Post-operative anaesthesia complications
(13HDC00482, 18 March 2015)

Public hospital ~ Anaesthetist ~ Registered nurse ~ Appendectomy ~ Anaesthesia ~ Oxygen saturations ~ Open disclosure ~ Documentation ~ Rights 4(1), 4(2), 6(1)

A boy, aged 15 years, had an emergency appendectomy at a public hospital. The operation was uneventful and the locum anaesthetist caring for the boy extubated him in theatre. However, while he was being taken to the post-anaesthesia care unit (PACU) the boy stopped breathing. The anaesthetist considered the episode to be a laryngospasm and treated the boy with a jaw thrust and chin lift and applied positive end expiratory pressure (PEEP). When the episode did not resolve with PEEP the anaesthetist administered 50mg of suxamethonium and bag masked the boy until he was ventilating spontaneously again.

There are five documented oxygen saturations recorded while the boy was in PACU over the period of approximately one hour (99%, 89%, 93%, 92% and 90%). The 90% is the last recorded oxygen saturation, but no time is documented for any of the saturations. There is no record of how much oxygen therapy was being administered to achieve these saturations, nor any record of the boy's respiration rate or his level of consciousness. Prior to discharge from PACU the anaesthetist recorded instructions that the boy was "for oxygen via HFM [Hudson face mask]/NP [nasal prongs] to keep sats [saturations] ≥ 94%" and charted "HFM or N/P 2–10L [litres]".

At around 9.30pm in PACU the boy had a coughing incident, during which he coughed up blood-stained sputum and/or pink froth into his oxygen mask. The anaesthetist stated that the boy's chest was clear at that time and she attributed this event to his having been intubated.

At around 9.40pm the boy was discharged to the children's ward, where there was already one other patient. At that time, the boy's oxygen saturations were 96% on 8 litres of oxygen. The anaesthetist said she was satisfied that the boy would be closely monitored on the children's ward; however, she did not document this as a requirement in the postoperative instructions. She said she did not transfer the boy to the Critical Care Unit (CCU) as she was satisfied that his laryngospasm had resolved and his chest was clear.

Following transfer to the children's ward the boy's oxygen saturations were noted to be 94% on 8 litres, so the RN on the afternoon shift adjusted the oxygen to 10 litres "for comfort", and the boy's saturations rose to 96%.

Another RN was on night duty on the children's ward. At around 2am she changed the oxygen to 3 litres via nasal prongs. The nurse said that the oximeter alarm sounded twice between 10.45pm and 5.00am, but the boy's saturations remained consistent at 95% overnight. At 5.00am she turned off the oximeter machine and removed the probe from the boy's finger as she had to care for a new admission. She did not assess the boy between 5.00am and 6.30am. At 6.30am when the nurse entered his room the boy had a respiratory arrest. He was resuscitated but later died as a result of the hypoxia suffered.

It was held that the anaesthetist should have further investigated the reason for the boy's high oxygen requirement prior to discharging him from PACU to the children's ward, and should have scheduled a review on the ward or ordered more intensive

monitoring. Furthermore, the anaesthetist did not consult with senior nursing staff or the resident medical officer (RMO) on duty. The anaesthetist should have considered and discussed whether a discharge to CCU was more appropriate than a discharge to the children's ward. The anaesthetist failed to provide postoperative anaesthetic services to the boy with reasonable care and skill and, accordingly, breached Right 4(1).

The anaesthetist had a professional obligation to keep clear and accurate patient records. However, she did not adequately record the induction medication, whether she suctioned the boy's airway prior to extubation, or any observations from any chest examinations she performed. She failed to record the coughing incident and her interpretation of it. By failing to make adequate records, the anaesthetist did not comply with professional standards and breached Right 4(2).

The RN working with the anaesthetist in PACU showed a lack of critical thinking. She should have raised concerns with the anaesthetist about the discharge to the children's ward and the level of oxygen prescribed, and/or discussed the discharge with the duty nurse manager. She failed to provide services to the boy with reasonable care and skill and breached Right 4(1) of the Code. The RN had a professional obligation to keep clear and accurate patient records. She stated that she forgot to do so as she was distracted by the boy's coughing incident. The RN failed to comply with professional standards of documentation and breached Right 4(2).

The Commissioner was critical of the ward afternoon shift RN's failure to obtain an RMO review of the boy before she increased the oxygen to 10 litres, and her contradictory and incomplete record-keeping.

The night duty RN's change from provision of oxygen by Hudson mask at 10 litres to nasal prongs at 3 litres, inadequate monitoring and assessments of the boy, failure to obtain RMO review, cessation of the monitoring by oximeter, and failure to review the boy between 5.00am and 6.30am were serious departures from accepted standards. The night duty RN failed to provide services to the boy with reasonable care and skill and breached Right 4(1).

It was the night duty RN's legal, professional and ethical duty to make a full, prompt and truthful explanation to the boy's parents and to the DHB about what had occurred that night. Accordingly, by failing initially to disclose that she had removed the oximeter at 5.00am, the night duty RN breached Rights 6(1) and 4(2) and was referred to the Director of Proceedings. The Director decided not to take proceedings.

Staff orientation and training at the hospital was suboptimal and the policies in place were insufficient. A series of failures of equipment, training and communication resulted in a delay in treating the boy's respiratory collapse. The boy was not provided with services with reasonable care and skill and, accordingly, the DHB breached Right 4(1).

The pattern of suboptimal clinical documentation by multiple staff members means the DHB failed to ensure that its staff met expected standards of documentation and, accordingly, the DHB breached Right 4(2).