SPSO Scottish Public Services Ombudsman

The Scottish Public Services Ombudsman Act 2002

Investigation Report

UNDER SECTION 15(1)(a)

SPSO
4 Melville Street
Edinburgh
EH3 7NS

Tel **0800 377 7330**
SPSO Information **www.spso.org.uk**
SPSO Complaints Standards **www.valuingcomplaints.org.uk**

Scottish Parliament Region: North East Scotland

Case ref: 201601952, Grampian NHS Board
Sector: Health
Subject: Hospitals / Clinical treatment / Diagnosis / Communication

Summary
Mrs C complained to us about the care and treatment provided to her late son, (Baby A), at the Aberdeen Royal Children's Hospital. Baby A had been fitted with a shunt (a medical device that relieves pressure on the brain by draining excess fluid into the abdominal cavity) shortly after he was born. Mrs C complained that when he was admitted to the hospital several months later, there were multiple failings in care and treatment. Baby A passed away in a specialist paediatric neurosurgery centre under another health board a few days after his admission to the hospital.

During our investigation, we took independent advice from a paediatrician, a neurosurgeon, and an anaesthetist. We found that although the board's internal investigation had identified some issues in Baby A's care and treatment, they had not addressed the important issues with the episode of care. Our investigation determined that there was a lack of clarity regarding the roles of each medical team, and that there was a lack of communication between consultants when Baby A's condition was not improving. We also found that the neurosurgical team had not kept reasonable records, nor had they appropriately assessed Baby A before and after operations. We identified significant delays in Baby A being reviewed after he underwent operations, and a delay in clinicians contacting the specialist centre for advice on the management of Baby A. Finally, we considered there to have been a lack of communication from the neurosurgical team and Baby A's parents. Given the multiple failings identified by our investigation, we upheld this aspect of Mrs C's complaint.

Mrs C further complained to us that after Baby A's death, the board did not contact her or communicate with her until she submitted her complaint. The board accepted that this was unacceptable, and we upheld this aspect of Mrs C's complaint.

Redress and Recommendations
The Ombudsman's recommendations are set out below:

What we are asking the Board to do for Mrs C:

Complaint	What we found	What the organisation should do	Evidence SPSO needs to check that this has happened and the deadline
(a)	There were multiple failings in care and treatment provided to Baby A when he became unwell in August 2015; and the Board failed to reasonably communicate with Mrs and Mr C following Baby A's death	Apologise to Mrs and Mr C for the failings in care and treatment provided to Baby A when he became unwell in August 2015; and for failing to reasonably communicate with Mrs and Mr C following Baby A's death	Copy of apology letter By: 19 July 2017

We are asking the Board to improve the way they do things:

Complaint	What we found	What should change	Evidence SPSO needs to check that this has happened and deadline
(a)	There was a lack of clarity regarding the roles of each team in the care and treatment of Baby A	Roles of each team in situations of joint care (for example neurosurgical and paediatric) should be made clear	Evidence of consideration by the Board as to how teams can clarify roles in situations of joint care By: 16 August 2017

(a)	There was no 'consultant to consultant' discussion when it became clear that Baby A's condition was not improving	Consultants in situations of joint care should discuss a child's presentation when it becomes clear that their condition is not improving	Evidence that this has been fed back to relevant staff (for example, a copy of the minutes of discussion of the complaint at a staff meeting or of internal memos/emails, or documentation showing feedback given about the complaint) By: 19 July 2017
(a)	The Board's internal investigation focussed on the shunt tap attempt as a reason for Baby A's continued deterioration, when in fact it is unlikely that this had any impact on Baby A's clinical status	Internal investigations should involve the appropriate specialisms to identify what issues are pertinent to an episode of care	Evidence that this has been fed back to relevant staff By: 19 July 2017
(a)	There was poor record-keeping by the neurosurgical team	Records made by all clinicians should be in line with national guidance and note all relevant factors in decision making	Evidence that this has been fed back to relevant staff By: 19 July 2017

(a)	There was a failure of the neurosurgical team to document any neurological assessment of Baby A pre- or post-operatively	Neurological assessment should be fully carried out and recorded both before and after operations to revise a ventriculo-peritoneal shunt	Evidence that this has been fed back to relevant staff and evidence that the Board have considered implementing guidelines with regards to neurological assessment pre- and post-ventriculo-peritoneal shunt revision By: 16 August 2017
(a)	There was a lack of post-operative review of Baby A by the neurosurgical team	There should be clear plans in place to review children in a timely manner after neurosurgical procedures	Copy of protocols put in place which note time stipulations for reviewing children after ventriculo-peritoneal shunt revision By: 13 September 2017
(a)	Baby A's condition was not discussed with the specialist paediatric neurosurgery unit until after the second operation	Clinicians should be clear when to discuss cases with specialist units, rather than it being left to the discretion of the individual clinician.	Copy of more specific guidance on which children should be discussed with specialist units By: 13 September 2017

(a)	There was a lack of communication from the neurosurgical team with Mrs and Mr C	Clinicians should be clearly communicating with parents of children in the high dependency unit	Evidence that this has been fed back to relevant staff By: 19 July 2017
(b)	Until Mrs C made a complaint, Board staff did not communicate with Mrs and Mr C after the death of Baby A	Relevant clinical and management staff should initiate communication with the family soon after a child dies	Copy of protocol which stipulates arrangements for communication after a child dies By: 13 September 2017

Who we are

The Scottish Public Services Ombudsman (SPSO) investigates complaints about organisations providing public services in Scotland. We are the final stage for handling complaints about the National Health Service, councils, housing associations, prisons, the Scottish Government and its agencies and departments, the Scottish Parliamentary Corporate Body, water and sewerage providers, colleges and universities and most Scottish public authorities. We normally consider complaints only after they have been through the complaints procedure of the organisation concerned. Our service is independent, impartial and free. We aim not only to provide justice for the individual, but also to share the learning from our work in order to improve the delivery of public services in Scotland.

The role of the SPSO is set out in the Scottish Public Services Ombudsman Act 2002, and this report is published in terms of section 15(1) of the Act. The Act says that, generally, reports of investigations should not name or identify individuals, so in the report the complainant is referred to as Mrs C. The terms used to describe other people in the report are explained as they arise and in Annex 1.

Introduction

1. Mrs C complained to the Ombudsman about the care and treatment her late son (Baby A) had received from Grampian NHS Board (the Board), and the Board's communication with her and her husband (Mr C) after Baby A's death. The complaints from Mrs C I have investigated are that:

(a) the Board did not provide a reasonable standard of treatment when Baby A became unwell in August 2015 (*upheld*); and

(b) the Board failed to reasonably communicate with Mrs and Mr C following Baby A's death (*upheld*).

Investigation

2. In order to investigate Mrs C's complaint, my complaints reviewer examined all the information provided by both Mrs C and the Board, and obtained independent clinical advice from a paediatrician (Adviser 1), a neurosurgeon who practices mainly in the area of paediatric neurosurgery (Adviser 2), and an anaesthetist (Adviser 3). In this case, I have decided to issue a public report on Mrs C's complaint because of the significant failures identified by my investigation.

3. This report includes the information that is required for me to explain the reasons for my decision on this case. Please note, I have not included every detail of the information considered. My complaints reviewer has reviewed all of the information provided during the course of the investigation. Mrs C and the Board were given an opportunity to comment on a draft of this report.

Background

4. Baby A suffered from post-meningitis hydrocephaly (an accumulation of fluid within the brain due to an infection of the protective membranes that surround the brain and spinal cord) shortly after he was born in October 2014, and, therefore, he was fitted with a ventriculo-peritoneal (VP) shunt (a medical device that relieves pressure on the brain by draining excess fluid into the abdominal cavity) in November 2014.

5. On 6 August 2015, Mrs C brought Baby A to the Accident and Emergency Department (A&E) of the Royal Aberdeen Children's Hospital (the Hospital) as he was 'unsettled'. Baby A was assessed by a trainee in medical paediatrics and it was thought that Baby A was suffering from teething difficulties or a virus. Baby A was discharged and Mrs C was given advice to bring him back in if his conditioned deteriorated. In commenting on a draft of this report, Mrs C said

that she had been reassured by being told that the shunt was unlikely to be the issue, and that therefore she felt going home at this point was a preferable option.

6. In the early hours of 7 August 2015, Mrs C found that Baby A's breathing was shallow and that he was twitching. An ambulance was called and on arrival at the Hospital Baby A was given a chest x-ray and a computerised tomography (CT) head scan (a scan that uses x-rays and a computer to create detailed images of the inside of the body). Baby A was then transferred to the paediatric high dependency unit (HDU) at around 08:00. The CT scan showed that Baby A was suffering from acute hydrocephalus (accumulation of fluid within the brain).

7. At some point after the CT scan was carried out, a neurosurgical registrar attempted to 'tap' Baby A's VP shunt. This is a procedure in which a needle is inserted into the shunt's reservoir. This procedure was not recorded in the medical notes but a subsequent investigation by the Board into Baby A's treatment determined that the shunt tap had occurred (see paragraph 15).

8. Baby A was taken into theatre at around 09:00 to examine the VP shunt. It was found that the shunt was disconnected; therefore, it was reconnected in theatre.

9. Baby A was then returned to the HDU. He was reviewed by a consultant paediatrician at 11:00 and the sedative medication, which was being administered through a drip, was discontinued. An anaesthetic register reviewed Baby A at 11:15. At 13:20 Baby A was extubated (the tube which was assisting his breathing was removed) by an anaesthetic registrar and Baby A's breathing was reviewed. At 16:50 it was recorded in the nursing notes that Baby A had become more irritable, showing signs of abnormal eye movements and irregular breathing. Attempts had been made by the nursing team and anaesthetic registrar to contact the neurosurgery team but they had not been successful until 16:30. The neurosurgical team decided that another CT scan of Baby A's head was required and this was carried out at around 17:55. As the CT scan showed no reduction in Baby A's hydrocephalus, he was taken back to theatre at around 18:15 for the removal of the VP shunt and insertion of an external ventricular drain (EVD, a medical device that relieves pressure on the brain by draining excess fluid to outside of the head) at the site of the existing VP shunt.

10. After the surgery to place the EVD, which was carried out between 18:15 and 19:15, Baby A's clinical condition did not improve. Another CT scan was carried out at around 23:30 and demonstrated little change in the appearance of the brain from the earlier scan. It also showed that the EVD had been poorly positioned.

11. Baby A was now showing further symptoms of deterioration, and the decision was taken to discuss the case the with a specialist paediatric neurosciences centre in a different health board area (the Specialist Centre). It was advised that the EVD should be moved to a different area of the brain and that Baby A should be transferred to the Specialist Centre for ongoing management.

12. Baby A went into theatre to have the EVD re-sited at around 02:30 on 8 August 2015, and was transported to the Specialist Centre at around 13:30. Very sadly, Baby A did not recover and he passed away on 12 August 2015.

(a) The Board did not provide a reasonable standard of treatment when Baby A became unwell in August 2015

Concerns raised by Mrs C

13. Mrs C told us that multiple major issues with Baby A's care had come to light as a result of the Board's internal investigation into Baby A's care (discussed below at paragraph 15). She had particular concerns about the neurosurgical management of Baby A's clinical condition and the lack of communication and continuity of care between teams. Mrs C said that after the first operation that Baby A had, hours passed without any review of his condition despite him not waking up from the anaesthetic, and that there seemed to have been delays in Board staff contacting the Specialist Centre to discuss Baby A.

14. Mrs C said that she believed significant improvements needed to be made by the Board but that she had been given no indication that any changes would be made. Mrs C said that she and Mr C were devastated by the loss of Baby A and that the understanding that the outcome might have been different had he received the clinical care he needed had made the loss much harder to cope with.

The Board's response

15. The Board carried out an internal investigation into the care and treatment provided to Baby A. This investigation made several findings, including that when Baby A presented at A&E on 6 August 2015, his head circumference was not measured and a raised blood pressure result was not recognised, and that after Baby A's first operation there was no neurosurgical plan to formally review him. However, the internal investigation focussed largely on the registrar's attempt to tap the shunt prior to the first operation. The investigators suggested that the shunt became disconnected as a result of the attempt to tap it and, therefore, that the reconnection at the first operation could not be expected to improve Baby A's condition. On that basis, the investigators concluded that no action was taken to actively manage Baby A's hydrocephalus until the second operation, more than 12 hours after admission to the Hospital.

16. The internal investigation made several recommendations, including further investigation of the shunt tapping procedure and the impact of this. It also recommended developing a care pathway for children with VP shunt presenting as emergency admissions, and a review of the neurosurgical team's on-call system. The investigation further recommended that the neurosurgical team, and other non-resident surgical specialities, clearly indicate post-operative instructions in the case record and through verbal handover, including when the child will be reviewed by a member of their team.

17. My complaints reviewer asked the Board for evidence of the recommendations made by the internal investigation being fulfilled. The Board said that with regards to the care pathway for children with VP shunt presenting as emergency admissions, it was considered by the neurosurgery team that there were too many variables in the presentation of children with VP shunt dysfunction, and that, therefore, it was not viable to have a care pathway that encompassed every aspect of care to individual children. However, they said that there is now an arrangement in place between the neurosurgeons and the paediatricians to ensure that the neurosurgery on-call consultant is informed of any patients admitted with a VP shunt to allow shunt dysfunction to be ruled out as a cause of the patient's attendance.

18. The Board further told my complaints reviewer that they had now changed their on-call system so that both neurology and neurosurgery staff are available overnight (previously only one or the other would be available). They said that

they have an electronic rota system which clearly shows who is on-call and contact details for the on-call person.

19. With regards to the recommendations about post-operative instructions, the Board said that handover sheets are used for on-call purposes where any ongoing issues with patients are recorded and handed over between shifts. They also said that post-operative instructions are now clearly written or typed in the electronic record within the theatre system which forms part of the electronic patient record.

Medical advice

Assessment on 6 August 2015 - Paediatrics (Adviser 1)

20. My complaints reviewer asked Adviser 1 whether they considered the assessment carried out by the trainee in medical paediatrics on 6 August 2015 to have been reasonable. Adviser 1 said that it would be good practice for any infant under the age of one year who presents unwell to have their head circumference measured, but in the context of a child with a VP shunt they would expect the head circumference to always be recorded. Adviser 1 noted that there is a section on the assessment document used in the Hospital where the head circumference should be recorded, but that this was not filled in when Baby A was assessed. Adviser 1 said that if an opportunity had been available to compare the head circumference with previous measurements from the notes or parent held records then this would have considerably helped the clinical assessment.

21. Adviser 1 said that the conclusion, that it was unlikely that there was a shunt infection or obstruction, seemed to have been based on the absence of bulging of the fontanelle (the top of the head at the front) alone. Adviser 1 said that there was a high blood pressure measurement noted but that it was not evident that this had been re-checked to confirm the reading. Adviser 1 said that confirmation of the high blood pressure and evidence of an increase in head circumference, if it was present, would have certainly triggered an admission and neurosurgical review. However, Adviser 1 did note that admission was offered and that open access for return was given. Adviser 1 considered there to have been shortcomings in the clinical assessment, especially in the failure to record Baby A's head circumference, but they could not say if these contributed to the ultimate outcome.

Admission on 7 August 2015 – Paediatrics (Adviser 1)

22. My complaints reviewer went on to ask Adviser 1 to comment on the paediatric team's role as leads in Baby A's care when he was admitted on 7 August 2015, and whether that was provided to an appropriate standard. Adviser 1 said that it would be standard practice for paediatrics to be the lead team in a case such as this one in any NHS Hospital. Adviser 1 explained that the lead team would need to work very closely with other teams such as anaesthetics and neurosurgery. Adviser 1 said that apart from having the necessary paediatric expertise with, for example prescribing, the paediatric team will always be the first team to be contacted in urgent situations as a surgical team may not always be immediately available.

23. Adviser 1 said that it is not easy to assess whether the paediatrics team in this case provided appropriate coordination of care, but that when it became apparent that Baby A's condition was not as expected in the afternoon of 7 August 2015, they might have expected a 'consultant to consultant' discussion between paediatrics and neurosurgery as to what the fundamental issues were. Adviser 1 said that this would have included discussion about transfer to the Specialist Centre. Adviser 1 said that this discussion does not appear to have happened, and commented that in situations of joint care, it is essential that the roles and relationship of the various teams are made completely clear.

24. Adviser 1 said that it appeared that the paediatric team reviewed Baby A at appropriate times, but noted that the plan for ongoing care was dependent on neurosurgical opinion. Adviser 1 said that between around 13:20 and 16:50 on 7 August 2015, Baby A's blood pressure was relatively high and his neurological status seemed to deteriorate, and Adviser 1 said that this appears to have been a critical period during which a higher level of discussion (consultant to consultant, as mentioned above) would have been helpful. Adviser 1 said that had this occurred, even over the telephone, it may have resulted in the paediatric team requesting a CT scan at an earlier point, rather than waiting for the neurosurgical review.

25. My complaints reviewer asked Adviser 1 to comment on the communication in this case between paediatrics and Mrs and Mr C. Adviser 1 said that this is never easy to assess as communications may not always be fully documented. Adviser 1 said that when it was clear that unexpected problems were developing, there perhaps should have been a discussion with

Mrs and Mr C of what the issues were, either by the neurosurgical or paediatric teams, but ideally with both together.

Neurosurgery (Adviser 2)

26. When requesting neurosurgical advice, my complaints reviewer first asked Adviser 2 to comment on the procedure to tap Baby A's shunt, carried out by the neurosurgical registrar prior to Baby A being taken into theatre for the first time. Adviser 2 explained that tapping a VP shunt is a procedure which involves, using strict aseptic (surgically sterile) technique, insertion of a thin needle into a reservoir of the shunt. Adviser 2 said that the indications for the technique are to obtain a sample of fluid for analysis if there is a suspicion of infection; as part of, along with clinical and radiological examination, checking if the shunt is working; or to withdraw fluid for a patient with extreme hydrocephalus as a temporary measure prior to definitive surgical treatment to revise the shunt.

27. Adviser 2 noted that the neurosurgeons involved in the care of Baby A all stated in the internal investigation that they did not agree with carrying out a shunt tap in the setting of a child presenting with shunt dysfunction. Adviser 2 said that this is a reasonable position, but that it could also be considered reasonable to tap the shunt for the reasons above.

28. Adviser 2 said that it was clearly an indefensible breach of integrity and against all General Medical Council (GMC) guidance on expected professional behaviour of doctors for the registrar not to record the shunt tapping attempt. Adviser 2 said that it would be expected that a neurosurgical registrar performing a shunt tap would: discuss and get approval from the on-call consultant; obtain verbal and ideally written consent from the parents; perform the procedure in a technically competent and safe manner; and record all details of the procedure in the medical notes. Adviser 2 said that the absence of any evidence of these is gravely concerning.

29. However, Adviser 2 did not agree with the opinion of the Board's internal investigation that the shunt most likely became disconnected as a result of the shunt tapping attempt. Adviser 2 said that as there are no clinical note entries, the timeline is unclear, but that the summaries of the reports from the witnesses state that the registrar attempted to tap the shunt after the CT scan was performed. Adviser 2 said that this is important as the CT scan demonstrates the disconnection of the shunt, and, therefore, the disconnection was present

prior to the attempt to tap. Adviser 2 said that they had never come across a case of disconnection caused by a tap, and a review of the literature did not find any published cases of this happening. Adviser 2 said that it is very difficult to see how the tap attempt could cause a disconnection and overall they considered it extremely unlikely that the tap caused the disconnection, and that it appears that the shunt was disconnected prior to the tap attempt. Therefore, Adviser 2 said that they did not think that the shunt tap made any material difference to the remainder of the case or the clinical outcome.

30. My complaints reviewer then asked Adviser 2 to comment on the decisions to carry out each of the three theatre procedures: (i) examination and reconnection of the shunt at approximately 09:00 on 7 August 2015; (ii) placing an EVD at the site of the shunt at approximately 18:00 on 7 August 2015; and (iii) placing a frontal EVD at approximately 02:30 on 8 August 2015. Adviser 2 first said that one of the recurring issues with this case is the lack of documented neurological assessment of Baby A. Adviser 2 said that there was no documented neurological assessment by the neurosurgeon or any other doctor prior to the first operation.

31. Adviser 2 said that it can be inferred that Baby A was in a poor neurological state by the fact that procedures to aid breathing were required. Adviser 2 noted, however, that there was no documentation of head circumferences, consciousness level, eye function, posture, or movement at any point. They said that this is the minimum information that should be recorded with an infant presenting with suspected shunt dysfunction. Adviser 2 also said that understanding the decision making process of the neurosurgical team is difficult because of the lack of documentation. Adviser 2 said that the fact that this documentation is lacking is suggestive of an absence of understanding the important clinical factors in assessing and decision making in young children with neurological problems, which they explained is not easy and very different from assessment and decision making in older children and adults.

32. Adviser 2 went on to explain that in general, when a child presents with presumed shunt dysfunction, the most appropriate management is surgical exploration of the shunt to assess which part or parts are not working and revision of these parts. The Adviser said that the exception is when there is concern that the child may not be able to be woken from general anaesthetic. In these children, Adviser 2 said, the insertion of an EVD is more appropriate as

if the child is not assessable neurologically, drainage can be monitored directly (as fluid will drain into an external collection system instead of into the abdominal cavity).

33. Adviser 2 said that because there is not enough documented clinical information about Baby A's condition prior to the first operation, it is difficult to know if an EVD should have been inserted immediately or whether the decision to revise the shunt primarily was correct. Adviser 2 considered that they did not have enough evidence to state that the decision to revise the shunt at the first operation was unreasonable, but said that many neurosurgeons would have placed an EVD at this point.

34. In commenting on the timing of the first operation, Adviser 2 noted that Baby A was first assessed at around 07:15 and was operated on at around 09:00 to 10:00, which Adviser 2 said suggests some delay. Adviser 2 said that generally a child with suspected shunt dysfunction and a depressed conscious level should reach theatre from presentation within one hour. However, Adviser 2 said that they did not think that this delay made a material difference to the outcome.

35. Adviser 2 said that one issue with the first operation was that there was no record that the valve or distal (abdominal-end) parts of the shunt were checked. Adviser 2 noted that the operation record states that the proximal (head-end) tube was draining fluid and, therefore, was simply reconnected to the valve from which it had disconnected. Adviser 2 said that it would have been normal practice to check the function of the valve and the distal part prior to the reconnection, and that this may have been done but not recorded. Adviser 2 explained that if the valve or distal part were blocked then reattaching the proximal tube would not have resulted in adequate drainage.

36. Adviser 2 said that their main concern is what happened after the first operation. They said that it appears that Baby A was kept sedated and intubated (having a tube in place to maintain an open airway) for a lengthy time after the end of surgery. During this time, Adviser 2 commented, it would have been impossible to assess him neurologically and, therefore, to see if the revision had been successful in effecting relief of hydrocephalus. Normal practice would be to attempt to wake the child immediately and, if there was any ongoing neurological concern, to obtain further CT imaging and return to theatre.

37. Adviser 2 said that the lack of any post-operative review by the neurosurgical team is of grave concern. Adviser 2 felt that it was very concerning that there is no record of a neurosurgeon of any seniority examining Baby A for approximately seven hours after the emergency shunt revision surgery. Adviser 2 noted that a telephone call was apparently made to the HDU by a neurosurgical registrar at around 13:00 but said that this is in no way a substitute for a physical examination and assessment of neurological status. Adviser 2 said that if the neurosurgical consultant and registrar were physically unable to come (for example if they were in the operating theatre) arrangements should have been made for another neurosurgeon to review Baby A.

38. Adviser 2 said that a child with depressed consciousness levels following cranial (relating to the skull) surgery is a neurosurgical emergency and a life threatening situation, and should immediately be reviewed by a neurosurgeon. They said that if a registrar cannot come immediately, the call should be escalated to the child's consultant, and if they cannot be contacted, other consultants should be contacted until one can review the child immediately.

39. Adviser 2 did note that Baby A was reviewed by a paediatrician at around 11:00, but said that this review focussed on system issues such as fluid balance with no record of a neurological assessment. Adviser 2 said that due to lack of neurosurgical review there was an unacceptable delay between the first operation being completed at around 10:00 and the next CT scan being performed at 17:55.

40. Adviser 2 said that they considered the decision to replace the VP shunt with an EVD at the second operation to have been reasonable; however, they thought it should have been done much earlier. Adviser 2 said that it was interesting to note that at this stage the neurosurgical team raised the possibility that Baby A's symptoms were being caused by a lack of drainage from the fourth ventricle (the cavity at the back and bottom of the brain), but that no action was taken as a result of this suggestion. Adviser 2 said, however, that they thought that there was still no definitive evidence that the VP shunt was working at this point and, therefore, insertion of an EVD was reasonable as it was uncertain if fluid was being adequately drained. Again, Adviser 2 said that this surgery should have occurred much earlier in the day.

41. Adviser 2 said that it appeared that following the second operation there was no neurological improvement in Baby A. Adviser 2 explained that there were two potential reasons for this: first, that the EVD was not well positioned and was not draining fluid adequately; secondly, that the neurosurgical status of Baby A was not due to hydrocephalus in the areas of the brain which could be drained by means of the VP shunt or EVD, but due to the grossly dilated fourth ventricle causing pressure on the brainstem.

42. Adviser 2 said that there were some clues in the notes that Baby A was showing signs of brainstem dysfunction, including 'yawning', unusual eye movements, long pauses between breaths and a slow heart rate. At this stage, Adviser 2 said, this possibility should have been recognised and treated with drainage of the fourth ventricle. Adviser 2 said that they considered it reasonable to re-site the EVD to a frontal point, but that many neurosurgeons would have drained the fourth ventricle at this point also, or at least made a plan to in case the EVD replacement did not result in an immediate improvement.

43. In summary, Adviser 2 said that the decision to select each operation at each stage was reasonable, but what was not acceptable was the delay between each operation when it became clear that each one had not effected neurological improvements. Adviser 2 said that they were sad to say that the delays in treatment may well have significantly contributed to Baby A's death.

44. My complaints reviewer went on to ask Adviser 2 whether they would have expected the neurosurgery team to have consulted with the Specialist Centre earlier than they did, and transfer Baby A to the Specialist Centre at an earlier point. Adviser 2 said that referring to Society of British Neurological Surgeons guidelines, it is reasonable for life saving surgery for a child to be performed in an adult neurosurgical unit, but that Baby A should have been discussed with the Specialist Centre, and emergency transfer considered, as soon as it became clear that Baby A had not improved neurologically after the first operation. Adviser 2 said that a paediatric neurosurgeon would have been much more likely to have recognised that multiple EVDs or VP shunts may have been needed. Additionally, Adviser 2 said that the delays in care described above would be unlikely to have happened in a unit staffed by paediatric anaesthetists and nurses experienced in caring for children in a neurosciences setting, where awareness of what to do in a child with ongoing neurological deficit following shunt surgery would have been much higher.

45. Adviser 2 also noted that even when Baby A was discussed with the Specialist Centre, at around 02:45 on 8 August 2015, Baby A did not leave the Hospital until nearly 12 hours later (although it is recorded that this note was written retrospectively, and Mrs C, in commenting on a draft of this report, said that she understood the discussion with the specialist centre being around 23:30). Adviser 2 said that it is unclear why there was such a delay in effecting this transfer.

46. My complaints reviewer next raised the issue of communication with Adviser 2. First they asked Adviser 2 to comment on the communication between the neurosurgical team and the paediatric and anaesthetic teams in the case of Baby A's care and treatment. Adviser 2 said that it is difficult to assess this as the note keeping was so poor, and that this in itself suggests that the written communication at least was inadequate. Adviser 2 said that it does not appear that the anaesthetists or paediatricians were aware of the profound seriousness of Baby A's presentation and the significance of the ongoing, very concerning, neurological signs. Adviser 2 said that this view was based on the multiple entries in the clinical notes made during the eight hours between the first and second operations which show that Baby A's depressed consciousness level was repeatedly attributed to anaesthetic medications rather than an ongoing intracranial cause. Adviser 2 said that this suggests that the paediatricians, anaesthetists and neurosurgeons were not 'on the same page' regarding Baby A's condition.

47. Secondly my complaints reviewer asked Adviser 2 to comment on the communication between the neurosurgical team and Mrs and Mr C. Adviser 2 said that they did not feel they had enough evidence to comment on this matter definitively. They commented that in the few entries made by the neurosurgical team in the medical records, communication with the family is documented, which is a positive sign. Additionally, Adviser 2 noted that consent forms for each of the three operations were appropriately completed and signed which indicated Mrs and Mr C were communicated with at those points.

Admission on 7 August 2015 – Anaesthetist (Adviser 3)

48. My complaints reviewer asked Adviser 3 whether they considered reasonable anaesthetics to have been administered to Baby A throughout his time in the Hospital on 7 and 8 August 2015. Adviser 3 said that the same consultant anaesthetist appears to have administered anaesthetics for each of the three operations and said that this was reasonable as they were likely to

have been on call for a period of 24 hours. Adviser 3 said that there was no evidence that the anaesthetics were not performed appropriately or to a reasonable standard.

49. My complaints reviewer then asked Adviser 3 to comment on the action of the anaesthetic team after Baby A's first operation. Adviser 3 explained that after the first operation, Baby A was transferred to the HDU and sedated via a drip, which Adviser 3 said is standard for paediatric cases to allow the patient to tolerate transfer from theatre and treatment. Adviser 3 noted that during the Board's internal investigation, the consultant anaesthetist stated that they expected Baby A to awake fully 'within 15 minutes of the end of the procedure'. However, Adviser 3 said that Baby A would not have woken until the sedative infusions were turned off.

50. Adviser 3 said that one reading of the statement is that the anaesthetist would have expected the HDU staff to have turned off the sedation once Baby A arrived in the HDU and wake him soon after to allow his neurological status to be determined. However, Adviser 3 noted that sedation was continued until around 11:00. Adviser 3 said that there could be several explanations for this, which may include continuing the sedation whilst the nursing team settled Baby A into the HDU. Another reading of the anaesthetist's statement, Adviser 3 said, was that once Baby A's sedation was stopped the anaesthetist would have expected him to return to a normal level of consciousness within 15 minutes. Adviser 3 said that it would not have been unreasonable for the consultant anaesthetist to return to theatre and expect the paediatric HDU staff to manage this part of Baby A's care.

51. Adviser 3 said that whilst the post-operative instructions as written by the anaesthetist did not specifically instruct staff to wake Baby A, it would be normal practice after the revision of a VP shunt to attempt to wake the patient as soon as possible so that their neurological status could be assessed. Adviser 3 noted that Baby A was reviewed by an anaesthetic registrar at 11:15, and extubated Baby A at 13:20. It appears from the nursing notes that once Baby A had been extubated, the anaesthetic registrar also contacted the neurosurgical team asking them to review Baby A.

52. Adviser 3 said that there would be no requirement for the anaesthetic team to review Baby A personally, and that it would be reasonable for them to believe that the paediatric and neurosurgical teams would appropriately review

and manage Baby A, but that in fact an anaesthetic registrar reviewed Baby A several times and recommended neurosurgical review. Adviser 3 considered the anaesthetists to have provided appropriate care to Baby A.

53. When my complaints reviewer asked Adviser 3 about the communication between the anaesthetists and Mrs and Mr C, Adviser 3 explained that the anaesthetists would not have any continuing care responsibility for Baby A, and, therefore, would only be obliged to communicate with Mrs and Mr C in relation to the anaesthetics that were being administered, at the point of administration. Adviser 3 considered that it would have been the responsibility of the paediatric and neurosurgical teams to communicate with Mrs and Mr C.

(a) Decision

54. The complaint that I have investigated is that the Board did not provide a reasonable standard of treatment when Baby A became unwell in August 2015, and my investigation has revealed a number of concerning issues in relation to this matter.

55. The advice I have received from Adviser 1 is that, when Baby A presented at A&E on 6 August 2015, there was a failure to document head circumference and a failure to check a high blood pressure measurement. Adviser 1 said that, particularly in relation to head circumference being measured, they would have expected this to be done, and I accept this advice. However, I note that Adviser 1 was not able to comment as to whether these failures contributed to the final outcome of this case. I also note that the Board's internal investigation identified these failures and that as a result they now ensure that any child attending hospital for any reason who has a VP shunt in place will be discussed with the on call neurosurgical consultant. I, therefore, consider the action taken by the Board has addressed the identified failures.

56. I further note Adviser 1's comments that in situations of joint care, such as that of neurosurgical and paediatric in this case, it is important for the roles of each team to be made completely clear. Adviser 1 considered that there should have been a discussion between neurosurgical and paediatric consultants when it became clear that Baby A's condition was not improving and I accept this advice. I consider that as paediatrics were the lead team in the care of Baby A they should have been more pro-active in discussing Baby A's condition and developing a care plan with the neurosurgical team, as well as communicating with Mrs and Mr C.

57. In relation to the neurosurgical care and treatment provided to Baby A, Adviser 2 highlighted a number of concerns. I am critical of the fact that the Board's internal investigation focussed heavily on the shunt tap attempt as carried out by the neurosurgical registrar prior to Baby A's investigation. Whilst I accept the advice that the failure to discuss this with a consultant or document it in the medical records was a significant breach in professional standards, Adviser 2 also identified that it is unlikely that the tap attempt had an impact on Baby A's continued management or clinical status. Therefore, I am concerned that the Board's investigation focussed on this as a possible reason for Baby A's continued deterioration after the first operation. I note that the neurosurgical registrar in question is now working for a different health board and, therefore, my recommendations to the Board at the end of this report will not address the matter of the failure to discuss or document the shunt tap.

58. Furthermore, I note Adviser 2's comments regarding the poor documentation in medical records by the neurosurgical team. Adviser 2 said that due to the lack of documentation they found it difficult to understand the decision making process of the neurosurgical team. They considered the lack of documentation suggested that the clinicians involved did not have a full understanding of the important clinical factors in assessing young children with neurological problems. I am critical of the lack of documentation in the medical records, particularly in the areas highlighted by Adviser 2 such as neurological assessment pre- and post- operations.

59. Adviser 2 noted that there was some delay in undertaking Baby A's first operation, but stated that their main concerns regarding the treatment provided to Baby A during the admission of August 2015 were in relation to the delay after the first operation. I accept Adviser 2's advice that the lack of any post-operative review by a neurosurgeon of any seniority for seven hours after the first operation is of grave concern as a child with depressed consciousness levels following cranial surgery is a life threatening situation.

60. As a result of their internal investigation the Board reviewed the neurosurgical on-call system to ensure calls to assess deteriorating patients can be responded to urgently. The Board also provided evidence that the neurosurgical team are now clearly indicating post-operative instructions in the case record and verbally, including when the child will be reviewed by a member of their team. I do not consider this to adequately address the issue

that arose in this case, which was that Baby A was not reviewed for some seven hours after undergoing surgery to revise his shunt in the first instance.

61. I accept the advice that the decision to select each operation performed at each stage was reasonable, but that the delay between each operation was not acceptable. I further note Adviser 2's comments that, according to the Society of British Neurosurgeon's guidelines, Baby A's condition should have been discussed with the Specialist Centre as soon as it became clear that his condition was not improving after the first operation. The Board's revised neurosurgical patient pathway for children, which was developed as a result of their internal review, states that the decision to transfer to a specialist unit should be made by the on-call neurosurgeon, but does not specify when a case should be discussed with a specialist unit. I consider that it would be useful for the Board to have guidance on when children should be discussed with a specialist unit.

62. Adviser 2 considered the communication between the neurosurgical team and the paediatric and anaesthetic teams to be inadequate, and I agree with this conclusion. It is evident that there was no clear understanding of the seriousness of Baby A's neurological signs and that there was no review plan put in place by the neurosurgical team for ongoing assessment of Baby A. I consider this to be unreasonable.

63. With regards to communication between the neurosurgical team and Mrs and Mr C, I note that Adviser 2 identified that consent for each operation was appropriately obtained, indicating that Mrs and Mr C were communicated with at this point; and that entries in the medical records by the neurosurgical team document communication with Mrs and Mr C. However, given that this investigation has identified that after the first operation there was no review by the neurosurgical team for seven hours, it is apparent that during this time there was no communication with Mrs and Mr C from the neurosurgical team. Given the seriousness of Baby A's condition when he was admitted into hospital I would have expected to see clear communication with Mrs and Mr C from those caring for Baby A.

64. With regards to the treatment provided to Baby A by the anaesthetist, I accept the advice that the anaesthetics for each operation undertaken were reasonable. I also accept Adviser 3's comments that it was reasonable for the consultant anaesthetist to return to theatre and expect the paediatric and HDU

staff to manage Baby A's care after each operation. Adviser 3 was not critical that the anaesthetist's post-operative instructions did not specifically instruct staff to wake Baby A at any point, as they said it would be normal practice to wake a patient as soon as possible after a revision of a VP shunt.

65. I consider the fact that Baby A was not taken off sedatives until 11:00 and no attempt was made to wake him to be further evidence that there was no clear plan in place to assess Baby A after the first operation. It is also apparent that there was lack of understanding of how Baby A's condition should have been progressing. I accept Adviser 3's comments that this was not a failing on the part of the anaesthetists but rather an overall lack of awareness in the clinicians that were responsible for Baby A's ongoing care of how to best manage his condition.

66. In view of the failings identified, I uphold this complaint. Mrs C has described the deep distress felt by her and Mr C as a result of the death of Baby A, and my investigation indicates that failings in care likely contributed to this tragic outcome. I recognise that the findings of this report will have a further serious impact on them and I acknowledge how difficult it must have been for them to pursue their complaint.

67. When Mrs C brought her complaint to me, she said that she wanted to see a structured plan of improvement that will be made to the service to ensure the safety of children admitted to the Hospital. I hope that my report will provide reassurance to her that this will happen. My recommendations for the Board are at the end of this report.

(b) The Board failed to reasonably communicate with Mrs and Mr C following Baby A's death

Concerns raised by Mrs C

68. Mrs C told us that her and Mr C felt that there had been unacceptable delays in communicating with them after Baby A's death. She said that their ability to come to terms with what had happened had been significantly affected by the delays in communication from the Board.

69. Mrs C explained that after Baby A died, they had received letters of support from the team involved in his care at the Specialist Centre, and that they had been offered the opportunity to meet with them to discuss what happened to Baby A and ask questions. Mrs C said that the Specialist Centre's

staff were very open about what they felt they could learn from Baby A's death and that this had been helpful for them to try and come to terms with losing Baby A. However, Mrs C said that they had received no communication at all from the Board's team. Mrs C said that although Baby A died under the care of the Specialist Centre, which is in a different health board's region, he had been in hospital under the care of the Board for many months and she felt that they had a good relationship with many of the professionals involved in Baby A's care. Mrs C said that she did not understand why they had not been offered any support from the Board following Baby A's death. Additionally, Mrs C said that they had not been told by the Board that an internal investigation was being carried out into Baby A's care.

70. Mrs C also told us that whilst the Board had originally said that once the internal investigation into Baby A's care had been completed there could be a three way meeting involving staff from the Specialist Centre in order to discuss the report. Mrs C said that when the report was finalised this approach was not offered.

The Board's response

71. When responding to Mrs C's original complaint, the Board explained that the normal process would be for the lead clinician to write and offer to meet, but that the lead paediatric consultant had not been formally notified of Baby A's death. The Board apologised for this and accepted that this did not excuse the fact that until Mrs C wrote her letter of complaint she had not received any form of communication from the Board.

72. The Board further explained in a letter to Mrs and Mr C's MSP that although the management team felt it appropriate to commence an investigation in the care pathway during Baby A's episode of care, it was not felt appropriate to ask a consultant to make contact with the family until formal correspondence was received from the Specialist Centre's team. The Board said that unfortunately, correspondence from the Specialist Centre was with the neurosurgery team and the paediatric team was not aware of the letter until much later.

Medical advice

73. My complaints reviewer asked Adviser 1 to comment on the Board's failure to communicate with Mrs and Mr C following Baby A's death, and their position that this was due to the paediatric lead consultant not being formally notified of

the death. Adviser 1 considered this to be inexcusable. Adviser 1 explained that a baby who had suffered from meningitis, as Baby A had, would be well known to the local paediatric team and would have been regularly followed up by them. Adviser 1 said that most units will have a log-book of children who are transferred out to specialist centres and often will contact them for progress reports. Adviser 1 noted that contact can sometimes be lost when a patient is in a specialist unit for a long time, but said that they would find it very surprising if the Board were not informed of the death by the Specialist Centre, and that the Board should not have needed to wait for 'formal' notification. Adviser 1 considered there to have been a serious breakdown of communication and said that they would have expected the consultant who had been on-call during the episode of care in question or the lead consultant at the Hospital for Baby A to have offered to meet the family soon after Baby A's death to review what happened during the admission to the Hospital.

74. Adviser 2 agreed with Adviser 1 on this point. Adviser 2 said that it was interesting to note that the consultant neurosurgeon from the Specialist Centre wrote to the family after Baby A's death expressing their condolences and stating that they were planning to review Baby A's case, but that there was no similar letter from the Board. Adviser 2 said that it would seem reasonable for the professionals involved in Baby A's care, including the consultant neurosurgeon responsible, to have offered to meet Baby A's family after his death to discuss the events at the Hospital to give them some explanation and closure.

75. My complaints reviewer also asked Adviser 3 to comment on this issue. Adviser 3 again commented that the anaesthetic consultant had no ongoing responsibility of care for Baby A and, therefore, it would be unlikely that they would have been informed of Baby A's death. Adviser 3 did not consider it unreasonable of the anaesthetics team not to take steps to communicate with Mrs and Mr C after Baby A's death.

(b) Decision

76. The advice I have received is that it was unacceptable that the Board failed to communicate with Mrs and Mr C following Baby A's death, and I accept this advice. I consider it unreasonable that it was not until Mrs C made a complaint to the Board that they discussed Baby A's care with her, and do not consider it acceptable that the onus was on Mrs and Mr C to initiate communication regarding these issues.

77. I note the Board's explanation that the lead paediatric consultant had not been formally notified of Baby A's death and that they did not feel it was appropriate to ask a consultant to make contact with the family until formal correspondence had been received from the clinicians at the Specialist Centre. This explanation is inadequate. Adviser 1 said that there would not have been a need to wait for 'formal' notification, and that there should have been contact from either the consultant who had been on call during the episode of care in question or the lead consultant at the Hospital to offer a meeting soon after Baby A's death. I accept this advice, and, therefore, uphold this complaint.

Recommendations

What we are asking the Board to do for Mrs C:

Complaint	What we found	What the organisation should do	Evidence SPSO needs to check that this has happened and the deadline
(a)	There were multiple failings in care and treatment provided to Baby A when he became unwell in August 2015; and the Board failed to reasonably communicate with Mrs and Mr C following Baby A's death	Apologise to Mrs and Mr C for the failings in care and treatment provided to Baby A when he became unwell in August 2015; and for failing to reasonably communicate with Mrs and Mr C following Baby A's death	Copy of apology letter By: 19 July 2017

We are asking the Board to improve the way they do things:

Complaint	What we found	What should change	Evidence SPSO needs to check that this has happened and deadline
(a)	There was a lack of clarity regarding the roles of each team in the care and treatment of Baby A	Roles of each team in situations of joint care (for example neurosurgical and paediatric) should be made clear	Evidence of consideration by the Board as to how teams can clarify roles in situations of joint care By: 16 August 2017
(a)	There was no 'consultant to consultant' discussion when it became clear that Baby A's condition was not improving	Consultants in situations of joint care should discuss a child's presentation when it becomes clear that their condition is not improving	Evidence that this has been fed back to relevant staff (for example, a copy of the minutes of discussion of the complaint at a staff meeting or of internal memos/emails, or documentation showing feedback given about the complaint) By: 19 July 2017

Complaint	What we found	What should change	Evidence SPSO needs to check that this has happened and deadline
(a)	The Board's internal investigation focussed on the shunt tap attempt as a reason for Baby A's continued deterioration, when in fact it is unlikely that this had any impact on Baby A's clinical status	Internal investigations should involve the appropriate specialisms to identify what issues are pertinent to an episode of care	Evidence that this has been fed back to relevant staff By: 19 July 2017
(a)	There was poor record-keeping by the neurosurgical team	Records made by all clinicians should be in line with national guidance and note all relevant factors in decision making	Evidence that this has been fed back to relevant staff By: 19 July 2017
(a)	There was a failure of the neurosurgical team to document any neurological assessment of Baby A pre- or post-operatively	Neurological assessment should be fully carried out and recorded both before and after operations to revise a ventriculo-peritoneal shunt	Evidence that this has been fed back to relevant staff and evidence that the Board have considered implementing guidelines with regards to neurological assessment pre- and post-ventriculo-peritoneal shunt revision By: 16 August 2017

Complaint	What we found	What should change	Evidence SPSO needs to check that this has happened and deadline
(a)	There was a lack of post-operative review of Baby A by the neurosurgical team	There should be clear plans in place to review children in a timely manner after neurosurgical procedures	Copy of protocols put in place which note time stipulations for reviewing children after ventriculo-peritoneal shunt revision By: 13 September 2017
(a)	Baby A's condition was not discussed with the specialist paediatric neurosurgery unit until after the second operation	Clinicians should be clear when to discuss cases with specialist units, rather than it being left to the discretion of the individual clinician.	Copy of more specific guidance on which children should be discussed with specialist units By: 13 September 2017
(a)	There was a lack of communication from the neurosurgical team with Mrs and Mr C	Clinicians should be clearly communicating with parents of children in the high dependency unit	Evidence that this has been fed back to relevant staff By: 19 July 2017
(b)	Until Mrs C made a complaint, Board staff did not communicate with Mrs and Mr C after the death of Baby A	Relevant clinical and management staff should initiate communication with the family soon after a child dies	Copy of protocol which stipulates arrangements for communication after a child dies By: 13 September 2017

78. The Board have accepted the recommendations and will act on them accordingly. We will follow-up on these recommendations. The Board are asked to inform us of the steps that have been taken to implement these recommendations by the date specified. We will expect evidence (including supporting documentation) that appropriate action has been taken before we can confirm that the recommendations have been implemented.

Annex 1

Explanation of abbreviations used

Mrs C	the complainant
Baby A	the aggrieved, Mrs C's late son
the Board	Greater Glasgow and Clyde NHS Board
Mr C	Mrs C's husband and Baby A's father
Adviser 1	a paediatrician
Adviser 2	a neurosurgeon who practices mainly in the area of paediatric neurosurgery
Adviser 3	an anaesthetist
VP	ventriculo-peritoneal
A&E	Accident and Emergency Department
the Hospital	Royal Aberdeen Children's Hospital
CT	computerised tomography
HDU	high dependency unit
EVD	external ventricular drain
the Specialist Centre	a specialist paediatric neurosciences centre in a different health board area

Annex 2

Glossary of terms

aseptic	surgically sterile
computerised tomography (CT) scan	a scan that uses x-rays and a computer to create details images of the inside of the body
cranial	relating to the skull
external ventricular drain (EVD)	a medical device that relieves pressure on the brain by draining excess fluid to the outside of the head
extubated	the tube assisting breathing being removed
fontanelle	the top of the head at the front
fourth ventricle	the cavity at the back and bottom of the brain
hydrocephalus	accumulation of fluid within the brain
intubated	having a tube in place to maintain an open airway
post-meningitis hydrocephaly	an accumulation of fluid within the brain due to an infection of the protective membranes that surround the brain and spinal cord
ventriculo-peritoneal (VP) shunt	a medical device that relieves pressure on the brain by draining excess fluid into the abdominal cavity