Inquest into the death of Ruby Yan Chen

Ruby Yan Chen was three years old when she died on 9 August 2012. Ruby died from a massive air embolism. Air entered her bloodstream due to the combination of the re-spiking of a partially used IV saline fluid bag, and the delivery of these fluids by the use of pressure cuff in the aeromedical retrieval environment during her transfer from Blackwater Hospital to Rockhampton Hospital.

Coroner David O'Connell delivered his findings of inquest on 12 December 2014.

The Queensland Government responds to recommendations directed to government agencies at inquests by informing the community if a recommendation will be implemented or the reason why a recommendation is not supported.

The departments named in this response will provide implementation updates until the recommendation is delivered. Further information relating the implementation of recommendations can be obtained from the responsible minister named in the response.

Recommendation 1

That IV saline bags are marked in contrasting coloured lettering, for example yellow on black, or red on clear, with the terminology 'SINGLE SPIKE ONLY'. I note that IV saline bags are already marked, usually in black on clear, or blue on clear, lettering so it should not be difficult, nor expensive, for this to occur. This marking should appear next to the port on the bag to hopefully prevent any repetition of this incident.

Response and action: the recommendation is implemented.

Responsible agency: Queensland Health.

On 21 January 2016 the Minister for Health and Minister for Ambulance Services responded:

The Department of Health referred the coroner's recommendation to the manufacturer of the IV saline bags. The manufacturer proposed several new label designs which were considered by clinicians nationwide. The manufacturer reports that until a stronger consensus is reached, the current statement on intravenous bag 'SINGLE USE ONLY' can be highlighted through additional clinician education by the manufacturer.

Recommendation 2

Education, and the promotion of, the prohibition on re-spiking of intravenous fluid bags should occur. There was a suggestion that the prohibition on re-spiking of intravenous fluid bags be termed 'Ruby's rule' as an aid to ensuring that the practice is followed and that the incident never occurs again. If using terminology like this assists then certainly it is to be encouraged.

Response and action: the recommendation is implemented.

Responsible agency: Queensland Health.

On 21 January 2016 the Minister for Health and Minister for Ambulance Services responded:

The Department of Health's Patient Safety Unit issued a patient safety alert to all hospital and health services in regard the lessons learned from this inquest. The patient safety alert states that partially used intravenous bags are never to be respiked.

Recommendation 3

The Queensland Ambulance Service should implement their new clinical practice guideline which they have developed in relation to the priming of giving sets (which I note they had already developed ready for implementation between this incident occurring and the inquest being heard). It is to their credit that they have acted proactively.

Response and action: the recommendation is implemented.

Responsible agency: Queensland Health.

On 21 January 2016 the Minister for Health and Minister for Ambulance Services responded:

The Queensland Ambulance Service addressed this recommendation through a new clinical practice procedure: the priming of an Alaris^{TM} giving set, and the release of a clinical quality and safety communiqué discussing the new clinical practice procedure and Ruby's rule' (NEVER re-spike a partially used intravenous fluid bag). These documents were released under a Queensland Ambulance Service local ambulance service network directive in February 2015.

Recommendation 4

That aeromedical retrieval services investigate whether it is feasible, and practical, to eliminate the use of opaque pressure cuffs which conceal the fluid level in IV bags. Dependent upon operational requirements, infusion pumps with their system of alarms and safeguards, are the preferable system but there are a number of factors to be investigated to determine if it is feasible to be used. Six months is a sufficient time frame for infusion pumps in the aero-medical environment to be investigated and a decision made.

Response and action: the recommendation is implemented.

Responsible agency: Queensland Health.

On 21 January 2016 the Minister for Health and Minister for Ambulance Services responded:

Care Flight Retrieval Medicine and Royal Flying Doctor Service (RFDS) confirm they are phasing out opaque pressure bags and will commence replacement with clear pressure bags.

Infusion pumps are already routinely used on fixed-wing aeromedical transfers for the infusion of intravenous fluids. The implementation of infusion pumps on helicopters is currently being evaluated to identify issues in this environment, for example, additional vibration, frequent false alarm activation, space and weight restrictions on rotary wing platforms. Consideration will also be given to the compatibility of infusion pumps already in use in fixed-wing platforms and hospitals to ensure consistency of training and improve the clinical handover of patients.

The evaluation of the feasibility of infusion pumps in the rotary wing aeromedical environment is being conducted by a working group that will report to the Retrieval Services Queensland statewide integrated governance committee by mid-2015.

On 10 May 2016 the Minister for Health and Minister for Ambulance Services responded:

RFDS commenced phasing out opaque pressure bags with replacement clear pressure bags in June 2015 and infusion pumps are already routinely used on RDFS fixed-wing aeromedical transfers for the infusion of intravenous fluids.

The implementation of infusion pumps on rotary wing (helicopters) was evaluated. There were no issues identified for use in this environment, for example, additional vibration, frequent false alarm activation, space and weight restrictions on rotary wing platforms that may affect the implementation of infusion pumps.

The purchasing process has commenced for the inclusion of fluid infusion pumps for use on helicopters.