Co-ordination of care in neurosurgery ward
17HDC00690, 1 August 2019

District health board ~ Intracerebral haematoma ~ Craniectomy ~ Communication ~ Co-ordination ~ Information ~ Handover policy ~ Rights 4(1), 4(2), 4(5)

A 55-year-old woman who had a complex medical history presented to the Emergency Department of a public hospital with right-sided weakness in her face, arm, and leg. A CT scan showed a large left parietal intracerebral haematoma with a midline shift. Immediately following admission, her Glasgow Coma Scale (GCS) score was 15/15, but subsequently it dropped to 13/15, then to 6/15. The woman was intubated and ventilated, and transferred to another hospital, where she was admitted to the Intensive Care Unit. A left-sided parietal craniotomy and drainage of the intracerebral haematoma was performed.

Two days later, she was discharged to the neurosurgery ward. A neurosurgeon saw the woman and decided that because of her previous heart valve replacements and risk of thromboembolic complications, she should recommence anti-coagulation therapy. Although the neurosurgeon thought that treatment with intravenous heparin was in the woman's best interests, he did not arrange for her family to be consulted about the decision.

The woman had regular aPTT testing. The results were frequently high, and at those times staff followed the ICU heparin infusion protocol by stopping the heparin and restarting it at a lower rate. Advice was not sought from the haematology team.

The woman had a large vomit. A nurse checked the woman's observations, and a registrar responded to the request for an immediate review at 1.30am. Her GCS had changed from 11/15 to 10/15, and she had a sluggish right pupil. He ordered an urgent brain CT scan, chest X-ray, and routine bloods. The CT scan reported worsening oedema around the initial intra-axial haemorrhage, with new extra-axial haemorrhages in the midline and left frontal region, with associated mass effect.

The registrar reassessed the woman, and her GCS remained unchanged. He discussed the CT results with the on-call consultant, who advised that surgical intervention was not indicated at that point, but to continue to observe the woman. She was placed on hourly observations, and no further deterioration occurred. She was fasted so that she would be ready for surgery if required. Overnight, no Early Warning Score (EWS) was recorded.

The registrar handed over to the day team between 7.15am and 7.30am. A neurological examination update was provided, and the team reviewed the scans and discussed the cessation of the heparin and warfarin. A second registrar interpreted the woman's neurological status (GCS 9/15 E1V2M6) as stable compared to her GCS in the early morning (E1–2V2M6). He continued to fast the woman in case of further deterioration.

The nursing care plan included assessment of the woman's vital signs and rousability. The nurse caring for the woman was told at handover that a review by the day doctors was imminent. At 7.30am, the nurse performed an initial set of neurological observations and a physical examination. The woman responded to pain, but the nurse had difficulty ascertaining whether she was obeying commands purposefully. The nurse asked the doctors to review the woman. The nurse was not present when they went to the woman's area at about 8am, but a note was left for him that he was to continue two-hourly neurological observations, and that the woman was to have no anticoagulant therapies.

The second registrar assessed the woman at 9.05am and recorded that her GCS was then E1V2M6. The first registrar had handed over that the GCS was E1–2V2M6 overnight, and the second registrar interpreted that the motor score (M6) and overall GCS (9/15) were stable. Following the second registrar's record of his 9.05am review, there are no further nursing or medical notes until the neurosurgeon saw the woman at 1.00pm.

The second registrar met with the neurosurgeon at around 10am, and conveyed that he had reviewed the woman and that she was neurologically stable. The neurosurgeon said that the second registrar told him the woman had had a CT scan overnight, but it was a passing comment rather than part of a discussion about her clinical state. The neurosurgeon enquired briefly as to the woman's clinical condition and the imaging findings, and was reassured that she was stable and that any imaging changes were not of any great significance. He did not pursue the conversation further, as he believed that the woman would be reviewed during the group ward round. The second registrar said that the outcome of the discussion was that he and the neurosurgeon would review her after the morning multidisciplinary team (MDT) meeting. The second registrar said that subsequently he did not receive any calls from the ward staff about the woman's condition.

The neurosurgeon did not participate in the group ward round because of the need to assess another patient. He assumed that the woman would be seen regardless of his absence, as was the standard practice. He told the staff that he would be available at around 1pm.

The nurse stated that his ability to undertake the woman's observations was hampered by the woman's husband, who insisted that his wife was obeying commands and responding in ways that the nurse could not see. The man thought that his wife was experiencing pain, and said that the nurse was hurting her, which made it difficult for the nurse to assess her objectively. During his shift, the nurse updated the charge nurse manager (CNM) on the woman's ongoing condition. He said that at around 10.15am he found that the woman was less responsive, and that when he advised the CNM, she said that a review by the consultant was imminent.

At 10.20am, the Adult Vital Signs Chart shows a GCS of 8, with the right pupil dilated and non-reactive. The CNM said that some time after 9.45am she was in the communal nursing station with the nurse, who spoke about an interaction he had had with the woman's husband. She does not recall the nurse mentioning anything about the woman's clinical presentation.

The CNM telephoned the neurosurgeon at 10.30am to see whether he would be attending the ward round, and spoke to him about the difficulties in providing nursing care because of the husband's actions. The CNM does not recall being aware of the clinical presentation at that time. She told the husband that the neurosurgeon would come in after the ward round. She also told the doctors that she had called the neurosurgeon, who would be coming in. The doctors did not review the woman on the ward round.

At 11.15am, the Adult Vital Signs Chart again shows a GCS of 8 with the right pupil dilated and non-reactive. The woman had no movement in either leg, and had developed a new weakness in her left arm.

The CNM stated that she spoke to the nurse again some time later, and he mentioned the woman's husband again, and said that there was some fluctuation in the woman's responsiveness. The CNM said that she expected that the nurse had already escalated any

clinical concerns through the usual channels in the EWS process by informing the medical team and the shift co-ordinator if necessary.

The nurse spoke to the CNM to raise his concerns about the woman's deterioration, and also for advice on how to deal with the husband's behaviour. The nurse said that the CNM told him that the consultant was coming to review the woman and talk to the family, which reassured him and addressed his concerns.

The second registrar stated that at around 11am, the CNM told him that there was no change in the woman's condition, and to avoid reviewing her as her husband was very angry about her care. The second registrar stated that prior to the neurosurgeon's review, the registrars were unaware of any further clinical deterioration.

At 1.00pm, the neurosurgeon assessed the woman and found her GCS to be 7/15 (E1V1M5). An urgent CT scan performed 30 minutes later showed an increase in size of the subdural bleed, with further swelling and mass effect, and a midline shift. The woman's coagulation status was reversed back to normal, and an urgent decompressive craniectomy was performed.

Findings

The standard of communication within the department was very poor, and adversely affected the quality and continuity of services provided. Accordingly, the DHB breached Right 4(5). Information that should have initiated a timely response to the woman's deterioration was available within the system, but this did not occur. It was considered that the services provided were markedly sub-optimal, and accordingly the DHB breached Right 4(1).

The clinical documentation of the woman's deteriorating neurological status and of communications with the family and with other members of the team was very poor, and contributed to the lack of continuity of care. Therefore, the DHB was found to have breached Right 4(2).

Adverse comment was made about the neurosurgeon's failure to take reasonable steps to consult with the family and answer any questions they had before commencing heparin.

Adverse comment was also made regarding a concerning lack of critical thinking by staff when the woman's response to the heparin infusion was outside the norm — rather than consult the haematology team, staff continued to follow the protocol.

Recommendations

The Commissioner recommended that the DHB:

a) Report back on the implementation of the recommendations in its Serious Sentinel Event Report.

b) Provide training to clinical staff on communication pathways and record-keeping.

c) Audit the provision of anti-coagulation therapy in cases where the aPTT level has remained above normal for more than a 24-hour period, to ascertain whether advice was sought from the haematology service.

d) Review the handover policy, particularly in relation to provision of information directly to consultants.

e) Review the EWS policy to determine whether to include the requirement for regular and consistent GCS and EWS scoring; the early reporting and documentation of changes in scores; clear documentation that the appropriate clinician has been informed of the changes; and that the frequency of observations must increase if abnormal physiology is detected.

f) Include in the EWS policy a requirement that if a patient deteriorates, nursing staff must inform the medical team as soon as possible. If no satisfactory plan is formulated or the patient continues to deteriorate, the nursing staff must re-escalate to the consultant in charge, and document the steps taken.

g) Develop an escalation process for situations in which clinical care is impeded by concerned relatives of patients.

h) Audit the clinical records of 50 patients whose EWS scores indicated that they were deteriorating, to ascertain whether the “Adult and paediatric vital sign measurement, early warning score and escalation” policy was complied with.

i) Provide a formal written apology.