Auckland District Health Board Summary

1 July 2018 to 30 June 2019

Serious Adverse Events

Auckland DHB has reported 59 adverse events (including 29 falls with serious harm and 13 serious pressure injuries and excluding Mental Health adverse events) to the Health Quality and Safety Commission (HQSC) for the year 1 July 2018 to 30 June 2019.

Adverse events identified as serious receive an in-depth review by a team of clinical and clinical quality and safety service staff who are independent from the event. The review reports are assessed by a committee of senior management and senior clinical staff to ensure they are robust and that issues which may need to be addressed at an organisational level are identified. 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 related to the events which have occurred. The events have been classified into five specific themes:

- Delay to recognition and/or treatment
- Medication error
- Procedural injury and Other clinical incident
- Falls
- Pressure injuries

Delay in recognition and /or treatment

Confirmed description for report	Findings	Recommendations/Actions
Delay in recognition of deteriorating respiratory patient.	Modifications of the National Early Warning Score triggers during an acute phase of illness meant that there was a delay in recognising a deteriorating patient with increased nursing observations and mandatory patient at risk and senior medical review was not reached.	1. All modifications to Early Warning Score (EWS) triggers must be discussed with a Senior Medical Officer and communicated to ward staff on the Respiratory ward.

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	Not having the opportunity to develop an Advanced Care Plan meant that the family lacked awareness of the long-term outlook. Oxygen therapy was not charted on the medications chart which meant that increasing oxygen requirements were unrecognised and led to a loss of opportunity to escalate the patients care via the early warning score or the oxygen charting section of the medication chart. The lack of a comprehensive system to record vital signs in real time meant that an emerging clinical picture was not recorded which led to missed opportunities to escalate care.	2. Undertake a hospital wide of modifications to EWS triggers to determine frequency and appropriateness of modifications. 3. All patients with chronic Respiratory disease must have an Advance Care Plan established with their family/whānau in the Respiratory Outpatient Clinic on diagnosis. 4. Explore the feasibility of prescribing Oxygen Therapy with Regular Medications including a mechanism to chart high flow oxygen flows and rate. 5. Rename the "Oxygen Weaning Chart" to the "Respiratory Oxygen Chart" and include a field for the documentation of FiO2 and flow. 6. Assess the barriers to point of care documentation on the ward
Delay in recognition and treatment of septic shock.	Review in progress.	Review in progress.
Delay in treatment of a deteriorating airway in a submandibular abscess.	Review in progress	Review in progress.
Delay in recognition and treatment of cardiogenic	Review in progress.	Review in progress.

Confirmed description for report	Findings	Recommendations/Actions
shock.		
Delay to follow up care resulting in poor kidney function.	There was a missed opportunity to review abnormal kidney function tests at an annual follow-up in an outpatient clinic which also led to a delay in treatment. Several different services/specialists provided care to the patient between December 2017 (diagnosis of obstructing ureteric stone) and its removal (in January 2019) during which time the kidney function was abnormal. If the abnormal kidney function test results were followed up by the requesting clinician the length of time to treat the obstructing ureteric stone may have been less.	a) Include Auckland regional guidelines on treatment and follow-up of obstructing kidney stones in the education / orientation package for urology junior doctors. b) Implement a process whereby urology registrars make a reference to Auckland regional guidelines when providing advice over phone or through other ways of correspondence. c) Ensure that the actions stated in the Resident Medical Officer Handbook and the local processes and forms are aligned. 2. Review the sign-off process for the lab results including auto sign off.
Delay in diagnosis of obstructive uropathy resulting in a kidney removal.	The significant decline in kidney function within the first year after bone marrow transplant was considered to be related to the medications being given as part of treatment. There was no process in place to accurately measure the decline in kidney function. In addition, there was no agreed cut off level of kidney function to trigger further investigations or the type of tests that would be required.	1. Develop and implement a process that ensures the baseline kidney function is calculated prior to the commencement of transplant treatment and at all post-transplant visits, and is recorded in the bone marrow transplant patient summary. 2. Develop and implement a process to further investigate if kidney function falls to 50% of baseline value with urine for protein-creatinine ratio and haematuria and renal ultrasound.

Medication incident

Confirmed description for report	Findings	Recommendations/Actions
Medication prescription and dispensing error resulting increased hospital length of stay.	Review in progress.	Review in progress.
Brain damage resulting from low oxygen level	Review in progress	Review in progress

Procedural Injury and other clinical incident

Confirmed description for report	Findings	Recommendations/Actions
Delay in recognition of abnormal ultrasound scan result.	Review in progress.	Review in progress.
Vascular injury following a neck biopsy.	1. There is no formal referral process from external providers to ADHB for ear nose and throat clinic procedures which meant that the referral was triaged to a fellow in the ear nose and throat clinic.	1. Review mechanisms to recognise training and core procedural competencies across all specialties (including for locums). 2. Consider development of guidelines for acute Pre-

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	2. No formal training pathway for ear nose and throat surgeons in ultrasound guided core needle biopsies, which are performed infrequently, meant there was less than optimal technical expertise in undertaking the core needle biopsy. 3. Lack of effective pre-operative planning for resultant acute surgery contributed to a further vascular injury resulting in uncontrolled bleeding. 4. Clinic staff familiarity with emergency procedures and emergency equipment led to a delay in securing the patients airway. 5. There is no signage for the ear nose and throat clinic except inside the clinic.	operative planning and when to involve other specialities. 3. Familiarisation of nursing staff with: Emergency equipment, Procedures for calling a Code, Emergency procedures 4. Individual signage for all clinics in the outpatient department.
Necrosis of foot tissue following an insertion of a femoral arterial line.	1. Communication and planning about the need for intraoperative monitoring and line placement and management not formalised between teams (Neonatal Intensive Care Unit – NICU/Surgery/Anaesthesia). 2. Placement of a femoral (proximal) arterial line, because radial (peripheral) arterial line placement was not possible, may have contributed to reduced blood flow to the limb 3. Arterial line locked off for transfer from the operating room to the neonatal intensive care unit due to non-compatible monitoring systems, potentially increasing risk of clot formation.	1. Pre-operative multidisciplinary team (anaesthetist, neonatologist, and surgeon) discussion and decision-making about the need for invasive intraoperative monitoring in level 3 babies less than 1 kg needing to go to the operating room. 2. If invasive intraoperative monitoring is required, pre-operative MDT (neonatologist, anaesthetist and surgeon) discussion and decision making about site selection should a proximal arterial line be required. 3. Assess current transducer sets used in theatre

Confirmed description for report	Findings	Recommendations/Actions
	4. No standardised direct handover between anaesthetist and neonatologist after surgical procedures were performed in the operating room. 5. Usual methods for management of poor blood flow to the limb associated with arterial lines did not improve the blood supply to the affected leg.	and NICU, and determine if they can be standardised. 4. If the monitoring can be standardised, determine which transducer sets will be used in theatre and NICU, and implement. If the transducers cannot be standardised, develop processes to ensure lines have fluid running through them on transport between OR and NICU. 5. Standardise postoperative handover from the operating room to NICU to include discussion and decision-making about whether to leave or remove vascular access in place for transport back to NICU (as well as ventilation and blood pressure medication requirements etc.), and update guideline accordingly. 6. Update NICU guideline on Peripheral Arterial Lines to include management of arterial line complications including ischaemic limbs, and the consideration of all possible management options for ischaemic limbs as reported in the international literature.

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Hypoxic brain injury during ECMO modality.	Review in progress.	Review in progress.
Cardiac arrest during coronary angiography.	The review team is unable to categorically state the exact cause of the adverse event. 1. The most likely explanation was that air was inadvertently injected into the left coronary, although the first angiographic image did not show the usual features of intra-coronary air injection. Radiology images show slow flow down the left anterior descending artery at the first injection. 2. Although individual interventionists do have slightly different de-airing techniques, the guiding principles for avoiding air in the system are well understood by all of the Catheter Lab team and adequate de-airing should be a joint responsibility. Introduction of micro-bubbles whilst injecting is an ever present risk and not one that can be completely avoided. These micro-bubbles can, in certain individuals, lead to transient coronary spasm or dysrhythmia, despite normal coronaries. 3. Although not completely excluded, there was no evidence of product failure. The equipment used during the procedure was discarded.	1. Education of all staff in the cardiac investigation unit and encouragement to report unexpected and unexplained cardiac arrest requiring CPR via the internal incident monitoring system. 2. Education of staff that if an unexpected serious patient safety event occurs in the CIU all disposable products used for the procedure is to be retained for examination.

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Death following cardiac surgery.	1. Currently target monitoring parameters are not established and communicated at the beginning of surgery. 2. Lack of closed loop communication regarding the monitoring parameters at: a) start of surgery; b) when fluid level was high during surgery c) when anaesthetist left theatre. 3. Team did not recognise when monitoring parameters fell outside the agreed limits. 4. Drugs administered by perfusionist and anaesthetist are recorded on different charts. 5. Anaesthetist left theatre once the patient was placed onto cardiopulmonary bypass as per usual practice.	1. During timeout the target parameters for bypass are discussed and established. 2. The document 'Communication Guidelines in Paediatric OR' is updated, distributed, discussed and implemented by all cardiac anaesthetists, surgeons, perfusionists and nursing staff. 3. When monitoring parameters fall outside the agreed limits all members (anaesthetist, surgeon and perfusionist) are involved in determining the appropriate response. 4. Review drug standing orders administered by perfusionists.
Vascular injury during a tracheostomy.	Review in progress.	Review in progress.
Reduction in vision following a procedure	Review in progress	Review in progress

Confirmed description for report	Findings	Recommendations/Actions
Drop in baby's heart rate resulting in an emergency caesarean section	Review in progress	Review in progress

Patient falls

Any patient who falls while they are in hospital or who is attending a hospital clinic and sustains a serious head injury, a fracture, any other injury requiring extended intervention or dies due to their fall is considered to have had a serious harm fall at Auckland District Health Board.

Twenty-nine patients had falls with serious harm in the year July 1 2018 to June 30 2019, compared with 34 in FY2017. The median age of the patients with a serious harm falls was 78 years (range 29 to 94 years). Most patients who fell were New Zealand or Other European (79%), while 3% were Māori or Pasifika, and 14% were an Asian ethnicity. Four patients (14%) suffered a new or an extension of an existing head injury after falling, while 23 patients (79%) suffered a fracture and 2 patients (7%) sustained other types of injury (e.g. wound dehiscence requiring operative repair). The 23 patients with fractures sustained a variety of fractures (1 facial, 3 upper limb, 6 pelvic or vertebral, and 13 lower limb fractures). 9 of the lower limb fractures were neck of femur fractures.

There has been a reduction in the total number of patients with serious harm after a fall in ADHB facilities over time (34 in FY2017, 34 in FY2016, 42 in FY2015, 57 in FY2014). 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 in this way we identify serious harm falls that would otherwise have been missed. It is notable that we are identifying fewer falls each year by this method, such that we are considering whether it is still necessary to continue with triangulation.

For each serious harm fall, a multidisciplinary team investigates and reports on their findings to a sub-committee of the Adverse Events Review Committee, an approach that focuses on understanding what systems failures may have contributed to a fall. Notably issues that were identified from 6 serious harm falls in our psychogeriatric unit in FY2017 appear to have since prevented serious harm falls in the area.

We have also been working to revise the way in which we assess and plan care for patients regarding falls. We have previously developed an assessment and care planning tool that uses the Health Quality & Safety Commission's Ask, Assess, Act strategy. This approach moved to assessing patient needs, rather than their risk, and then planning to address their individual needs. This tool was rolled out to the adult hospital in 2017 and further work has resulted in a new iteration being piloted in June 2019 with roll out for later in the year.

Pressure injuries

Serious harm pressure injuries (Stage 3 or Stage 4 facility-acquired pressure injuries) are undesirable events that increase patient discomfort, length of stay, and treatment. Mostly, pressure injuries are avoidable, although sometimes patients can be so unwell that pressure injuries occur despite preventive efforts.

We identify patients with such harms through our patient injury reporting system and a coding query we run each month. Thirteen patients developed serious harm pressure injuries in 2018-2019, 10 while in an Auckland DHB facility and 3 in the community under our care. The median age of patients with a serious harm pressure injury was 53 years (minimum 1 month, maximum 91 years). Five of the pressure injuries (38%) occurred in NZ and Other European patients, 2 (15%) in Māori patients, 4 (31%) in Pasifika patients, and 2 (15%) in Asian patients. Five pressure injuries (38%) occurred in patients in surgical services, 3 (23%) in cardiovascular services, 3 (23%) in Child Health, 1 (8%) in Adult Medical and 1 (8%) in Adult Community.

Two of the Child Health patients suffered pressure injuries as a consequence of a plaster cast applied by our services. We now have an ACC-funded project underway to address issues regarding application of plaster casts. We also have another ACC-funded project to investigate the prevalence of pressure injuries in our adult community patients.

Critically ill patients are especially vulnerable to pressure injuries and we investigate each serious harm pressure injury to identify systems issues that we can address as an organisation. We have revised our approach to pressure injuries, moving from a risk-based approach to a needs-based approach. We expect our investigations will help refine this change in approach to caring for vulnerable patients.

Although ADHB has long been internally monitoring our own performance on pressure, we have also started contributing data to HQSC on pressure injury quality and safety markers (https://www.hqsc.govt.nz/our-programmes/health-quality-evaluation/projects/quality-and-safety-markers/qsms-april-june-2019/#[PRESSUREINJURY]). ADHB demonstrates a very low prevalence rate for hospital-acquired pressure injuries reflecting the sustained focus ADHB has had on reducing hospital-acquired pressure injuries since 2011.