Auckland District Health Board Summary
1 July 2013 to 30 June 2014
Serious Adverse Events

There were 82 serious adverse events (including 37 falls with serious harm) reported by ADHB in the July 2013 to June 2014 year.

Adverse events identified as serious receive an in-depth investigation by a team of clinicians and quality department staff who are independent from the event. The reports are reviewed by a committee of senior management and senior clinical staff for robustness and for issues which may need to be addressed at an organisational level. The recommendations from the reports are tracked to ensure that follow-up and implementation occurs.

The table and report below outlines a summary of events, findings and recommendations of the events which have occurred. The events have been classified into eight specific themes:

- Delay in escalation of treatment
- Wrong or unnecessary procedure
- Patient misidentification
- Procedural injury
- Medication error
- Delay/failure in follow up or treatment
- Pressure injuries
- Falls
- Other

Description of Event	Review Findings	Recommendations/Actions
Delay in escalation of treatment		
Delay in recognition of clinical deterioration associated with post-operative myocardial ischaemia.	Review in progress	Review in progress
High-risk patient with abnormal kidney function developed post-operative over-sedation requiring ventilator support in intensive care.	Kidney function deteriorated due to postoperative hypovolaemia and effects of a non-steroidal anti-inflammatory pain relief Oral morphine was inadvertently given due to mis-understanding of pre-printed post-operative pain relief stickers Inadequate frequency of post-operative vital sign recordings Delay in recognition of developing coma	Review of pre-printed stickers. Update for all staff on front page of national medication chart. Review policy of frequency of vital signs observations. On-going training on use of Early Warning Score.
Patient with developing severe infection did not have care escalated when criteria for medical emergency team review were met. Delayed admission to intensive care.	Emergency team not called by medical direction Lack of awareness of “Code Red” criteria Review not yet completed	Review not yet completed
Delay in identifying and acting on post-operative high blood pressure. Fatal intracerebral haemorrhage the following day.	Review in progress	Review in progress
Post-operative intra-abdominal bleeding 10 days after complex surgery. CT scan did not identify active bleeding, but bleeding recurred several hours later leading to	Missed opportunity to undertake angiography between initial smaller bleed and later major bleeding. Inconsistent process for escalation to primary surgeon	Clearer expectations and support for communication with primary surgeon after hours Review high dependency unit capacity and

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cardiac arrest and eventual fatal outcome.	Transfer to high dependency unit may have led to earlier treatment escalation	indications for transfer of high-risk patients from ward
Significant changes in blood pressure and heart rate over a period of time not addressed, leading to unplanned ICU admission.	Technical difficulties obtaining blood pressure Review not yet completed	Review not yet completed
Wrong or unnecessary procedure		
Patient administered packed red cell transfusion, instead of the prescribed platelets. No patient harm.	No standardised method/process for requesting blood components Lack of knowledge of and experience with blood components Failure to acknowledge patient's concerns regarding incorrect blood component	Revised requesting form/process for blood components Increased education and training on blood components Photographs of all blood components available on ward
Patient administered general anaesthesia when the procedure was planned to be done under local anaesthesia with sedation.	Late addition to operating list Communication process failed to transfer local anaesthesia plan, and general anaesthesia was assumed due to patient age	Review not yet completed
Bone marrow transplant performed in the belief it was between non-identical twins, but found later to be identical twins, increasing the risk of cancer relapse.	Review in progress	

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Patient incorrectly had a lumbar puncture booked and subsequently performed. No adverse outcome.	Patient was expecting "some tests" and was unaware a lumbar puncture was not required Staff incorrectly scheduled lumbar puncture due to heavy workload and distractions Staff involved did not review notes to confirm indication for procedure	Use formal consent written consent forms for lumbar punctures Re-organise scheduler workflow to allow uninterrupted appointment scheduling Revise medical staff orientation to emphasise need for confirmation of procedural indication
Request to cancel a previously booked kidney biopsy was not actioned and patient had an unnecessary biopsy without complication.	Lack of visibility of cancellation order in the ordering system. No visibility of appointments already logged	Implement system allowing electronic cancelling Allowing cancellations visible to an ordering clinician Update system to allow clinicians to view outstanding orders
Patient mis-identification		
Patient taken to incorrect operating room and anaesthetised for hernia surgery. Error was detected prior to start of surgery, and correct dental surgery was performed in that operating room.	Incorrect printed operating list placed beside patient notes 'Sign in' checks not completed correctly	Change to electronic operating list Establish clear standards for patient identification such as open-ended questions
Incorrect patient taken from ward and a contrast CT scan performed	Orderly collected correct patient notes but went to the wrong room No 'handover' of patient from ward nursing staff to orderly Radiology staff did not check patient ID against notes or CT order	Alter process for patient transit scheduling Establish "positive ID" processes in each imaging modality area, using education, visual aids and regular audits

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Renal biopsy ordered and performed on incorrect patient	Incorrect patient selected by doctor from electronic clinic list to create a renal biopsy order intended for the prior patient on the list Both patients had a similar history and the error was not detected prior to procedure	Recommendations under review
Another patient's prescription accidently given to patient by hospital retail pharmacist. Error not detected by patient or community pharmacist. Incorrect medication taken for a week with no harm.	Review in progress	Review in progress
Incorrect patient taken into operating room but error detected prior to any intervention	Review in progress	Review in progress
Procedural injury		
Retained surgical swab found in vagina three weeks after gynaecological procedure	No formal policy for who is allocated responsibility for swab count. Use of small swabs	Improve procedure for opening of additional countable objects Second and final check of swabs when procedure complete Consider not using small swabs in gynaecological procedures
Vaginal swab left in after repair of vaginal tear occurring during delivery. Passed five days later.	Small swabs available Variance in practice for commencement of count when no skin closure involved.	Remove all small swabs from OR Allocate responsibility for counting swabs Review and update handover form

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Vaginal foreign body found 3 months after cervical procedure	Unable to determine origin of retained vaginal material. No swabs used in procedure	No recommendations
Vaginal swab left after suturing perineum following delivery. Passed the following day at home.	Large and small swabs available in delivery packs	Only large swabs to be provided in delivery packs
Excised appendix left in abdomen after laparoscopic surgery completed. Required additional anaesthesia and operation to remove.	No visible reminder of retained bag Disposable items not included in surgical count “Sign out” process not completed	Use artery clip to hold string as reminder of retained bag Count policy to be clear that all items used in body cavities to be included in count Further development of use surgical safety checklist: specific time for “sign out”, further training and regular independent audit of performance and engagement
Attempted insertion of cardiac support device via femoral artery was complicated by loss of blood flow to the leg eventually requiring amputation.	Increased risk of this complication due to severe arterial disease Review not yet completed	Review not yet completed
Cardiac arrest of patient following removal of central venous line with fatal outcome.	Cause of collapse uncertain Patient was at increased risk of air embolism due to previous chest surgery and long term central venous line Potential for air embolism was not considered during removal or resuscitation	Central venous line guidelines and teaching to include risk factors for air embolism, and greater detail on techniques for safe removal Clinical pathway to emphasise regular review of need for central venous line

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Stroke occurring at the end of dialysis due to air entering the cerebral circulation	Found to have a cardiac defect making it possible for air to enter the arterial system No abnormality in dialysis process or machine found on review.	No recommendations.
Pulmonary aspiration during attempted placement of a nasogastric tube to treat bowel distension. Fatal outcome.	High risk patient with multiple significant co-morbidities Unclear escalation pathway for difficult tube placement with 2 teams involved in care Use of local anaesthesia and combined effects of sedative and anti-nausea drugs made aspiration more likely	Directorates to ensure that there is clear documentation of who primary team is for all patients to facilitate timely escalation Revise post-operative anti-nausea prescription sticker to modify cyclizine dose range and highlight risk of sedative effects Revise sedation policy
Fatal cardiac arrest after CT scan for complex congenital heart disease	High risk for anaesthesia due to severity of heart disease Poor communication between two clinical services led to a standard rather than high-risk technique being used	Guideline for the management of high risk paediatric patients for investigations under general anaesthesia including more specific information on booking form and direct communication between specialists
Medication error		
Ten-fold overdose of heparin given during surgical procedure. Required postoperative reversal treatment and blood transfusion	Multiple concentrations and volumes of heparin available. Anaesthetist unfamiliar with the 25,000U/5ml format	Standardise heparin to 5000U/1ml in all operating rooms in Auckland region (25,000U/5ml in cardiac ORs)
Medications required at time of birthing of mother with heart disease were given in wrong order causing very slow fetal heart rate. Following rapid assisted delivery, the	Medications were drawn up well before being required Syringes not labelled	Medications to be drawn up immediately prior to administration If pre-drawn up medications are required in

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baby had some abnormal neurological findings requiring cooling but these resolved and subsequent brain scans were normal.	Possible distraction related to number of people present	exceptional circumstances, they must be labelled.
Polyhexamethylene biguanide administered topically into the thoracic cavity during surgery to reduce risk of fungal infection causing major systemic reaction. Death 9 days following event.	"Off-label" use of product Relationship to death uncertain Review not yet completed	Review not yet completed
Delay/failure in follow up or treatment		
Woman noted to have neck lump in late pregnancy. Needle biopsy performed at time of Caesarean section, but result ("inadequate specimen") was not acted on. Re-presented with advanced cancer 6 years later.	Poor documentation and communication about non-obstetric issues. Weak systems for electronic 'sign-off' off results	Highlight non-obstetric issues in new electronic record system Revised process for results sign-off to ensure prompt review and action
Deteriorating patient reviewed on ward and planned for transfer to high dependency care. No intensive care or high dependency bed immediately available. Patient suffered cardiac arrest and died before transfer.	Review in progress	Review in progress
Routine chest x-ray ordered by admitting team showed unexpected finding of interstitial lung disease. The report was signed off without action as patient had transferred early to a second service who did not review admitting test results. Diagnosis and treatment was delayed for 1 year.	Review in progress	Review in progress

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Delayed diagnosis of meningitis in a patient presenting with neck pain. Fulminant course and death the following day.	Unusual clinical presentation Uncertain if earlier antibiotic treatment would have altered outcome. Handover issues between emergency department and inpatient team	Review not yet completed
Delayed diagnosis of abnormal placenta leading to incomplete removal after birthing and subsequent severe infection	Review in progress	Review in progress
Pressure injuries		
Grade 3 pressure ulcer on left heel developed whist an inpatient on medical ward.	Review in progress	Review in progress
Following severe traumatic brain injury, patient developed a Grade III pressure injury on the left occiput.	Initial and on-going risk assessment not completed although reference to pressure area cares was documented in the patient clinical notes	Implement standardised paediatric risk assessment tool and audit use of the tool Education of staff around paediatric risk assessment for pressure injury
Grade 1 pressure area on sacrum on admission progressed to grade 3 during admission.	Inaccurate and inconsistent pressure injury assessment, care planning, handover and escalation. Difficulty procuring correct equipment.	Add pressure injury assessments to daily meeting Clarify actions expected of nursing staff re PI risk, management and escalation criteria
Extremely sick child developed Grade 3 pressure injury during prolonged illness in ICU and ward	Multiple high-risk patient factors Poor pressure injury risk assessment, documentation and handover	Child health Pressure Injury Steering Group to develop guideline, risk assessment tool and education/training programme

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Patient acquired a Grade 3 pressure Injury during inpatient stay	Patient with multiple risk factors. Incomplete pressure area risk assessment. Insufficient handover between departments	Review not yet completed
Grade 3 hospital acquired pressure injury	High-risk clinical factors Lack of PI assessment and care plan Poor communication within interdisciplinary team	Clarify accountabilities Staff coaching and audit
Other		
Pre-operative localisation of breast abnormality did not identify the correct position of tumour, requiring repeat procedure.	Review in progress	Review in progress
Suicide attempt in medical ward	Previous history of self-harm Increasing suicide risk identified by community team members was not communicated to inpatient staff	Clarify pathway and responsibilities when patient move between community and inpatient services “Sticker” to facilitate community staff notes in clinical records
Sperm in long-term storage incorrectly disposed of due to mis-reading of client response form.	New legislative process for disposal of stored fertility samples Lack of a structured approach to risk assessment and management with the introduction of a new process	Revise system (procedure, admin, software, storage, tracking, security, responsibilities, validation, and feedback) based on risk management approach.
Patient recovering from traumatic brain injury left hospital on own accord and was found dead in community	Review in progress	Review in progress

Description of Event	Review Findings	Recommendations/Actions
Newborn baby due to be placed into CYFS care was removed by mother requiring police intervention.	Review in progress	Review in progress

Inpatient Falls

Any patient who dies, or sustains a serious head injury, fracture, or laceration requiring suturing from a fall while in hospital or attending a clinic is considered to have had a serious harm fall.

Thirty-seven patients had falls with serious harm in 2013-2014. One patient died as a consequence of the fall, 23 patients suffered fractures, five patients suffered serious head injuries, seven patients suffered lacerations that required suturing, and one patient suffered a rotator cuff injury. The 23 patients who fell sustained a wide variety of fractures (nose, rib, wrist, upper arm, pubic rami and lower limb). Eight patients suffered neck of femur fractures (compared with six in 2012-2013). The total number of patients with serious harm after a fall in hospital is the higher than that reported in 2012-2013 (37 versus 33), although the number of patients that sustained fractures was lower (23 versus 29).

ADHB has a reporting system for patient injuries, but does not rely solely on clinical areas self-reporting serious harm falls. We triangulate these reports with a coding query and we continue to identify serious harm falls that would otherwise have been missed. We believe that such accuracy and transparency is necessary if ADHB is to learn from adverse events.

Most falls occurred within the hospital, but two falls occurred outside the main entrance of the Support Building at Auckland City Hospital. One of these falls was associated with slipping on the wet surface. Anti-slip surfacing has now been applied to entrances at both Auckland City Hospital and Greenlane Clinical Centre.

A multidisciplinary falls and pressure injury steering group oversees improvement work and has been in place for three years. In 2012-2013 serious harm falls associated with [1] wearing socks and [2] climbing over or around bedrails were highlighted. As a consequence ADHB:

- Started use of “sticky sox” in hospital - red socks with a grip sole that were made available to patients from December 2013. There have been no serious harm falls associated with socks since then.
- Started use of bedrail decision matrix in Auckland City Hospital – this tool helps staff decide when it is safe to use bedrails on patients and has been available since April 2014. There have been no serious harm falls over bedrails since then.

Until July 2014, case review for each serious harm fall was undertaken by a charge health professional where the fall occurred. However, serious harm falls in

each clinical area are a rare event for that area and reviewing each serious harm fall in isolation meant that clinical areas struggled to identify lessons. As a consequence ADHB has revised how serious harm falls are reviewed. Each fall is now:

- Reviewed by a local multidisciplinary team of health professionals
- Analysis uses the human factors methods outlined by the Health Quality and Safety Commission
- The review is presented to a subcommittee of the Adverse Events Review Committee
- Recommendations focus on systems improvements

Analysis of the serious harm falls at ADHB in 2013-2014 suggests the following issues are targets for attention:

- Reliability of falls risk assessment and care planning as patient condition changes
- Reliability of inter-disciplinary communication.

A concept ward was launched in September 2014 in an Older Peoples Health ward at ADHB. The purpose of the concept ward is to test new initiatives to prevent falls. The ward is one that had a cluster of serious harm falls in 2012-2013. Serious harm falls are now less frequent in the concept ward and an important lesson has been the need for a multidisciplinary approach. Initiatives being tested include:

- Agreed definitions between disciplines as to the meaning of independence, supervision, and assistance with mobility
- Use of coloured patient wrist-bands that reflect mobility need (green = independent, orange = supervision, red = assistance)
- Use of standard definitions of toileting attendance to ensure that patients are safe in the toilet no matter what their level of attendance need.
- Use of a hospital alert and MDT review and planning after any fall
- Blue & white signage over bathrooms and toilets
- Blue toilet seats
- Bed sensor alarms