

Appendices

Appendix 1

NATIONAL AUDIT OF THE IMPLEMENTATION OF THE NPSA POTASSIUM CHLORIDE GUIDANCE

Structured interview schedules

The following question schedules are designed as interview schedules, not as questionnaires.

They have been compiled to facilitate the recording of answers but not to constrain discussion in any way. If an answer to a later question is partly given in response to an earlier, prompt them to say more at that stage and don't ask the question later.

If answers do not correspond to the responses given please note the answer in the 'other' box and give details.

Interviews should be tape recorded to allow for accurate transcription of responses to open questions and to permit the capture of data not prompted by questions.

Words in italics are addressed to interviewers only

Please try to obtain copies of any policies referred to – and in particular the following:
Administration of Medicines (IV)
Reporting of medication errors
Storage and handling of potassium chloride

Suggested introduction

“As you are aware, we are carrying out a national audit of the implementation of the NPSA guidance on the storage and handling of potassium chloride. I would value your perspective on the process. Most of the questions I have to ask you are fairly specific, but there are a few that will need you to elaborate, so for that purpose I would like, with your permission to tape record the interview, so that I can be sure of noting your views accurately. Is that all right?

Any quotations that appear in the final report will be attributed to a (medical director/chief nurse/risk manager etc) in one of the participating trusts”

Trust code

| | | | | | | | |
|--|--|--|--|--|--|--|--|
| | | | | | | | |
|--|--|--|--|--|--|--|--|

1. Respondent

- Medical Director**
- Clinical Governance Manager**
- Chief pharmacist**
- Chief Nurse**
- Risk Manager**
- Other (Please specify)**

| | |
|--|---|
| | 1 |
| | 2 |
| | 3 |
| | 4 |
| | 5 |
| | 6 |

2. I wonder if you could tell me who, if anyone, is designated as having the lead role in the trust for the implementation of the Potassium Chloride guidance? (tick more than one if appropriate)

- Chief Executive
- Medical Director
- Clinical Governance Manager
- Chief pharmacist
- Chief Nurse
- Risk Manager
- Other (Please specify)
- No-one specified

| | |
|--|---|
| | 1 |
| | 2 |
| | 3 |
| | 4 |
| | 5 |
| | 6 |
| | 7 |
| | 8 |

3. If someone has lead responsibility, how was this lead established?

- Specified in guidance
- Previously established lead for all NPSA guidance
- Decision by chief executive/clinical governance lead
- Agreed in committee
- Assumed because of previous work in this field
- other

| | |
|--|---|
| | 1 |
| | 2 |
| | 3 |
| | 4 |
| | 5 |
| | 6 |

If in committee, please name

Record comments:

4. Recognising that the Potassium Chloride guidance was the first to be issued by the National Patient Safety Agency, did the trust have a prior established strategy for handling guidance from this source?
- | | | |
|---|--------------------------|---|
| Yes | <input type="checkbox"/> | 1 |
| No | <input type="checkbox"/> | 2 |
| Same process as for other guidances (e.g. Medical Devices Agency) | <input type="checkbox"/> | 3 |
| Other | <input type="checkbox"/> | 4 |

5. Looking back over the last few years, what has been the level of concern in the trust in relation to the hazards of Potassium Chloride administration?
- | | | |
|------------|--------------------------|---|
| High | <input type="checkbox"/> | 1 |
| Medium | <input type="checkbox"/> | 2 |
| Low | <input type="checkbox"/> | 3 |
| Don't know | <input type="checkbox"/> | 4 |

Record comments:

6. Had any safeguards been introduced prior to the issuing of the NPSA guidance?
- | | | |
|------------|--------------------------|---|
| Yes | <input type="checkbox"/> | 1 |
| No | <input type="checkbox"/> | 2 |
| Don't know | <input type="checkbox"/> | 3 |

7. **If yes to question 5**, what were these?

- | | | |
|---|--------------------------|----|
| Removal from all areas | <input type="checkbox"/> | 1 |
| Removal from all except critical care areas | <input type="checkbox"/> | 2 |
| Removal from some areas | <input type="checkbox"/> | 3 |
| Change to packaging | <input type="checkbox"/> | 4 |
| Issuing warnings of dangers | <input type="checkbox"/> | 5 |
| Requirement for single signature | <input type="checkbox"/> | 6 |
| Requirement for two signatures | <input type="checkbox"/> | 7 |
| Storage in locked cupboard | <input type="checkbox"/> | 8 |
| Ongoing staff education | <input type="checkbox"/> | 9 |
| Other | <input type="checkbox"/> | 10 |
| Don't know | <input type="checkbox"/> | 11 |

If other, record details:

8. Were these changes prompted by any specific publication or event?
- | | | |
|------------|--------------------------|---|
| Yes | <input type="checkbox"/> | 1 |
| No | <input type="checkbox"/> | 2 |
| Don't know | <input type="checkbox"/> | 3 |

9. *If yes*, what was the publication or event

- | | | |
|--|--------------------------|---|
| Issuing of guidance by Guild of Healthcare Pharmacists | <input type="checkbox"/> | 1 |
| Adverse incident in trust | <input type="checkbox"/> | 2 |
| Other | <input type="checkbox"/> | 3 |
| Don't know | <input type="checkbox"/> | 4 |

If adverse incident or other, please record

10. Have there been any adverse incidents involving potassium chloride in the last year

- | | | |
|------------|--------------------------|---|
| Yes | <input type="checkbox"/> | 1 |
| No | <input type="checkbox"/> | 2 |
| Don't know | <input type="checkbox"/> | 3 |

11. If there was, how would such an incident have been reported? (to whom; what details would be given and what would the trust do with the information?)

12. Has specific action been taken in response to the guidance?

- | | | |
|---|--------------------------|---|
| Yes | <input type="checkbox"/> | 1 |
| No | <input type="checkbox"/> | 2 |
| No need to take any action as already implemented | <input type="checkbox"/> | 3 |
| Don't know | <input type="checkbox"/> | 4 |

13. If yes to question 10, what steps have been taken?

- Removal from all except critical care areas 1
- Removal from some areas 2
- Treat as controlled drug 3
- Requirement for single signature 4
- Requirement for two signatures 5
- Storage in locked cupboard 6
- Ongoing staff education 7
- Don't know 8
- Other 9

14. Has any aspect of the NPSA guidance **not been implemented** for any reasons within the trust? (*May be completed later from tape*)

| |
|--|
| |
| |
| |
| |
| |

15. Has any change been made to the reporting mechanism for incidents involving potassium chloride since the publication of the guidance?

| |
|--|
| |
| |
| |
| |
| |

16. On a scale of 1 to 5; where 1 is not at all difficult and 5 is very difficult indeed, how would you describe the process of managing the implementation of this guidance

- 1 1
- 2 2
- 3 3
- 4 4
- 5 5

Record comments:

17. What or who helped or hindered the implementation of this guidance?

(Prompt if necessary:

Did any particular directorate or professional group support it?

Did any particular directorate or professional group oppose it?

Did people cite time or resources as a problem?)

| | |
|---|-------------------|
| a | Helping factors: |
| | |
| | |
| | |
| | |
| | |
| | |
| | |
| b | Hindering factors |
| | |
| | |
| | |
| | |
| | |

18. How was the guidance disseminated to front line staff?

| |
|--|
| |
| |
| |
| |

19. How did you determine which areas should be able to stock concentrated potassium chloride solution?

- Designated critical care areas (inc A&E) 1
- Clear criteria drawn up 2
- Decided by consultants in each area 3
- Agreed in committee 4
- Decided by pharmacy 6
- Areas using most concentrated potassium chloride 7
- Other 8
- Don't know 9

If other please record

20. In clinical areas in which the storage of potassium chloride is permitted have you specified one system for the recording of the use of concentrated potassium chloride?

| | | |
|------------|--------------------------|---|
| Yes | <input type="checkbox"/> | 1 |
| No | <input type="checkbox"/> | 2 |
| Don't know | <input type="checkbox"/> | 3 |

21. If so, what is that system?

| | | |
|--------------------------------|--------------------------|---|
| Record in controlled drug book | <input type="checkbox"/> | 1 |
| Record in separate book | <input type="checkbox"/> | 2 |
| Other system (please describe) | <input type="checkbox"/> | 3 |
| Don't know | <input type="checkbox"/> | 4 |

22. Is every use of potassium chloride to be recorded?

| | | |
|------------|--------------------------|---|
| Yes | <input type="checkbox"/> | 1 |
| No | <input type="checkbox"/> | 2 |
| Don't know | <input type="checkbox"/> | 3 |

23. Do people signing for use of potassium chloride have to be registered practitioners?

| | | |
|------------|--------------------------|---|
| Yes | <input type="checkbox"/> | 1 |
| No | <input type="checkbox"/> | 2 |
| Don't know | <input type="checkbox"/> | 3 |

24. Has the guidance necessitated any changes to the opening hours of pharmacy or to the out-of hours service?

| | | |
|------------|--------------------------|---|
| Yes | <input type="checkbox"/> | 1 |
| No | <input type="checkbox"/> | 2 |
| Don't know | <input type="checkbox"/> | 3 |

details/comments:

25. Do you have any concerns about unintended consequences (unwanted knock-on effects) of the implementation of this guidance?

| | | |
|------------|--------------------------|---|
| Yes | <input type="checkbox"/> | 1 |
| No | <input type="checkbox"/> | 2 |
| Don't know | <input type="checkbox"/> | 3 |

26. Can you tell me about these? (*complete later from tape*)

| |
|--|
| |
| |
| |
| |
| |
| |
| |

27. Has this guidance been incorporated into trust induction and training strategies?

| | | |
|------------|--------------------------|---|
| Yes | <input type="checkbox"/> | 1 |
| No | <input type="checkbox"/> | 2 |
| Don't know | <input type="checkbox"/> | 3 |

28. Does the trust intend to audit compliance with the guidance?

| | | |
|------------|--------------------------|---|
| Yes | <input type="checkbox"/> | 1 |
| No | <input type="checkbox"/> | 2 |
| Don't know | <input type="checkbox"/> | 3 |

29. Does the trust's policy allow for concentrated potassium chloride to be supplied for named patients in clinical areas that do not carry stock?

| | | |
|------------|--------------------------|---|
| Yes | <input type="checkbox"/> | 1 |
| No | <input type="checkbox"/> | 2 |
| Don't know | <input type="checkbox"/> | 3 |

30. What is the process by which non permitted areas can obtain concentrated potassium chloride solution out of normal pharmacy opening hours

30. Other comments

For pharmacists only

31. May we have a list of all dilute solutions of KCl? stocked by the trust, together with their suppliers
If yes, please append.

Yes 1 No 2

Appendix 2

NATIONAL AUDIT OF THE IMPLEMENTATION OF THE NPSA POTASSIUM CHLORIDE GUIDANCE

Interview with Ward managers (ward sister/charge nurse or designated deputy) and junior doctors

(Interviewees may be approached when carrying out the ward audit and asked to answer a few short questions. Alternatively they may be identified when carrying out the ward audit and invited to answer a few questions at a convenient time later in the day. Introduce yourself as (name) from University of York, undertaking an audit for the National Patient Safety Agency in relation to the storage and handling of potassium chloride.

1. Trust code

2. Interviewee

- | | | |
|--------------------------|--------------------------|---|
| Ward sister/charge nurse | <input type="checkbox"/> | 1 |
| Staff nurse | <input type="checkbox"/> | 2 |
| House officer | <input type="checkbox"/> | 3 |
| SHO | <input type="checkbox"/> | 4 |
| Specialist Registrar | <input type="checkbox"/> | 5 |
| Other(please specify) | <input type="checkbox"/> | 6 |

3. Type of ward/unit

- | | | |
|-------------------------|--------------------------|----|
| Accident and Emergency | <input type="checkbox"/> | 1 |
| Coronary care | <input type="checkbox"/> | 2 |
| High dependency | <input type="checkbox"/> | 3 |
| Intensive care | <input type="checkbox"/> | 4 |
| Medical | <input type="checkbox"/> | 5 |
| Obstetrics | <input type="checkbox"/> | 6 |
| Oncology | <input type="checkbox"/> | 7 |
| Paediatric | <input type="checkbox"/> | 8 |
| Renal units | <input type="checkbox"/> | 9 |
| Surgical | <input type="checkbox"/> | 10 |
| Special care baby units | <input type="checkbox"/> | 11 |
| Theatre - recovery | <input type="checkbox"/> | 12 |
| Theatre - anaesthetics | <input type="checkbox"/> | 13 |
| Other (please specify) | <input type="checkbox"/> | 14 |
-

4. Are you aware of the guidance issued by the National Patient Safety Agency on the storage and handling of potassium chloride?
- | | | |
|----------|--------------------------|---|
| Yes | <input type="checkbox"/> | 1 |
| No | <input type="checkbox"/> | 2 |
| Vaguely | <input type="checkbox"/> | 3 |
| Not sure | <input type="checkbox"/> | 4 |

5. *If yes*, what can you tell me about the advice it contains?
- | | | |
|--|--------------------------|---|
| Withdraw from all but intensive care areas | <input type="checkbox"/> | 1 |
| Keep in locked cupboard | <input type="checkbox"/> | 2 |
| Sign for use | <input type="checkbox"/> | 3 |
| Other | <input type="checkbox"/> | 4 |
| Nothing | <input type="checkbox"/> | 5 |

6. *If no*, can you tell me what the trust policy is with regard to the storage and handling of concentrated potassium chloride solution?
- | | | |
|--|--------------------------|---|
| Withdraw from all but intensive care areas | <input type="checkbox"/> | 1 |
| Keep in locked cupboard | <input type="checkbox"/> | 2 |
| Sign for use | <input type="checkbox"/> | 3 |
| Other | <input type="checkbox"/> | 4 |
| Don't Know | <input type="checkbox"/> | 5 |

7. How did you become aware of this guidance, or of changes to Trust policy on the storage and handling of potassium chloride?
- | | | |
|----------------------------|--------------------------|---|
| Guidance/policy circulated | <input type="checkbox"/> | 1 |
| Memo | <input type="checkbox"/> | 2 |
| Email | <input type="checkbox"/> | 3 |
| Routine meeting | <input type="checkbox"/> | 4 |
| Educational event | <input type="checkbox"/> | 5 |
| Orally by pharmacist | <input type="checkbox"/> | 6 |
| Other | <input type="checkbox"/> | 7 |

If other, give details:

8. Has anything happened in the past to make you personally concerned about the storage and handling of potassium chloride?

- Yes 1
- No 2
- Not sure/Don't know 3

If yes, can you share that experience? _____

9. What is the process of reporting administration errors involving potassium chloride?

10. Is concentrated potassium chloride stored in your clinical area?

- Yes 1
- No 2
- Don't know 3

If yes answer questions 11 to 15. *If no*, go to question 16

11. How is it stored?

- Controlled drugs cupboard 1
- Other double locked cupboard 2
- single locked cupboard/container 3
- unlocked cupboard/container 4

12. How and where is its use recorded?

- Controlled Drugs book 1
- Other book 2
- Not recorded 3

13. How many people are required to sign for its use

- No signatures required 1
- 1 2
- 2 3

14. Who can sign for potassium chloride?

- No signature required 1
- Registered practitioners only (doctors and nurses) 2
- One registered and one unregistered practitioner 3
- Any two people 4

Comments:

15. How are stocks of concentrated potassium chloride solution replenished

- routinely stocked up by pharmacy 1
- Ordered in same way as controlled drugs 3
- Ordered by nursing staff by other route 4

16. What are your responsibilities out of normal pharmacy hours if wards request to borrow concentrated potassium chloride from you?

If no to 9

17. What happens if a patient on your ward requires treatment involving the infusion of potassium chloride different from the stock solutions kept in the ward (eg 60 mmols of KCl in a litre of fluid?)

- Pharmacy supplies ready mixed bags for patient 1
- Pharmacy supplies concentrate for patient 2
- Other 3

If other, please specify

18. What is the process of getting hold of potassium chloride solution out of hours?

19. Have you experienced or are you aware of any problems in getting hold of non-stock solutions of potassium chloride out of hours?

- Yes 1
- No 2
- Don't know 3

All respondents

20. Has this guidance (or the trust policy on potassium chloride) caused any difficulties for this clinical area

| | | |
|------------|--------------------------|---|
| Yes | <input type="checkbox"/> | 1 |
| No | <input type="checkbox"/> | 2 |
| Don't know | <input type="checkbox"/> | 3 |

21. *If yes*, please describe.

21. Do you have any other comments or observations?

Thank you for your help in answering these questions

Appendix 3

NATIONAL AUDIT of the IMPLEMENTATION OF THE NPSA POTASSIUM CHLORIDE GUIDANCE

Audit of Clinical areas

Include in sample 5 of the following:

Intensive care
Coronary care
A&E
theatre
renal

HDU

+ 5 non-intensive care wards

Throughout this audit potassium chloride concentrate should be deemed to include strong solutions i.e. concentrations of

10% (1g potassium in 10 mls)

15% (1.5g potassium in 10 mls)

20% (2g potassium in 10 mls)

1. Trust code

2. Type of ward/unit

| | | |
|-------------------------|--------------------------|----|
| Accident and Emergency | <input type="checkbox"/> | 1 |
| Coronary care | <input type="checkbox"/> | 2 |
| High dependency | <input type="checkbox"/> | 3 |
| Intensive care | <input type="checkbox"/> | 4 |
| medical | <input type="checkbox"/> | 5 |
| Obstetrics | <input type="checkbox"/> | 6 |
| Oncology | <input type="checkbox"/> | 7 |
| Paediatric | <input type="checkbox"/> | 8 |
| Renal units | <input type="checkbox"/> | 9 |
| surgical | <input type="checkbox"/> | 10 |
| Special care baby units | <input type="checkbox"/> | 11 |
| Theatre - recovery | <input type="checkbox"/> | 12 |
| Theatre - anaesthetics | <input type="checkbox"/> | 13 |
| Other (please specify) | <input type="checkbox"/> | 14 |

- [REDACTED]
3. Is this area named by the trust as one requiring a stock of concentrated potassium chloride solution? **Yes** 1 **No** 2
4. Inspection of drug cupboard
Was concentrated potassium chloride solution found? **Yes** 1
No 2
5. Inspection of controlled drug cupboard
Was concentrated potassium chloride solution found? **Yes** 1
No 2
6. Inspection of drug trolley
Was concentrated potassium chloride solution found? **Yes** 1
No 2
7. Inspection of crash trolley (non intensive care areas)
Was concentrated potassium chloride solution found? **Yes** 1
No 2
8. Inspection of area where IV and IM drugs are prepared (where sodium chloride and distilled water are stored.)
Was concentrated potassium chloride solution found? **Yes** 1
No 2
9. Was concentrated potassium chloride solution found in any other location? **Yes** 1
No 2

If yes, in which locations?

If area is permitted to stock concentrated potassium chloride solution or if any has been found in any location, answer questions 10-14, if not jump to question 15

10. Where is concentrated potassium chloride stored?

- Controlled drug cupboard 1
 - Schedule 3 cupboard 2
 - Separate single locked cupboard 3
 - Separate double locked cupboard 4
 - Other (please specify) 5
-

11. Where is the use of potassium chloride recorded?

- In controlled drugs book 1
- In separate book 2
- Other 3

12. In the record, is every use of concentrated potassium chloride signed for by two people? **Yes** 1 **No** 2

13. Does number of ampoules recorded coincide with number in stock **Yes** 1 **No** 2

14. From what date was potassium chloride recorded in controlled drug book / /

If date unknown because book not available tick here

If not an area in which potassium chloride is permitted as a stock drug

15. Which concentrations of potassium chloride are provided in ready mixed bags?

- 0.15% (20 mmols in 1 litre) 1
 - 0.3% (40 mmols in 1 litre) 2
 - 3% (40 mmols in 100 mls) 3
 - Other concentrations (please specify) 4
-
-

Comments

Audit team:

When all ten forms are completed for one trust, please place in a sealed envelope and send to Diane Wright, YHEC, Market Square.

Appendix 4

Sample of trusts in study

| Eastern | London | North West | Northern & Yorks | South East | South West | Trent | West Mid | Wales |
|---------|--------|------------|------------------|------------|------------|-------|----------|-------|
| 2 | 2 | 5 | 2 | 1 | 2 | 2 | 2 | 2 |

Table 4.1: number of trusts by “old” NHS regions

| Trust code | Recent merger | No of beds (DoH 2002b) | | | NHS Performance |
|------------|---------------|------------------------|----------|-------|-----------------|
| | | <599 | 600-1199 | >1200 | star rating |
| A | | x | | | 1 |
| B | | x | | | 3 |
| C | | x | | | 2 |
| D | | x | | | 2 |
| E | | x | | | 3 |
| F | | | x | | 2 |
| G | | | x | | 3 |
| H | x | | x | | 1 |
| I | | | x | | 3 |
| J | | | x | | |
| K | | | x | | 2 |
| L | | | x | | 1 |
| M | | | x | | 2 |
| N | | | | x | 2 |
| O | x | | | x | 1 |
| P | | | | x | 2 |
| R | x | | | x | |
| S | | | | x | 3 |
| T | | | | x | 2 |
| U | x | | | x | 3 |

Table 4.2: merger status, size of trusts and performance rating July 2002 (DoH, 2002c)