

Hyponatraemia - Clinician Questionnaire

A. Introduction

What is this study about?

To identify and explore avoidable and modifiable factors in the care of adults with abnormal levels of blood sodium in hospital.

Inclusions

Patients aged 18 or over who were admitted to hospital between 1st October 2023 and 31st December 2023 and diagnosed with Hyponatraemia or Hypernatremia. Patients who develop abnormal sodium levels after a surgical procedure during the study period are also included.

There are 2 clinician questionnaires for this study. This questionnaire is for patients with HYPONATRAEMIA.

If the patient did not have hyponatraemia during the admission please contact NCEPOD so the case can be removed from the study

Please telephone NCEPOD on 0207 251 9060 or email sodium@ncepod.org.uk

Who should complete this questionnaire?

This questionnaire should be completed by the named consultant, or the most appropriate clinician, responsible for the patients care when they were treated for abnormal blood sodium.

Impact of NCEPOD

Recommendations from NCEPOD reports have had an impact on many areas of healthcare including: Development of the NICE 'Acutely ill patients in hospital guideline' (CG50) - following publication of the 2005 'An Acute Problem' report.

Appointment of a National Clinical Director for Trauma Care - following publication of 'Trauma: Who Cares?' 2007. Development of NICE Clinical Guidelines for Acute Kidney Injury, published in 2013 - 'Adding Insult to Injury' 2009.

Development of ICS Standards for the care of adult patients with a temporary Tracheostomy, published 2014 - 'On the right trach?' 2014.

Development of guidelines from the British Society of Gastroenterology: diagnosis and Management of acute lower gastrointestinal bleeding, published 2019 - 'Time to Get Control' 2015.

Development of the British Thoracic Society's Quality Standards for NIV, published 2018 - 'Inspiring Change' 2017

Questions or help

Further information regarding this study can be found here: <https://www.ncepod.org.uk/Bloodsodium.html>
If you have any queries about this study or this questionnaire, please contact: sodium@ncepod.org.uk or telephone 0207 251 9060.

About NCEPOD

The National Confidential Enquiry into Patient Outcome and Death (NCEPOD) reviews healthcare practice by undertaking confidential studies, and make recommendations to improve the quality of the delivery of care, for healthcare professionals and policymakers to implement. Data to inform the studies are collected from NHS hospitals and Independent sector hospitals across England, Wales, Northern Ireland and the Offshore Islands. NCEPOD are supported by a wide range of bodies and the Steering Group consists of members from the Medical Royal Colleges and Specialist Associations, as well as observers from The Coroners Society of England and Wales, and the Healthcare Quality Improvement Partnership (HQIP).

This study was commissioned by The Healthcare Quality Improvement Partnership (HQIP) as part of the Clinical Outcome Review Programme into Medical & Surgical care.

This questionnaire is for reviewing patients who had HYPONATRAEMIA. If the patient did not have hyponatraemia during the admission please contact NCEPOD so the case can be removed from the study

Please telephone NCEPOD on 0207 251 9060 or email sodium@ncepod.org.uk

Case Summary

1. Please use this space to provide a brief overview of the admission to hospital.

To be included in the study the patient must be 18 or over and have an abnormal blood sodium in hospital

2a. Age at presentation to hospital?

 years

Unknown

Value should be no less than 18

2b. Sex

Male Female Other Unknown

2c. Ethnicity

- White British/White - other
- Black/African/Caribbean/Black British
- Asian/Asian British (Indian, Pakistani, Bangladeshi, Chinese, other Asian)
- Mixed/Multiple ethnic groups
- Unknown

If not listed above, please specify here...

3a. Patient's usual place of residence

Own home Residential home Nursing home Homeless
 Unknown

If not listed above, please specify here...

3b. Was the patient receiving any Social support/care?

Yes No Unknown

4. Please make an estimation of the patient's Rockwood Clinical Frailty score prior to the admission:

https://www.england.nhs.uk/south/wp-content/uploads/sites/6/2022/02/rockwood-frailty-scale_.pdf

- | | | |
|---|--|---|
| <input type="radio"/> 1. Very Fit | <input type="radio"/> 2. Well | <input type="radio"/> 3. Managing Well |
| <input type="radio"/> 4. Vulnerable | <input type="radio"/> 5. Mildly Frail | <input type="radio"/> 6. Moderately Frail |
| <input type="radio"/> 7. Severely Frail | <input type="radio"/> 8. Very Severely Frail | <input type="radio"/> 9. Terminally Ill |
| <input type="radio"/> Unable to ascertain | | |

5a. Did the patient have any co-morbidities pre-dating this admission?

- Yes No Unknown

5b. If answered "Yes" to [5a] then:

Which co-morbidities?

Please tick all that apply (Charlson Comorbidity Index)

- | | |
|--|---|
| <input type="checkbox"/> AIDS | <input type="checkbox"/> Bronchiectasis |
| <input type="checkbox"/> Coronary artery disease | <input type="checkbox"/> Congestive cardiac failure |
| <input type="checkbox"/> Chronic liver disease | <input type="checkbox"/> COPD |
| <input type="checkbox"/> Cancer (metastatic) | <input type="checkbox"/> Cancer (localised) |
| <input type="checkbox"/> Connective tissue disease | <input type="checkbox"/> Dementia |
| <input type="checkbox"/> Diabetes Type 1 | <input type="checkbox"/> Diabetes Type 2 |
| <input type="checkbox"/> Hemiplegia | <input type="checkbox"/> Hypertension |
| <input type="checkbox"/> Leukemia | <input type="checkbox"/> Lymphoma |
| <input type="checkbox"/> Moderate or severe kidney disease | <input type="checkbox"/> Multiple sclerosis |
| <input type="checkbox"/> Myocardial infarction | <input type="checkbox"/> Parkinsons |
| <input type="checkbox"/> Pulmonary fibrosis | <input type="checkbox"/> Previous stroke |
| <input type="checkbox"/> Peripheral vascular disease | <input type="checkbox"/> Peptic ulcer disease |
| <input type="checkbox"/> Transient ischaemic attack | |

Please specify any additional options here...

6a. Did the patient have a documented learning disability or autism?

- Yes No Unknown

6b. If answered "Yes" to [6a] then:

Please provide details

C. Arrival to hospital/initial assessment

1a. Date of arrival to hospital

Unknown

1b. Time of arrival to hospital

Unknown

2a. Type of admission

- Emergency Elective/Planned Transfer Unknown

If not listed above, please specify here...

**2b. If answered "Elective/Planned" to [2a] then:
Reason for elective/planned admission**

2c. Was the patient an inpatient within the last 30 days of this admission?

- Yes No Unknown

**2d. If answered "Yes" to [2c] then:
Was this for hyponatraemia?**

- Yes No Unknown

**2e. If answered "Yes" to [2c] and "No" to [2d] then:
Reason for recent inpatient admission**

3a. Location of first hospital review

- Emergency department Medical assessment unit
 Same day emergency care service Other medical ward
 Surgical assessment unit Other Surgical ward
 Unknown

If not listed above, please specify here...

3b. Date of first review

Unknown

3c. Time of first review

Unknown

4a. GCS on arrival

- 15 14 13
 12 11 10
 9 8 7
 6 5 4
 3 Not recorded as ACVPU used Unknown

4b. ACVPU on arrival

- Alert Confused Verbal
 Pain Unresponsive Not recorded as GCS recorded
 Unknown

5a. Prior to admission, was the patient taking any drugs that could contribute to an abnormal blood sodium?

See list below for applicable drugs

- Yes No Unknown

5b. If answered "Yes" to [5a] then:

Which of the following drugs was the patient taking prior to admission?

Please list others that may be relevant to an abnormal blood sodium

- | | | |
|--|--|---|
| <input type="checkbox"/> Anticancer agents | <input type="checkbox"/> Antidepressants | <input type="checkbox"/> Antiseizure medication |
| <input type="checkbox"/> Antihypertensive agents | <input type="checkbox"/> Antipsychotic drugs | <input type="checkbox"/> Diuretics |
| <input type="checkbox"/> Rivastigmine | <input type="checkbox"/> Opioid drugs | <input type="checkbox"/> NSAIDs |
| <input type="checkbox"/> Voriconazole | <input type="checkbox"/> Desmopressin | <input type="checkbox"/> 3,4-MDMA |
| <input type="checkbox"/> Steroids - oral | <input type="checkbox"/> Steroids - inhaled | |

Please specify any additional options here...

5c. If answered "Anticancer agents", "Antidepressants", "Antiseizure medication", "Antihypertensive agents", "Antipsychotic drugs" or "Diuretics" to [5b] then: Please specify which drug(s)?

If one of the groups of drugs is selected e.g. anticancer or diuretics, please specify the drug the patient was taking

What were the patient's first blood biochemistry results in hospital?

Please put not applicable if the particular measurement was not done

6a. Na+

 mmol/L

- Unknown

6b. K+

 mmol/L

- Not Applicable Unknown

6c. Urea

 mmol/L

- Not Applicable Unknown

6d. Creatinine

 μmol/L

- Not Applicable Unknown

6e. Glucose

 mmol/L

- Not Applicable Unknown

6f. Were these ED point of care or laboratory biochemistry results?

- Point of care Laboratory Unknown

6g. Date of the first bloods

- Unknown

6h. Time of the first bloods

- Unknown

If the above blood biochemistry results were from point of care testing, what were the first laboratory blood biochemistry results?

**7a. If answered "Point of care" to [6f] then:
Na+**

Unknown

**7b. If answered "Point of care" to [6f] then:
K+**

Not Applicable Unknown

**7c. If answered "Point of care" to [6f] then:
Urea**

Not Applicable Unknown

**7d. If answered "Point of care" to [6f] then:
Creatinine**

Not Applicable Unknown

**7e. If answered "Point of care" to [6f] then:
Glucose**

Not Applicable Unknown

**7f. If answered "Point of care" to [6f] then:
Date of first lab bloods**

Unknown

**7g. If answered "Point of care" to [6f] then:
Time of first lab bloods**

Unknown

8. Was an assessment of the patient's fluid status undertaken as part of the initial assessment?

Yes No Unknown

Diagnosis - Emergency Admissions

**9a. If answered "Emergency" to [2a] then:
Working diagnosis on admission**

- Acute cerebral event
- Post neurosurgical procedure
- Acute or Chronic heart failure
- Ascites
- Head injury
- Subarachnoid haemorrhage
- Renal disease
- Syndrome of inappropriate ADH (SIADH)
- Adrenal insufficiency
- Polydipsia Anorexia nervosa
- Beer potomania
- Exercise excess
- Diarrhoea and vomiting
- Third space losses (bowel obstruction, pancreatitis, sepsis , trauma etc)
- Hyperproteinaemia (including multiple myeloma)
- Hypertriglyceridaemia
- Hyperglycaemia
- Alcohol Abuse
- Malnutrition
- Dementia Acute confusional state
- Vasopressin related polyuria (Diabetes Insipidus)
- Chronic Lung disease
- Epilepsy

Please specify any additional options here...

**9b. If answered "Emergency" to [2a] then:
What type of hyponatraemia did the patient have?**

- Hypotonic (true) hyponatraemia
- Hypervolaemic (volume overload) hyponatraemia
- Euvolaemic hyponatraemia
- Hypertonic (hyperosmolar) hyponatraemia
- Pseudo hyponatraemia
- Unknown

If not listed above, please specify here...

**9c. If answered "Emergency" to [2a] then:
What was the severity of the patients hyponatraemia?**

- Mild
- Moderate
- Severe
- Unknown

If not listed above, please specify here...

**9d. If answered "Emergency" to [2a] then:
Was this acute or chronic hyponatraemia?**

Acute - duration of less than 48 hours

- Acute
- Chronic
- Unknown

**10a. If answered "Emergency" to [2a] then:
Was a diagnosis of hyponatraemic encephalopathy (neurological symptoms) made on admission?**

- Yes
- No
- Unknown

10b. If answered "Yes" to [10a] then:

What symptoms of hyponatraemic encephalopathy did the patient have?

Please tick all that apply

- | | |
|--|--|
| <input type="checkbox"/> Nausea | <input type="checkbox"/> Fatigue |
| <input type="checkbox"/> Gait Problems | <input type="checkbox"/> Attention Deficit |
| <input type="checkbox"/> Falls | <input type="checkbox"/> Bone fractures |
| <input type="checkbox"/> Vomiting | <input type="checkbox"/> Headaches |
| <input type="checkbox"/> Visual disturbance | <input type="checkbox"/> Seizures |
| <input type="checkbox"/> Noncardiogenic pulmonary oedema | <input type="checkbox"/> Loss of consciousness |
| <input type="checkbox"/> Respiratory arrest | <input type="checkbox"/> Unknown |
| <input type="checkbox"/> None | |

Please specify any additional options here...

11. If answered "Emergency" to [2a] then:

Ward patient first admitted

- | | | |
|--|--|--|
| <input type="radio"/> Acute medical unit | <input type="radio"/> General medical | <input type="radio"/> Care of the elderly |
| <input type="radio"/> Neurology | <input type="radio"/> Endocrinology | <input type="radio"/> Renal |
| <input type="radio"/> Cardiology | <input type="radio"/> General Surgical | <input type="radio"/> Upper/lower GI surgery |
| <input type="radio"/> Orthopaedic | <input type="radio"/> Critical Care | |

If not listed above, please specify here...

D. Surgery

1a. Did the patient develop hyponatraemia after a procedure/surgery?

If the answer is No, please move to the next section

- Yes No Unknown

If the patient had more than one surgery/procedure during the admission please answer the following questions in relation to the surgery/procedure closest to the development of hyponatraemia

1b. If answered "Yes" to [1a] then:

What surgery/procedure(s) was undertaken?

1c. If answered "Yes" to [1a] then:

Date of surgery/procedure?

Unknown

1d. If answered "Yes" to [1a] then:

Time of surgery/procedure

Unknown

2. If answered "Yes" to [1a] then:

During the surgery/procedure was goal directed fluid therapy used?

- Yes No Unknown

3a. If answered "Yes" to [1a] then:

Was a fluid maintenance regime prescribed?

- Yes No Unknown

3b. If answered "Yes" to [1a] and "Yes" to [3a] then:

What was the prescribed fluid maintenance regime?

3c. If answered "Yes" to [1a] and "Yes" to [3a] then:

Grade of prescriber

- Basic grade (FY1 or 2) Specialist trainee (ST1-2) Specialist trainee (ST3+)
 Speciality doctor Consultant Unknown

If not listed above, please specify here...

3d. If answered "Yes" to [1a] and "Yes" to [3a] then:

Specialty of prescriber

4. If answered "Yes" to [1a] then:

Is there evidence that an enhanced recovery pathway was being followed?

- Yes No Unknown

5a. If answered "Yes" to [1a] then:

Date of first low blood sodium measurement

Unknown

**5b. If answered "Yes" to [1a] then:
Time of first low blood sodium measurement**

Unknown

What was the patient's first low blood sodium measurement post surgery

**5c. If answered "Yes" to [1a] then:
Na+**

 mmol/L

Unknown

Other electrolyte measurements at the time of the low sodium measurement

Please put not applicable if the particular measurement was not done

**5d. If answered "Yes" to [1a] then:
K+**

 mmol/L

Not Applicable Unknown

**5e. If answered "Yes" to [1a] then:
Urea**

 mmol/L

Not Applicable Unknown

**5f. If answered "Yes" to [1a] then:
Creatinine**

 $\mu\text{mol/L}$

Not Applicable Unknown

**5g. If answered "Yes" to [1a] then:
Glucose**

 mmol/L

Not Applicable Unknown

Sodium measurements

1a. Date of lowest blood sodium measurement during this admission

Unknown

1b. Time of lowest blood sodium measurement during this admission

Unknown

1c. What was the lowest blood sodium measurement during the admission?

 mmol/L

Unknown

Other electrolyte measurements at the time of the lowest sodium measurement

Please put not applicable if the particular measurement was not done

1d. K+

 mmol/L

Not Applicable Unknown

1e. Urea

 mmol/L

Not Applicable Unknown

1f. Creatinine

 μmol/L

Not Applicable Unknown

1g. Glucose

 mmol/L

Not Applicable Unknown

Imaging

2a. Was any imaging undertaken during the admission?

Yes No Unknown

**2b. If answered "Yes" to [2a] then:
What imaging was undertaken?**

Please tick all that apply

CT Head CT Thorax CT Abdomen/Pelvis MRI Head
 Chest X ray Abdomen U/S

Please specify any additional options here...

**2c. If answered "Yes" to [2a] then:
Did the imaging alter the hyponatraemia treatment plan?**

Yes No Unknown

**2d. If answered "Yes" to [2c] then:
Please expand on your answer (imaging)**

Tests and Investigations

3a. What other tests were undertaken during this admission?

Please tick all that apply. If none then please indicate this in the other

- | | | |
|---|--|--|
| <input type="checkbox"/> Liver Function Tests | <input type="checkbox"/> NT Pro-Beta Naturetic Peptide | <input type="checkbox"/> Thyroid Function |
| <input type="checkbox"/> Cortisol | <input type="checkbox"/> Urine osmolality | <input type="checkbox"/> Plasma/serum osmolality |
| <input type="checkbox"/> Urine sodium | <input type="checkbox"/> Bone profile | |

Please specify any additional options here...

**3b. If answered "Urine osmolality" to [3a] then:
Urine osmolality**

| | | |
|-------------------------------|---------|----------------------------------|
| <input type="text" value=""/> | mOsm/kg | <input type="checkbox"/> Unknown |
|-------------------------------|---------|----------------------------------|

**3c. If answered "Urine osmolality" to [3a] then:
Time urine osmolality requested**

| | |
|-------------------------------|----------------------------------|
| <input type="text" value=""/> | <input type="checkbox"/> Unknown |
|-------------------------------|----------------------------------|

**3d. If answered "Urine osmolality" to [3a] then:
Date urine osmolality requested**

| | |
|-------------------------------|----------------------------------|
| <input type="text" value=""/> | <input type="checkbox"/> Unknown |
|-------------------------------|----------------------------------|

**3e. If answered "Urine osmolality" to [3a] then:
Date urine osmolality result received**

| | |
|-------------------------------|----------------------------------|
| <input type="text" value=""/> | <input type="checkbox"/> Unknown |
|-------------------------------|----------------------------------|

**3f. If answered "Urine osmolality" to [3a] then:
Time urine osmolality result received**

| | |
|-------------------------------|----------------------------------|
| <input type="text" value=""/> | <input type="checkbox"/> Unknown |
|-------------------------------|----------------------------------|

**3g. If answered "Plasma/serum osmolality" to [3a] then:
Plasma/serum osmolality**

| | | |
|-------------------------------|---------|----------------------------------|
| <input type="text" value=""/> | mOsm/kg | <input type="checkbox"/> Unknown |
|-------------------------------|---------|----------------------------------|

**3h. If answered "Plasma/serum osmolality" to [3a] then:
Date plasma/serum osmolality requested**

| | |
|-------------------------------|----------------------------------|
| <input type="text" value=""/> | <input type="checkbox"/> Unknown |
|-------------------------------|----------------------------------|

**3i. If answered "Plasma/serum osmolality" to [3a] then:
Time plasma/serum osmolality requested**

| | |
|-------------------------------|----------------------------------|
| <input type="text" value=""/> | <input type="checkbox"/> Unknown |
|-------------------------------|----------------------------------|

**3j. If answered "Plasma/serum osmolality" to [3a] then:
Date plasma/serum osmolality received**

| | |
|-------------------------------|----------------------------------|
| <input type="text" value=""/> | <input type="checkbox"/> Unknown |
|-------------------------------|----------------------------------|

**3k. If answered "Plasma/serum osmolality" to [3a] then:
Time plasma/serum osmolality received**

| | |
|-------------------------------|----------------------------------|
| <input type="text" value=""/> | <input type="checkbox"/> Unknown |
|-------------------------------|----------------------------------|

**3l. If answered "Cortisol" to [3a] then:
Cortisol**

| | | |
|-------------------------------|--------|----------------------------------|
| <input type="text" value=""/> | nmol/L | <input type="checkbox"/> Unknown |
|-------------------------------|--------|----------------------------------|

**3m. If answered "Cortisol" to [3a] then:
Date cortisol sample taken**

| | |
|-------------------------------|----------------------------------|
| <input type="text" value=""/> | <input type="checkbox"/> Unknown |
|-------------------------------|----------------------------------|

**3n. If answered "Cortisol" to [3a] then:
Time cortisol sample taken**

| | |
|-------------------------------|----------------------------------|
| <input type="text" value=""/> | <input type="checkbox"/> Unknown |
|-------------------------------|----------------------------------|

3o. If answered "Cortisol" to [3a] then:

Date cortisol result received

Unknown

3p. If answered "Cortisol" to [3a] then:

Time cortisol result received

Unknown

4a. Was the patient reviewed by the critical care outreach team during this admission?

Yes No Unknown

4b. Was the patient admitted to a level 2 (HDU) or level 3 (ICU) ward during the admission?

Yes No Unknown

4c. If answered "Yes" to [4b] then:

What level ward

Level 2 Level 3 Mixed level 2/3 Unknown

Treatment

5a. GCS when treatment started

- | | |
|-------------------------------|--|
| <input type="radio"/> 15 | <input type="radio"/> 14 |
| <input type="radio"/> 13 | <input type="radio"/> 12 |
| <input type="radio"/> 11 | <input type="radio"/> 10 |
| <input type="radio"/> 9 | <input type="radio"/> 8 |
| <input type="radio"/> 7 | <input type="radio"/> 6 |
| <input type="radio"/> 5 | <input type="radio"/> 4 |
| <input type="radio"/> 3 | <input type="radio"/> GCS not recorded as ACVPU used |
| <input type="radio"/> Unknown | |

5b. ACVPU when treatment started

- | | | |
|-------------------------------|------------------------------------|--|
| <input type="radio"/> Alert | <input type="radio"/> Confused | <input type="radio"/> Verbal |
| <input type="radio"/> Pain | <input type="radio"/> Unresponsive | <input type="radio"/> Not recorded as GCS recorded |
| <input type="radio"/> Unknown | | |

5c. What treatments did the patient receive?

- | | |
|--|--|
| <input type="checkbox"/> Diuretics | <input type="checkbox"/> 0.9% sodium chloride solution |
| <input type="checkbox"/> Enteral urea | <input type="checkbox"/> V2 receptor antagonists (vaptans) |
| <input type="checkbox"/> Hypertonic saline | <input type="checkbox"/> Other IV fluids |
| <input type="checkbox"/> Fluid restriction | <input type="checkbox"/> Demeclocycline |
| <input type="checkbox"/> None | |

Please specify any additional options here...

5d. If answered "Other IV fluids" to [5c] then:

Type of fluid

Hypertonic saline treatment

**5e. If answered "Hypertonic saline" to [5c] then:
What ward was the patient on when they received hypertonic saline solution?**

- ED Resus Critical care (level 2 or level 3)
 Endocrinology General medicine
 Unknown

If not listed above, please specify here...

**5f. If answered "Hypertonic saline" to [5c] and "ED Resus", "Endocrinology", "General medicine" or "Unknown" to [5e] then:
Grade of clinician that led the patients treatment?**

- Basic grade (FY1 or 2) Specialist trainee (ST1-2) Specialist trainee (ST3+)
 Speciality doctor Consultant Unknown

If not listed above, please specify here...

**5g. If answered "Hypertonic saline" to [5c] and "ED Resus", "Endocrinology", "General medicine" or "Unknown" to [5e] then:
Specialty of clinician**

**5h. If answered "Hypertonic saline" to [5c] then:
If yes to hypertonic saline was this by IV infusion or IV boluses?**

Answers maybe multiple

- IV infusion IV boluses

**5i. If answered "Hypertonic saline" to [5c] then:
What concentration of hypertonic saline solution was used?**

If more than one concentration was used please select the 'other' option.

- 1.8% 2.5% 5% Unknown

If not listed above, please specify here...

**5j. If answered "Hypertonic saline" to [5c] then:
How was hypertonic saline administered?**

- Peripheral cannula Mid line PiCC line
 Central/femoral line Unknown

If not listed above, please specify here...

**5k. If answered "Hypertonic saline" to [5c] then:
Were there any local complications of administration?**

Such as pain, swelling, skin damage, vascular thrombosis

- Yes No Unknown

**5l. If answered "Yes" to [5k] then:
What were the complications?**

**5m. If answered "IV infusion" to [5h] then:
Length of time hypertonic saline infused**

minutes Unknown

**5n. If answered "IV infusion" to [5h] then:
IV infusion volume**

ml Unknown

5o. If answered "IV boluses" to [5h] then:

Total volume of boluses

ml

Unknown

5p. If answered "Hypertonic saline" to [5c] then:

How long after the hypertonic saline treatment was the blood sodium concentration rechecked?

minutes

Unknown

5q. If answered "Hypertonic saline" to [5c] then:

Had the patient improved clinically after the initial hypertonic saline treatment?

Yes

No

Unknown

5r. If answered "Hypertonic saline" to [5c] then:

Was further hypertonic saline given?

Yes

No

Unknown

5s. If answered "Yes" to [5r] then:

Please provide details

6a. Was there overcorrection of blood sodium?

Yes

No

Unknown

6b. If answered "Yes" to [6a] then:

Was there an attempt to re-lower the blood sodium?

Yes

No

Unknown

6c. If answered "Yes" to [6b] then:

What was used

7a. After retrospectively reviewing this case do you think the choice of treatment for the hyponatraemia was appropriate?

Yes

No

Unknown

7b. If answered "No" to [7a] then:

Please expand on your answer

1a. Was there a complication of low blood sodium?

- Yes No Unknown

**1b. If answered "Yes" to [1a] then:
Complications**

Please tick all that apply

- Acute cerebral oedema
 Cerebral Vasospasm
 Osmotic demyelination (central pontine myelinolysis)
 Seizures

Please specify any additional options here...

2a. Discharge destination

Please note, death is one of the options listed

- Own home Residential home
 Nursing home Transferred to another hospital
 Death Unknown

If not listed above, please specify here...

2b. Date of discharge or death

Unknown

3a. If answered "Own home", "Residential home", "Nursing home", "Transferred to another hospital" or "Unknown" to [2a] then:

What was the patient's last blood sodium measurement before discharge from hospital?

mmol/L

Unknown

3b. If answered "Own home", "Residential home", "Nursing home", "Transferred to another hospital" or "Unknown" to [2a] then:

Date of blood sodium measurement

Unknown

3c. If answered "Own home", "Residential home", "Nursing home", "Transferred to another hospital" or "Unknown" to [2a] then:

Time of blood sodium measurement

Unknown

**4a. If answered "Own home", "Residential home" or "Nursing home" to [2a] then:
Were changes made to the patient's medications in relation to their hyponatraemia?**

- Yes No Not applicable Unknown

**4b. If answered "Yes" to [4a] then:
What changes were made?**

**4c. If answered "Yes" to [4a] then:
Were these communicated to the patient's GP in the discharge summary?**

- Yes No Unknown

5a. If answered "Own home", "Residential home", "Nursing home", "Transferred to another hospital" or "Unknown" to [2a] then:

After retrospectively reviewing this case are there any areas regarding the management of the patients hyponatraemia that you think could have been improved?

- Yes No Unknown

5b. If answered "Yes" to [5a] and "Own home", "Residential home", "Nursing home", "Transferred to another hospital" or "Unknown" to [2a] then:

Please provide details

Death and Mortality Review

6a. If answered "Death" to [2a] then:

Was the death directly or indirectly due to hyponatraemia?

- Yes - directly Yes - indirectly No Unknown

If not listed above, please specify here...

6b. If answered "Death" to [2a] then:

Was the patients case discussed at a morbidity and mortality meeting?

- Yes No Unknown

6c. If answered "Death" to [2a] and "Yes" to [6b] then:

Were remediable factors in the care of this patient identified?

- Yes No Unknown

6d. If answered "Death" to [2a] and "Yes" to [6b] and "Yes" to [6c] then:

What were the remediable factors and what action was taken?

7a. If answered "Death" to [2a] then:

After retrospectively reviewing this case are there any areas regarding the management of the patients hyponatraemia that you think could have been improved?

- Yes No Unknown

**7b. If answered "Death" to [2a] and "Yes" to [7a] then:
Please provide details**

End of questionnaire

THANK YOU FOR TAKING THE TIME TO COMPLETE THIS QUESTIONNAIRE

By doing so you have contributed to the dataset that will form the report and recommendations due for release in Autumn 2025