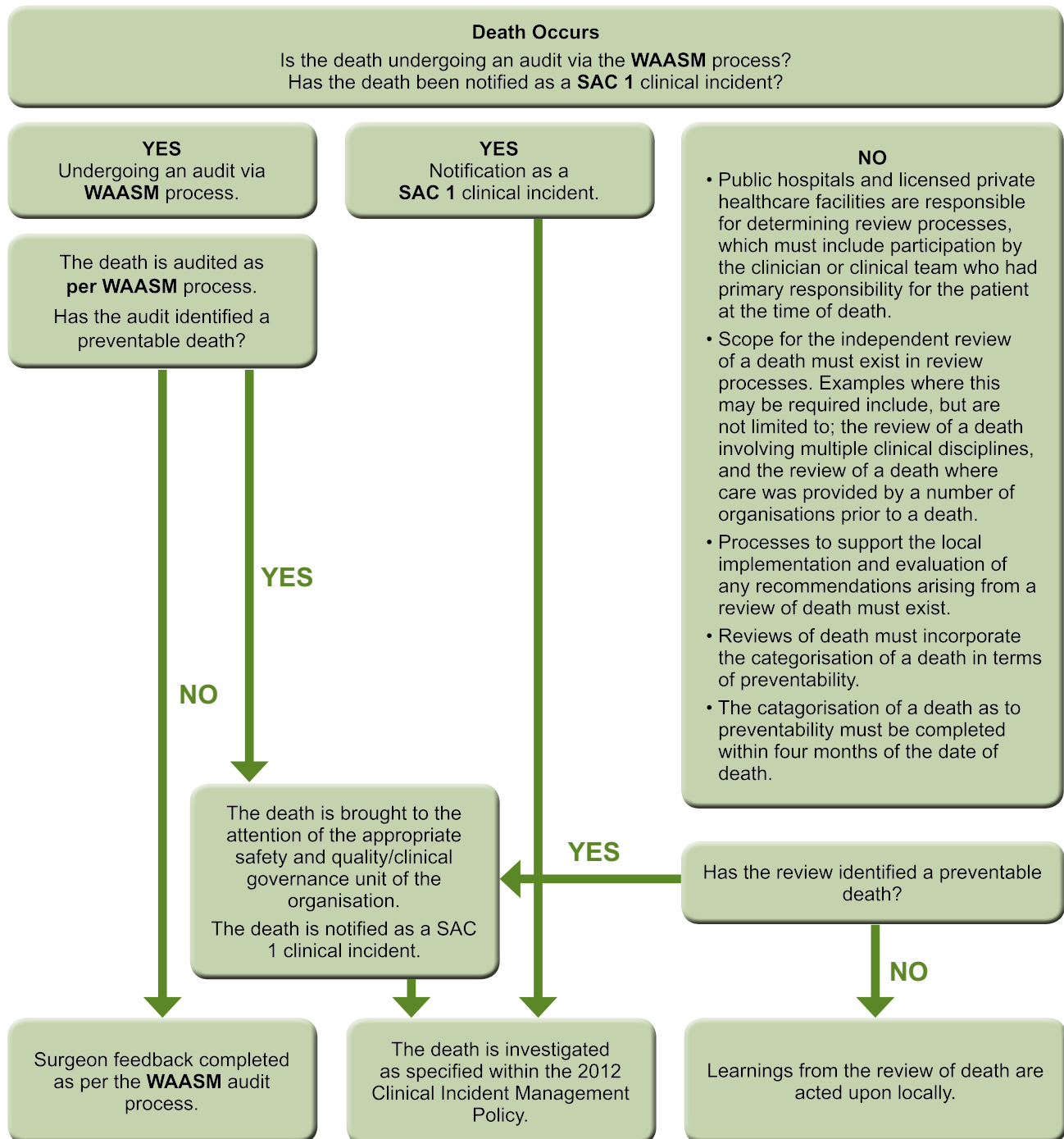
http://www.safetyandquality.health.wa.gov.au/docs/aims/CIMS_Policy_2012.pdf

Appendix Two: Categories of Contributing Factors Utilised in SAC 1 Clinical Incident Investigations

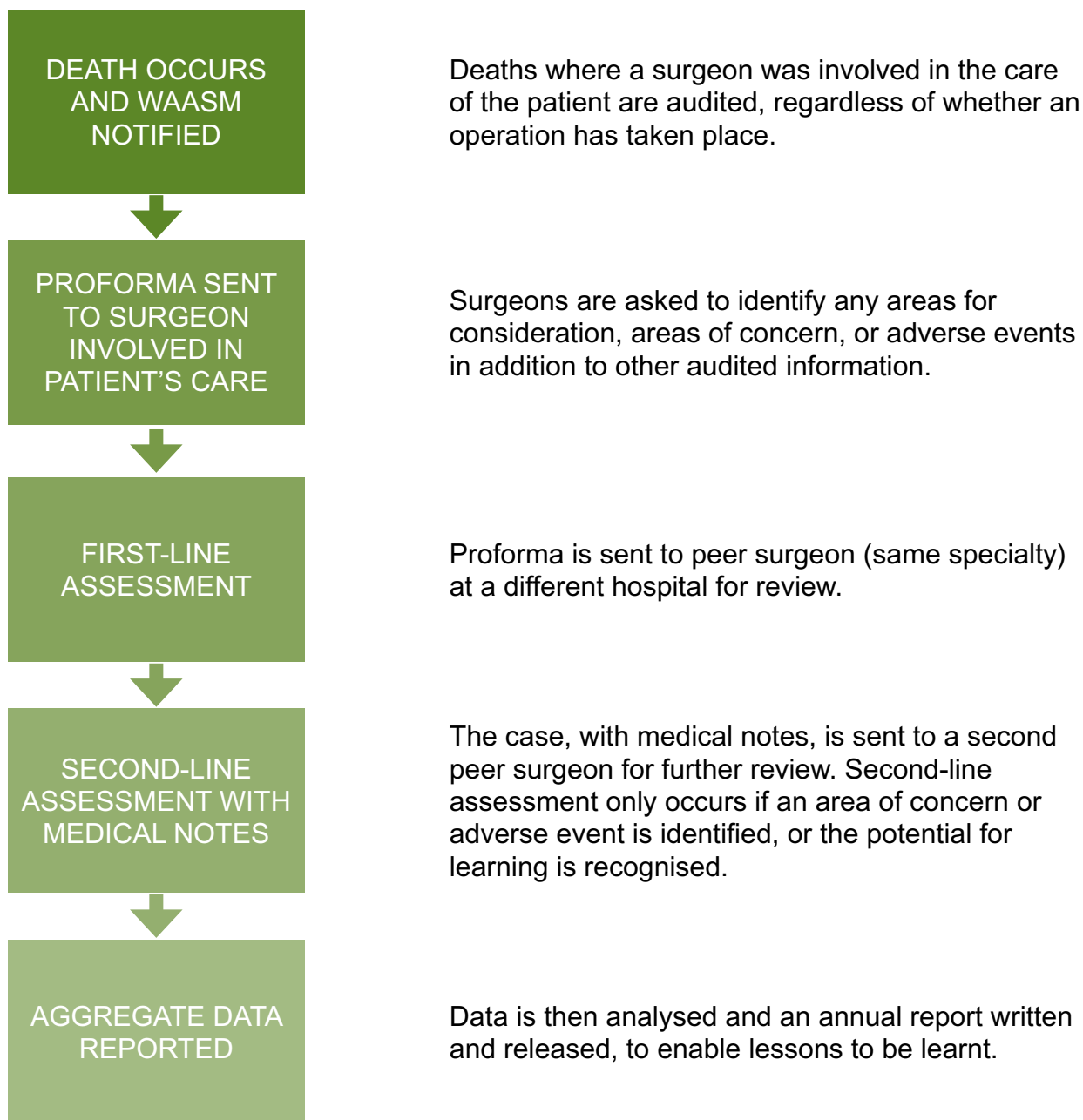
Categories of contributing factors and examples for each factor

1. Communication which includes communication issues between staff, patients and family members, documentation, patient assessment or misinterpretation of information.
2. Knowledge, skills, competence which includes staff training/skills, staff competency, staff supervision, the use/failure to use or misuse of equipment.
3. Work environment/scheduling which includes workplace design, suitability of work environment, environmental stressors, safety assessments/evaluations/procedures, the shortage of beds/rooms/resources or staff timetabling.
4. Other/patient factors which includes medical history/known risks, communication difficulties, personal issues, or other issues not identified.
5. Equipment which includes the suitability, availability or lack of equipment provision, maintenance, appropriate use of equipment, back up systems/emergency provisions.
6. Policy, procedures and guidelines which includes the absence of relevant up-to-date policies, procedures or guidelines, implementation issues, education/training, issues in applying policies procedures or guidelines, the absence of audit or quality control systems.
7. Safety mechanisms which includes the lack of appropriate safety mechanisms or systems in place or the breakdown of safety mechanisms.

Appendix Three: Flowchart Reflecting the Interaction of the Review of Death Policy with Clinical Incident Management Processes, and the Western Australian Audit of Surgical Mortality



Appendix Four: Western Australian Audit of Surgical Mortality Process (WAASM)



Data Quality Statement: For Datasets Used in This Report

Quality Dimensions	
Institutional Environment	Clinical Incident data are obtained from across WA Health hospitals and health services. Clinical incident reporting is a voluntary process. However, it is mandatory to report all SAC 1 clinical incidents which are also received from all WA licensed private hospitals and contracted non government agencies. The PSSU undertakes all data analysis presented within this report. Hospital separation data are extracted from the Hospital Morbidity Data Collection and is provided by Data Integrity. Data Integrity Management sits within the Performance Activity and Quality Division.
Relevance	<p>The purpose of the data is to report all state-wide clinical incidents notified within the 2012/13 period, to the:</p> <ul style="list-style-type: none"> ■ CIMS database ■ SAC 1 database. <p>SAC 1 incidents include data from WA Health hospitals and community health services plus data from licensed private hospitals and contracted non government services. Please note that the numerator for the SAC 1 clinical incident rate includes all the above-mentioned sites while the denominator only includes separation data from WA Health hospitals' inpatient activity. The introduction of the new web based CIMS will improve rates analysis by providing more robust categorisation of the care setting.</p>
Timeliness	The reference period for this data is 1 July 2012 to 30 June 2013. Due to data reporting and coding delays there is a two month lag time with regard to CIMS data. As such data frequencies may change over time and this would prohibit comparisons with previous reports.
Accuracy	Data are entered into the CIMS database on a routine basis by safety and quality staff at each facility. SAC 1 data are entered on a routine basis by PSSU staff. All data entered into the abovementioned databases undergo data validation processes both at a local and state-wide level. This is to ensure the data are clean and free from duplicates. Missing data are identified and rounding errors of + or – 1 are deemed acceptable.
Coherence	The CIMS data collection methodology has not altered during this 12 month time period. The CIMS data are dynamic and data lag times exist which can prohibit the comparison of data at different time periods.
Accessibility	The data are only accessible to WA Health employees who have been granted permission to access the CIMS and/or SAC 1 databases. The PSSU does allow access to de-identified CIMS data by external parties whose research proposal has been approved by PSSU and who have obtained DOH ethics approval. All requests for HMDC data require extraction and approval from Data Integrity Management.
Interpretability	Any queries with regard to data found in this report can be directed to the Patient Safety Surveillance Unit, Performance Activity and Quality Division, DOH.

Glossary

Anastomotic – to unite by means of anastomosis or connection between two formally separate structures.³⁰

Angiogram – a radiographic image of blood vessels obtained by angiography, after an injection of radio opaque contrast material.³⁰

Bariatric – a branch of medicine concerned with the management of obesity.³⁰

Bed days – the number of days a patient stays in hospital between admission and discharge. An aggregate measure of HS utilisation.

Clinical incident – an event or circumstance resulting from health care which could have, or did lead to unintended harm to a person, loss or damage. Clinical incidents include:

- **Near miss** which is an incident that may have, but did not cause harm, either by chance or through timely intervention.
- **Adverse event** which is an injury/harm caused by medical management or complication thereof, instead of the underlying disease. It results in an increase in the level of care and/or prolonged hospitalisation and/or disability at the time of discharge. Medical management refers to management under health care services.
- **Sentinel event** which refers to unexpected occurrences involving death or serious physical or psychological injury, or risk thereof.³¹

Clinical Incident Management (CIM) – the process of effectively managing clinical incidents with a view to minimising preventable harm.³²

Clinical Incident Management System (CIMS) – a database system developed for collecting and analysing information on clinical incidents. It covers voluntary reporting, investigating, analysing and monitoring of clinical incidents.

Co-morbidities – the presence of one or more disorders (or diseases) in addition to a primary disorder or disease.

Contributory factor – a factor that contributes to the occurrence of a clinical incident.

Embolism – a plug that occludes a vessel. Could be composed of a thrombus, vegetation, mass of bacteria or some other foreign body.³⁰

Encephalopathy – any disorder of the brain.³⁰

Haematoma – a localised mass of extravasated blood confined within an organ/tissue.³⁰

Hydrocephalus – is ventricular enlargement with excessive cerebrospinal fluid.³⁰

Hypoglycaemic – refers to low blood glucose levels.³⁰

Hypovolaemia – refers to a decreased amount of blood in the body.³⁰

Hypoxia – refers to below normal levels of oxygen in inspired gases, arterial blood or tissues.³⁰

³⁰ Stedman, T., Stedman's Medical Dictionary. 27th Edition. (1999). Lippincott Williams & Wilkins.

³¹ World Health Organisation. Conceptual Framework for the International Classification for Patient Safety. Technical Report. Version 1.1, January 2009.

³² Queensland Health. Clinical Incident Management Implementation Standards (CIMIS). Reform and Development Division., Editor: Queensland Government, 2008.

Increased length of stay – a situation whereby a patient has to stay longer in hospital than would normally be expected.

Injury – in the context of CIM includes burns, injury due to an impact or collision, pressure injuries, injury of unknown origin, unintended injury during a procedure or treatment, or other injuries not classifiable in the previous categories.

Ischaemia – local anaemia due to a mechanical obstruction of the blood supply.³⁰

Ligature – refers to a thread, wire or similar that is tied around a blood vessel to constrict the flow of blood.³⁰

Myocarditis – inflammation of the muscular walls of the heart.³⁰

Root Cause Analysis (RCA) – a systematic investigative technique aimed at identifying root causes/contributory factors of problems, events or clinical incidents.

Septicaemia – systemic disease caused by the spread of micro-organisms and their toxins within the blood.³⁰

Severity Assessment Code (SAC) – is the assessment of consequences associated with a clinical incident. The SAC rating (1, 2 or 3) is used to determine the appropriate level of analysis, action and escalation.

- SAC 1 includes all clinical incidents/near misses where serious harm or death is/could be specifically caused by health care rather than the patient's underlying condition or illness. In WA, SAC 1 also includes the eight nationally endorsed sentinel event categories.
- SAC 2 includes all clinical incidents/near misses where moderate harm is/could be specifically caused by health care rather than the patient's underlying condition or illness.
- SAC 3 includes all clinical incidents/near misses where minimal or no harm is/could be specifically caused by health care rather than the patient's underlying condition or illness.

Sentinel event – refers to unexpected occurrences involving death or serious physical or psychological injury/harm or risk thereof. There are eight nationally endorsed sentinel event categories, endorsed by Australian Health Ministers in 2004 (see Appendix one for a list of the eight sentinel events).

Separation – The process by which an episode of care for an admitted patient ceases. Separation is synonymous with discharge.³³

Thrombosis – clotting within a blood vessel which may cause infarction of tissues supplied by the vessel.³⁰

³³ Department of Health, Western Australia. Admissions, Readmissions, Discharges and Transfers Policy for WA Health Services. Perth: Performance Activity and Quality Division, Department of Health, Western Australia, 2013 Draft.

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