QPQC
Queensland Paediatric Quality Council

Multi-incident Analysis of SAC 1 Paediatric Clinical Incidents 2012-2014

Queensland State Summary Report

Prepared in July 2018

Multi-incident analyses can bring together important themes and lessons learned from individual Root Cause Analyses that are relevant broadly across hospitals and health services. The Queensland Paediatric Quality Council (QPQC)[1] Clinical Incident Subcommittee undertook a statewide multi-incident analysis of SAC1 paediatric clinical incidents for 2012-2014, supported by a funding grant from the Health Improvement Unit (HIU) in 2015. A multi-incident analysis tool was developed to identify demographic, facility, human and system factors associated with the event. This was adapted from the New South Wales Clinical Excellence Commissions "Clinical Management – Child and Young person RCA Review Committee Taxonomy Dictionary" and existing Queensland Health tools. An expert panel was convened to review and analyse each case, and groups of similar cases. Discussion points and conclusions were documented. This report summarises the findings of this review.

Clinical Incident Profile

Using Patient Safety and Quality Improvement Service (PSQIS) data, there were a total of 67 paediatric clinical incidents in 2012-2014 that were confirmed as Severity Assessment Code (SAC) One events (causing permanent harm or death). The reports of the local reviews of 51 of these incidents were requested from the commissioning Hospital and Health Service (HHS).

Incidents involved males (55%) and females (45%) almost equally. Younger children 0-4 years of age were overrepresented, involved in 47% of the incidents analysed, despite comprising only 25% of Queensland's child population (0-19 years)[2]. Similarly, 14% of incidents involved children from Aboriginal and Torres Strait Islander backgrounds, two times higher than the population estimates of Aboriginal and Torres Strait Islander children aged 0-19 years living in Queensland (7%)[3].

Geographical distribution is shown by the Australian Statistical Geography Standard Remoteness Structure (ASGS) in Figure 1, and by HHS in Figure 2. Using the ASGS, 41% of incidents occurred in Outer Regional, Remote and Very Remote Australia, almost two and a half times higher than population estimates in these areas (18%).

Figure 1. Clinical Incidents by ASGS Remoteness

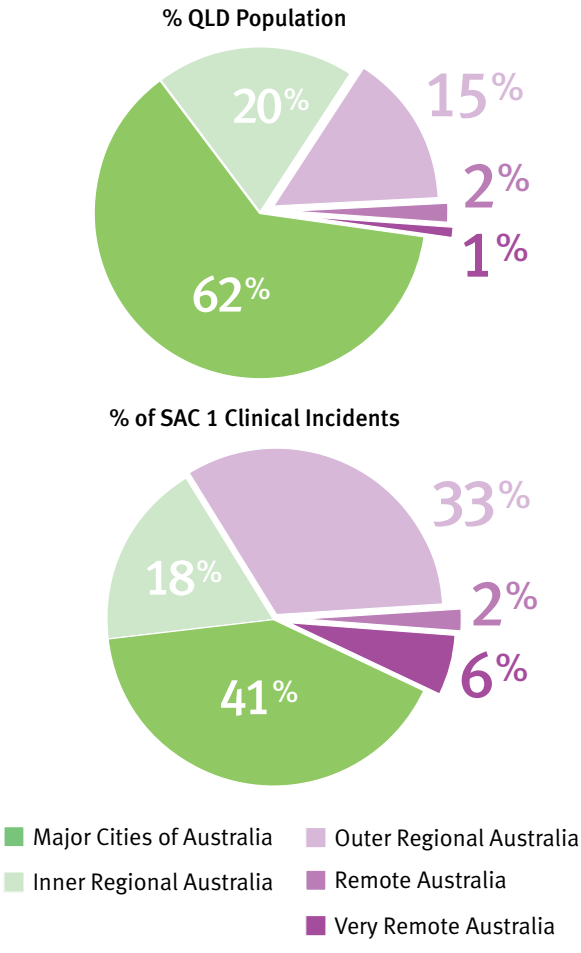
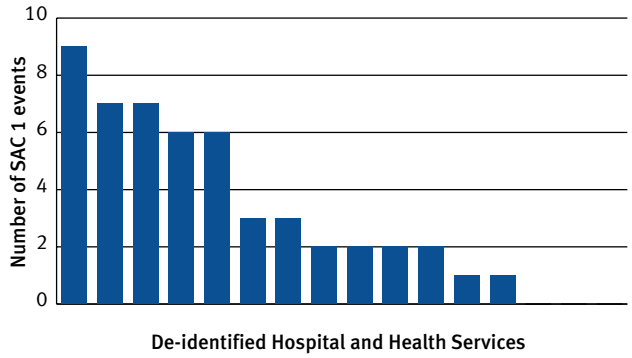


Figure 2. HHS distribution of incidents



82% (42/51) of incidents had a full Root Cause Analysis (RCA) undertaken. The frequency of incidents reported increased over time; 24% occurred in 2012, 33% in 2013 and 43% in 2014. Documented patient outcomes included death (43%) and likely permanent harm (57%). Incident type was classified by a single category which most characterized the event.

- Failure or Delay to Recognize or Respond to the Deteriorating Paediatric Patient (22%) *(also a contributory factor in a further 39% of cases)*
- Diagnostic error or delay (22%) *(also a contributory factor in a further 39% of cases)*
- Escalation failure or delay (22%) *(also a contributory factor in a further 55% of cases)*
- Procedural adverse event (22%) *(includes "Patient Identification -procedure mis-matching")*
- Unanticipated death/event following hospital presentation or admission (6%)
- Medication adverse events (6%) *(includes intravenous fluids or enteral feed events)*

Statewide Clusters and Themes

Diagnostic clusters were identified in the multi-incident analysis: these included testicular torsion (12%), sepsis (24%), wrong site–wrong surgery procedures on teeth (8%), and retrieval / transfer related (18%). Mental health incidents (n=8) were not included in the 51 incidents that QPQC analysed; these were brought to the attention of the Child and Youth Mental Health Service in March 2017. The QPQC has since contributed to a multi-incident analysis of suspected suicides currently being undertaken by the Mental Health Alcohol and Other Drugs Branch.

Testicular Torsion: The analysis of 6 testicular torsion cases was broadened to include all SAC 1 paediatric cases from 2010 – 2015 (total = 8 cases). Key themes/lessons learnt were identified and outlined in a joint QPQC and PSQIS Patient Safety Communique in April 2017[4], which was endorsed by Royal Australasian College of Surgeons. Key lessons have been referenced in a publication written by two Children's Health Queensland (CHQ) paediatric surgeons, and CHQ has developed an Acute Scrotal Pain guideline.

Paediatric Sepsis: 12 cases.

Key themes/lessons learnt were identified relating to the early diagnosis of sepsis, listening to patients and carers concerns, communication and escalation failures, problems with the use of Early Warning Tools, and lack of a sepsis pathway. QPQC presented these themes at the Statewide Paediatric Sepsis Forum in August 2017 and to the Paediatric Sepsis Pathway Working Group in November 2017 and continues to work in partnership with this working group. A summary of the key themes has been shared with HHSs through our new QPQC newsletter Paediatric Matters[5].

Wrong Site Dental Procedures: ‹ 5 cases.

The QPQC analysis of wrong site dental procedures identified common themes related to the implementation of the 3 Cs (checks) procedure, and with staff supervision, expertise and policies. The QPQC brought this to the attention of the Oral Health Services in June 2017 for consideration in a larger analysis by Oral Health of dental health clinical incidents.

Retrieval / Transfer: 9 cases.

The QPQC is working closely with the Paediatric Patient Safety Project (PPSP) to identify themes and lessons learnt from clinical incidents involving the retrieval of critically ill children (n=8). A special themed meeting was held in April 2018 involving members of the QPQC, Retrieval Services Queensland and PPSP. A summary of key themes/lessons learnt was presented to PPSP on 22 May 2018 and the findings will be incorporated into the final report and recommendations of this initiative.

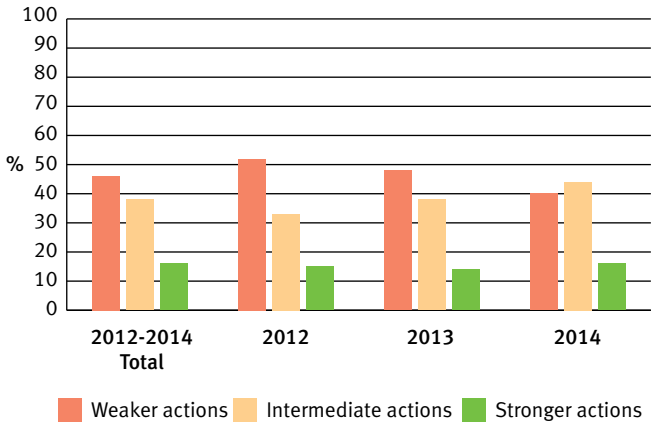
Strength of Recommendations

Overall there were a total of 249 recommendations (including lessons learnt) from the 51 clinical incident reports, ranging from 0-18 recommendations per report (average 5).

The strength of recommendations was analysed using the Department of Veterans Affairs National Centre for Patient Safety Recommended Hierarchy of Actions tool[6], which classifies actions as "stronger, intermediate or weaker" in terms of potential to reduce patient harm. Using this scale, 46% of recommendations were classified as weaker, 38% as intermediate and 16% as stronger actions (Figure 3).

Improvements were noted over time with the number of weaker recommendations dropping from 52% in 2012 to 40% in 2014, while intermediate actions increased from 33% to 44% over this time. The number of stronger actions remained consistently lower across this timeframe making this a priority for future clinical incident reports.

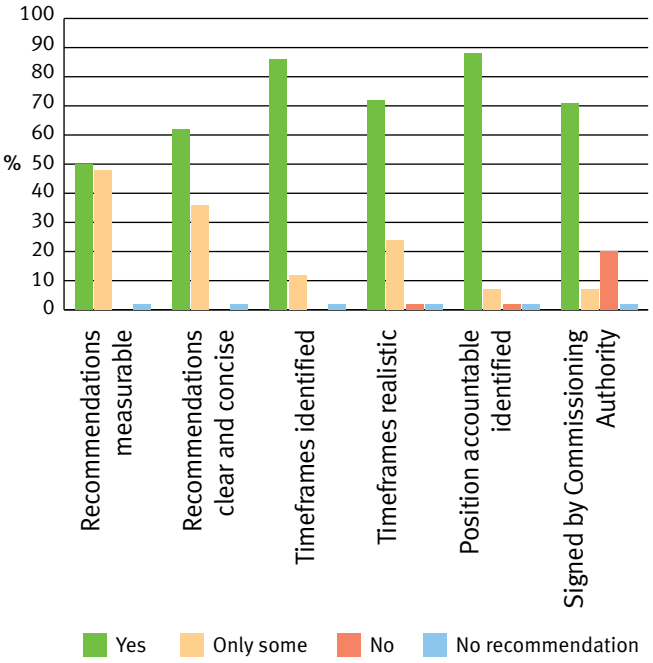
Figure 3: Strength of Recommendations



Quality of Recommendations

For the 42 full Root Cause Analysis (RCA) documents, recommendations were assessed against quality indicators (Figure 4). Forty-one RCAs had recommendations; overall these were well written, identifying the position responsible and timeframes for completion. The measurability of recommendations was identified as an area for improvement; fewer than half the RCAs had recommendations with strong measures to evaluate outcome. Whilst the majority of recommendations were signed by the Commissioning Authority (71%), the variability of RCA templates over time and across HHSs meant that 43% of these had not had the approval section fully completed by the Commissioning Authority.

Figure 4: Quality of Recommendations

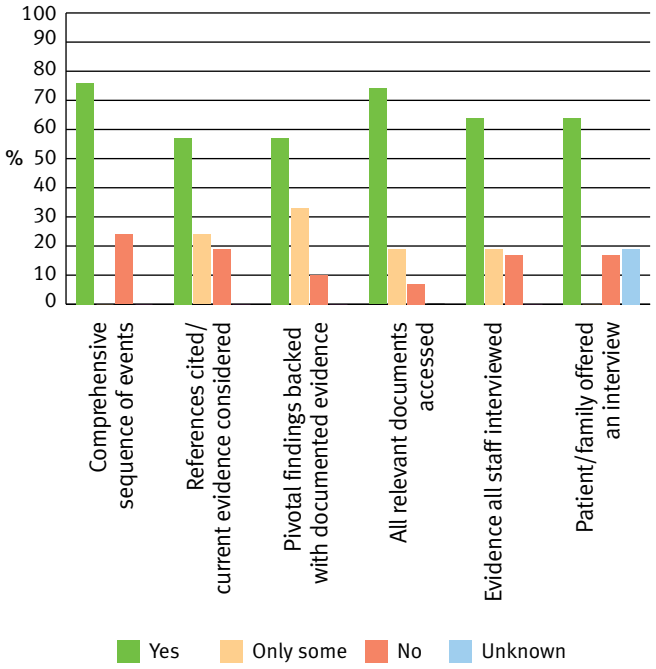


Quality of Root Cause Analysis

The quality of RCA reports was also assessed to identify areas of achievement, and opportunities for improvement. It is important to highlight that this was a retrospective document analysis and that there have been significant developments in systems, processes and training since this time. The scope of the analysis was solely on the RCA documentation provided by the HHS to the QPQC.

RCAs were generally well written, providing a comprehensive sequence of events, and evidence that all relevant documents had been accessed (Figure 5). Just over half the RCAs cited comprehensive references/ current evidence and backed all pivotal statements with documented evidence: this is an opportunity for improvement. Documentation that staff and family interviews had occurred was provided in over half of cases. Decisions not to interview staff, patients or families, were not always identified in the RCAs. Most RCA reports also only recorded whether staff members declined an interview, not how many were interviewed. The QPQC will work with PSQIS and the Queensland Children's Critical Incident Panel (QCCIP) to look for opportunities to improve RCA template design in these areas.

Figure 5: Quality of RCAs



The QPQC panel also looked at other quality indicators such as whether RCA team composition met legislative requirements and whether QCCIP members had been included. Unfortunately, the RCA templates in use during the time of the analysis did not record this information.

Whilst it is important to maintain RCA panel confidentiality, the recording of the roles present on the panel (rather than names) will assist in documenting that legislative requirements have been met.

Where to from here

QPQC will investigate further opportunities for data sharing and quality improvement. In addition to this summary, QPQC has presented aspects of this work to stakeholder groups including:

- Patient Safety and Quality Improvement Service (PSQIS) Education Forum
- Queensland Children's Critical Incident Panel
- Paediatric Intensive Care Advisory Group
- Queensland Directors of Paediatrics Forum
- Queensland Child and Youth Clinical Network
- State Emergency Department Network Forum
- Sepsis Collaborative
- Paediatric Patient Safety Project
- Clinical Excellence Division (CED) Showcase

In 2018, QPQC commenced a multi-incident analysis of paediatric SAC 1 clinical incidents reported between 2015-2017. The QPQC will continue to share the themes and lessons learnt through the new Paediatric Matters newsletter.

References

1 *Queensland Paediatric Quality Council. www.childrens.health.qld.gov.au/chq/health-professionals/qpqc*

2 *Australian Bureau of Statistics (2017) "2016 Data in Pictures" viewed 13 December 2017. www.censusdata.abs.gov.au/CensusOutput/copsub2016.nsf/All%20docs%20by%20catNo/Data-in-pictures/$FILE/qldER.html*

3 *Australian Bureau of Statistics (2017) "2016 Census of Population and Housing: Aboriginal and Torres Strait Islander Peoples Profile". Catalogue Number 2002.0. Viewed 15 February 2018 www.censusdata.abs.gov.au/census_services/getproduct/census/2016/communityprofile/3?opendocument*

4 *PSQIS. Patient Safety Communique. Testicular Torsion. April 2017. Viewed 15 February 2018 https://qheps.health.qld.gov.au/__data/assets/pdf_file/0022/1400278/psc-ttortion.pdf*

5 *QPQC. Paediatric Matters Newsletter. Sepsis: Detect Early – Could this be sepsis? Edition 1 - July 2018. https://qheps.health.qld.gov.au/__data/assets/pdf_file/0020/2206190/QPQC-Paediatric-Matters-edition-1-2018.pdf*

6 *Veteran Affairs National Center for Patient Safety. Root Cause Analysis Tools 2015. See Page 28 for Action Hierarchy. https://www.patientsafety.va.gov/docs/joe/rca_tools_2_15.pdf Viewed 15 February 2018*