

**Decreased Conscious Level Multi-site Audit  
Stakeholders' Meeting  
No. 1**

**Minutes**

Thursday, 15<sup>th</sup> September 2011  
11:00 – 15:00  
RCPCH

**Attendees:**

Name	Organization
Stephanie Smith (SS)	DeCon Clinical Lead Consultant in Paediatric Emergency Medicine
Carla Long (CL)	RCPCH DeCon Project Manager
Gordon Denney (GD)	DeCon Project Board member National Reyes Syndrome Foundation, UK representative
Monica Lakhanpaul (ML)	DeCon Project Board member Consultant Paediatrician/Senior Lecturer
Asrar Rashid (AR)	DeCon Project Board member Consultant Paediatric Intensivist
Joanne Colgan (JC)	West Middlesex University Hospital Integrated Governance Lead and Datix Project Manager
Michele Cruwys (MC)	Hillingdon NHS Trust Consultant Paediatrician
Claire Donovan (CD)	The Meningitis Trust Community Services Nurse Manager
Ann Duthie (AD)	Whipps Cross University Hospital Consultant Paediatrician
Ava Easton (AE)	The Encephalitis Society CEO
Julian Ebsworth (JE)	National Reyes Syndrome Foundation, UK Chairman
Steve Hannigan (SH)	Children Living with Inherited Metabolic Diseases CEO
Viswa Vani Penumala (VVP)	Whipps Cross University Hospital Paediatric registrar
Bimal Mehta (BM)	Alder Hey Children's NHS Foundation Trust Consultant in Paediatric Emergency Medicine
Andrew Morris (AM)	British Inherited Metabolic Disease Group Consultant in Paediatric Metabolic Medicine
Clare Peckham (CP)	University Hospitals of Morecambe Bay NHS Trust Consultant Paediatrician
Mark Pontin (MP)	Royal Surrey County Hospital NHS Trust Accident and Emergency Consultant
Sarah Prudhoe (SP)	City Hospitals Sunderland NHS Foundation Trust Paediatric Registrar
Matt Rotheram (MR)	University Hospitals Bristol NHS Foundation Trust Paediatric Registrar
Collin Royed (CR)	Buckinghamshire NHS Healthcare Trust Paediatric Registrar

Fiona Smith (FS)	RCN Adviser in Children and Young People's Nursing
Katie Yallop (KY)	Southampton General Hospital Paediatric Registrar

**Apologies:**

Name	Organization
Peter Heinz (PH)	British Association of General Paediatricians Consultant Paediatrician
Ian Maconochie (IM)	St Mary's Hospital, London Consultant in Paediatric Emergency Medicine
Laurence Oates (LO)	DeCon Project Board member Lay member
Rebecca Salter (RS)	DeCon Project Board member Consultant in Paediatric Emergency Medicine
Amanda Stephenson (AS)	Royal Surrey County Hospital NHS Trust Clinical Audit Analyst

**1. Welcome and introductions**

SS welcomed all of the attendees to the meeting. Special acknowledgments were directed to JE and GD from the National Reyes Syndrome Foundation (which is funding the project) and CL, the Project manager.

SS provided attendees with the background as to why the project was established. She noted that the original Delphi guideline was produced by a team at Nottingham in 2005 under the leadership of Dr Richard Bowker. SS highlighted that there were 54 NHS trusts participating in the audit comprising a variety of units of different sizes and types and the audit covers a wide range of geographical areas in the UK with the exception of Scotland. JE asked why there was no representation from Scotland. SS remarked that contact had been made with several trusts in Scotland but they had elected not to take part, although they are very interested in the audit's results. ML queried whether these trusts had provided a specific reason for declining to participate. CL responded that these trusts had expressed fears of the impact negative results would have on their trusts because they do not follow the guideline in its entirety. MP commented that this was not an unreasonable fear in the light of increased pressures in the NHS, whereby audit performance was increasingly affecting payments to trusts.

SS outlined some of the organisational features of the trusts:

1. 78% of trusts have access to a paediatric nurse with APLS training or equivalent;
2. 12% of trusts possess a dedicated PICU on-site;
3. 42% of the trusts report not using the guideline;
4. 80% of the trusts report some access to paediatric anaesthetic skills or expertise on-site in a typical week;
5. 60% of the trusts reported the most senior paediatrician resident at night on-site in a typical was an ST4-ST8 (or equivalent) or a consultant.

The group offered the following comments on this area:

- SS asked FS if she had any comments regarding the extent of paediatric nurses with APLS (advanced paediatric life support) or equivalent training. FS indicated that despite the flexibility within the nurse education curriculum, the issue of nurses with APLS training was a complex one which causes concerns for the RCN.
- MP commented that the situation regarding anaesthetic expertise is not clear cut because in some hospitals anaesthetists may be able to do elective paediatric work but not emergency work.
- ML asked whether the trusts who did not use the guideline failed to use any guideline at all for children with decreased conscious level. CL stated that many of these trusts reported using diagnosis-specific guidelines instead rather than one over-arching one. BM commented that he felt that this could lead to fragmented care for these children as having one guideline dealing with decreased consciousness meant that the management of these children could be undertaken in a more systematic fashion.

SS provided the attendees with information on the clinical audit's methodology, identification of cases, inclusion and exclusion criteria and the audit's limitations.

- MP noted that if in the identification of cases some hospitals were collecting data only from the paediatric wards this meant that the cases presenting to the emergency department were a different case mix from those presenting to the ward. CL clarified this and noted that although

these cases had their data collected on the ward, the initial place of presentation was in fact the emergency department and all trusts in the audit collected data from the emergency department or collected data on children who initially presented to the emergency department.

- Some members of the group noted that in their hospitals because of the route by which these children might be admitted, it was inevitable that they would first be identified via the ward rather than the emergency department. Indeed, CL observed that the data capture was limited in some trusts because of a lack of adequate mechanisms for the detection of these patients and for trusts with small numbers it was likely that their results would provide a less reliable picture of decreased conscious level as compared with other trusts which had better systems in place for identifying their cases. Indeed, SS recognised the fact that the data may be incomplete for some trusts due to difficulties in identifying the cases and the use of different systems for case identification, however she felt these limitations did not in anyway negate the value of the audit's findings across the board because there were sufficient cases to present a good picture. CL noted that caveats needs to be included in the final report about how data had been collected and the limitations of inadequate case identification in some trusts.
- There were several queries regarding the audit's inclusion/exclusion criteria. CP raised the question of why patients with known diabetes were excluded from the audit. SS noted that this was because these children had been excluded from the original guideline. CL further clarified this point noting that according to the guideline the opinion at the time was that this group had more complex needs and that a guideline geared specially toward this group of children was more appropriate for them. CP remarked that non-accidental injuries were not included in the guideline and she felt that it should be specified in the guideline as a differential diagnosis separate from traumatic causes.

## **2. Audit results and recommendations**

CL outlined information on the audit's population and sample and indicated that the analysis relates to 853 cases inputted into the system up to 4<sup>th</sup> September 2010 and

she highlighted that there were procedures in place to check the data and make corrections if errors were detected so that the data was of a high quality.

However, CL highlighted that she had some concerns about some trusts as she felt that there were gaps in data capture and this could lead to misleading findings in those trusts because percentages are unreliable where numbers are small. CL asked the group if they felt that data capture in their trusts was particularly difficult. BM responded that maintaining awareness of the audit throughout was the key in capturing as many of the cases as possible.

MP commented that in his hospital (Royal Surrey) they employed manual methods trawling through ED patient cards and although this seemed a time-consuming and difficult task it was much simpler than might be expected and meant that all cases presenting to ED were not missed. CP observed that it may be a challenge to capture all the cases because there are also other national audits being undertaken at the same time.

CL reported on the characteristics of the audit sample in terms of their age, gender, working diagnosis, grade of the most senior reviewing clinician and outcome.

1. The mean age of the sample was 8.2 years with 36% of the children falling into the age category of 13.1 to 17.9 years.
2. The sample comprised 54% of males and 46% of females.
3. The most common causes of decreased conscious level among the audit sample were alcohol intoxication (30%), infective causes (19%) and traumatic causes (16%). Younger children were more likely to present with febrile seizures, infective causes and metabolic causes, whereas older children were more likely to present with traumatic causes and alcohol intoxication.
4. In 1/3 of the cases, the most senior clinician reviewing was a consultant. Children presenting with alcohol intoxication were more likely to be reviewed by junior clinicians as compared to children presenting with any other cause. Children under five years were also more likely to be reviewed by a consultant as compared with children five years and over (41% versus 22%).
5. There were 16 (2%) deaths in the audit sample, 92 (11%) children were transferred to PICU and 24 (3%) to another NHS hospital.

The group made a range of comments on this area:

- AM remarked that there appeared to be a smaller number of neonates presenting with decreased conscious level than he would have expected in the sample in the light of the extent of neonatal and hypoxic-ischemic encephalopathy.
- CL observed that neonates and those over 16 years are groups within this audit for whom there may be significantly under-estimation because data was collected from the ED settings rather than maternity wards in the case of neonates and from paediatric rather than adult settings with respect to those 16 years and over.
- ML commented that the high level of children presenting with decreased conscious level secondary to alcohol intoxication has important public health implications.

The standards related to clinical history features were outlined and CL highlighted that generally trusts were performing less well in these areas and provided some additional noteworthy findings:

1. Metabolic cases and cases where the cause was unknown were more likely to have documentation of the absence or presence of vomiting before or at presentation.
2. Febrile seizure and infective cases were more likely to have documentation of the absence or presence of fever before or at presentation.
3. Children under 5 years old were more likely to have documentation of the absence or presence of convulsions before or at presentation than those children 5 years and over (60% versus 28%).
4. In only 52% of alcohol intoxication cases was there evidence that the presence or absence of trauma was elicited and documented as part of the clinical history taking.
5. Alcohol intoxication cases were more likely to have documentation of the absence or presence of ingestion of medication or recreational drugs than other categories of causes.
6. Infective cases and cases where the cause was unknown were more likely to have documentation of the length of symptoms than other categories of causes.
7. Children under 5 years old were more likely to have documentation of the length of symptoms than those children 5 years and over (87% versus 74%).

There were a range of comments and queries by various group members on this area:

- AM queried what was the denominator for the standards. CL confirmed that 47 trusts had submitted data to date. ML asked what the positive evidence for fever before or at presentation was as part of the audit. CL confirmed that this required documentation of the presence or absence of fever as part of the clinical history and a temperature taken at the time of presentation was not sufficient evidence of this standard because the temperature documented in the notes only provides an indication of the temperature at the time of presentation but does not really provide any indication of the absence or presence of fever before presentation.
- BM commented that as a general rule unless children had had a convulsion this information would not normally be documented in the notes. CL observed that in the data submission there was a tendency to document information on a clinical history feature where there was some relation with the diagnosis but clinicians were less likely to document the absence of clinical history features and those exclusions were also equally important because they provided evidence of a good assessment being done. AM supported this noting that it was also important from the litigation point of view.
- ML commented that although the recommendations were guidelines which clinicians did not necessarily have to adhere to, it was important for them to at least document why they had deviated from them.
- AM noted that it was of some concern that there were low levels of documentation of the presence or absence of the clinical history of trauma in the alcohol intoxication cases because this is an important area and should not be overlooked. SH observed that it was important to not prejudge the situation if a child presents with presumed alcohol intoxication because this could be a metabolic case whereby the child appeared drunk and it was vital to undertake a thorough investigation of the child's condition.

- MP expressed concerns that because of the poor performance overall regarding the documentation of clinical features that there is the worry that it would look like these children were overwhelmingly being mismanaged when they come into A & E and he did not think that this was the case.
- SS commented that she did not think that the poor results for clinical history features indicated mismanagement of these children but instead pointed to some deficiencies in documentation in this area. CP observed that poor documentation of the clinical features might relate to how practitioners interpret what the evidence might be. She suggested that the guideline needs greater clarity in terms of the clinical history features. BM remarked that it would be interesting to see if there would be a difference if traumatic and alcohol intoxication cases were excluded.

The data on observations of heart rate, respiratory rate, oxygen saturation, blood pressure and temperature was reported by CL who also highlighted the following findings:

1. Generally most trusts met the standard for documentation of heart rate, respiratory rate and oxygen saturation. However, there was a poor performance in documentation of blood pressure and temperature measurements.
2. Children under five were less likely to have had their blood pressure documented than children five years and more (55% versus 89%).
3. Children under five were more likely to have had their temperature documented than children five years and more (92% versus 85%).
4. Children presenting to mixed emergency departments (ED) were more likely to have documentation of their respiratory rate than children presenting to either paediatric emergency departments or assessment units (PAU).

The group discussed this area at length and offered the following comments:

- BM suggested that a possible explanation for the difference between the varying types of units in terms of their documentation of respiratory rate may reflect the higher level of anxiety around children in mixed EDs,

although he acknowledged that perhaps paediatric EDs and PAUs could do better.

- CP noted that anecdotally when she goes to review a child the observation least likely to be done is the blood pressure. ML remarked that some research she undertook indicated that of all the observations blood pressure was the one least likely to be done this was re-iterated by CP who reported a similar finding in audits at her hospital.
- FS commented that the RCN has been concerned about blood pressure measurements and its documentation among nurses for children presenting to emergency departments. She observed that from a nursing perspective the expectation is that blood pressure should be undertaken and the RCN had recently reissued standards around monitoring and recording vital signs for nursing professionals.
- ML remarked that this should be a message for GPs also and not just nurses, indeed it should not only be the responsibility of nurses to make sure that blood pressures are being done but also of doctors and perhaps doctors need to remind nurses to do the blood pressure when they review patients.

CL summarised the data on the physiological scoring system used to assess the level of consciousness and the frequency of GCS observations. CL also observed that overwhelmingly trusts met the standard for the use of GCS or AVPU to assess the child's conscious level. There were 34/853 cases where no physiological scoring system was used and 45/47 (96%). trusts failed to meet the standard for the recommended frequency of GCS measurements. However, AM commented that it was vital that children presenting to hospital with reduced consciousness should not only have an AVPU done but should also have their GCS done and especially crucial was the frequency of GCS measurements as this provided a measure of whether the child's condition was deteriorating.

CL informed the attendees about the standards related to the recommended core investigations and noted that no target performance was set for most of the investigations apart from capillary blood glucose which the guideline recommends

should be done within 15 minutes of presentation to hospital. This latter standard was not met by a significant number of trusts, 30/47 (64%).

Several members of the group provided commentary on this area:

- SS commented that the timings on the standard for capillary blood glucose might have affected trusts' performance in this area as the guideline recommends that most of the other core investigations be undertaken within at least one hour of presentation. AM remarked that the metabolic cases were clearly a more prominent concern in this forum because of the involvement of both his organisation and CLIMB than the 24 metabolic cases would otherwise suggest and he asserted that sometimes an hour might be too long depending on the case and the timing does affect the results. He elaborated noting that as a minimum certainly all children with reduced consciousness should have capillary glucose done as early as possible after arrival to hospital as the management is extremely important for acute metabolic cases.
- SH commented that it was important to increase awareness of how to manage acute metabolic cases and wondered how best to stop metabolic cases from being overlooked. AM stated that when looking at a patient with metabolic problems it is necessary to be sure of what criteria to use particularly as a child presenting with reduced consciousness due to an unknown cause might be a metabolic case but categories of children should receive the full range of investigations. Indeed, he suggested that the best way to prevent metabolic cases from being overlooked is to ensure that they are receiving thorough investigation. He noted that some common sense was required and although it was inappropriate to commence plasma ammonia tests in alcohol intoxication cases if these children's condition was deteriorating or the cause of the decreased consciousness was not known then it should certainly be done.

CL reported the performance for the standards of working diagnosis and management plan within 4 hours of presentation and stated that overall these results were good across all the trusts and indeed provided some reassurance regarding the management of these children. Although, there were gaps in the documentation of the initial assessment as part of the clinical history taking of these children, the end

point of this assessment leading to the diagnosis and in turn the management plan were generally well documented.

CL summarised the overall findings and provided recommendations for the future such as the increased need for awareness of the value of comprehensive clinical history taking and its documentation, blood pressure and temperature measurements in this group of children and the documentation of not just clinical care but also any discussions held with children and their parents. There was some discussion about this area and the group provided their comments:

- ML noted that the recommendations related across the board in paediatrics and awareness was very important as it was key to document why you use the guidelines and highlight key audit criteria that are important.
- MP asked if there were any differences among the hospitals in terms of their performance and if any one hospital was performing less well than the others. CL reported that no one trust was performing badly in all areas, indeed across the board trusts were performing badly in some areas and well in others.
- AM noted that it was important to make staff particularly in emergency departments aware of the guideline because often there may be a lack of paediatric input in this area and in some hospitals the staff working in the ED may often have limited paediatric experience.
- MC asked whether data was being sent to the individual trusts. CL confirmed that each trust would receive a copy of their individual results which would allow them to compare their performance against the other trusts in the audit.
- GD asked CL if she was recommending that the audit be undertaken on a national basis when she referred to re-auditing on a wider level. CL noted that not necessarily nationally but certainly perhaps in a larger group of hospitals.

### 3. Plans for the future and guideline updating

AR presented some of the findings of the clinicians' survey focusing on awareness of the guideline, knowledge of its information prior to the audit, suggestions for its improvement and general strategies for promotion or dissemination of guidelines. The preliminary plans for updating the Management of a Child with a Decreased Conscious Level guideline were also covered.

1. 48% of respondents reported being aware of the guideline prior to the audit.
2. The respondents provided a range of suggestions for updating the guideline including reducing its length, revising the investigations section, raising awareness among junior staff, revision of the investigations section and simplifying the algorithms.
3. The respondents were more likely to identify quick reference summary, one page algorithm, education or training sessions and poster of the guideline as being the most important methods by which they wanted to be provided information on guidelines in general.
4. SS highlighted to the group the information on Spotting the Sick Child and the possible involvement of the project in adding to this education tool for doctors.

ML queried whether the respondents were asked this question on methods of dissemination in terms of dissemination of the guideline to others or to themselves and whether there were a lot of juniors responding. CL stated that this question related to the respondents experience alone and the audit sample comprised primarily of consultants. ML suggested that this might explain the reason why e-learning methods and Power point slides were the least popular methods because of the group and she felt that the results would perhaps have been different among junior doctors who were more likely to be technology aware than their consultants.

SS noted that decreased conscious level could be one of the most scary clinical situations and having the guideline helps particularly juniors to know how to deal with that situation- she suggested that the increased awareness helps to deal with the initial panic of knowing what to do. The group were asked to offer their suggestions as to how best to update and disseminate the guideline.

- AM noted that this document was a very comprehensive one but the key was perhaps to identify the main parts to disseminate to juniors. He suggested that the guideline could be made available on all the Royal

College websites and parts of the document should be available to download so that if people wanted to download only one area they could. He suggested that it might be made more user-friendly by providing a summary of the key areas that it was necessary to cover.

- ML suggested that the guideline could be incorporated into the learning of the juniors through the provision of teaching using video clips and it was perhaps a good approach to have a link up with Education so that perhaps factors such as having questions written based on the guideline could be employed. BM proposed that it is a good idea to capture them while they were required to study for their exams and perhaps have some connection with publishers of the exam texts.
- CP noted that the guideline was useful in helping to manage the clinically difficult child and part of the problem was that as part of the APLS often D (Disability) is overlooked. CP noted that she uses the guideline as part of the induction exercise for juniors but it need to have a bigger profile.
- CP also suggested that a good way forward was to consider using the approach adopted by the Meningitis Trust, whereby leaflets and posters are sent to staff. She noted that she used all of these resources in the inductions of the junior doctors and proposed that perhaps some key areas of the guideline could be incorporated into a credit card format. CP also offered more specific advice regarding changes to the guideline such as the drug doses and glucose amounts should be altered and it might be useful if instead of providing drug dosages that the guideline be re-worded to encourage doctors to employ their trust's policy for the drug dosages, along with the inclusion of respiratory secretions for H1N1 in the investigations sections as there is no mention of viral swabs currently. BM noted that H1N1 is quite season-specific and the labs might not do this test if it occurs out of season.
- MC commented that it was important to know how people were performing because the tendency is to say if people are not meeting the standards that they should be downgraded. However, that would be a mistake because there needs to be robust standards and dumbing-down the standard does not serve the patients in the long-term. There should

be an effort to aim towards a higher standard of care even if hospitals might not always achieve this and there was a desperate need for standardization across all areas around how to approach children who are critically ill and performance will improve the more standardised the process.

- ML emphasised that it is important to remember that the recommendations were not arrived at by a small group but were developed using a large experienced group and consensus was sought from a group of Delphi panellists.
- CR asked how people felt about proformas because he remarked that although he had some reservations about them, there was perhaps a place for something of the sort in these circumstances. MC also expressed reservations about the use of proformas which she felt stopped doctors from thinking and in the situation of caring for the child with reduced consciousness it was especially important for doctors to think and she was worried that proformas might hinder this.
- However, SP contended that proformas could be an excellent way of ensuring that all areas were covered and she felt they work well as an aide memoire to remind one if one has forgotten to take some part of the clinical history or do something.
- MP suggested that if there was a proforma it should match recommendations from the guideline and should only include the really important ones. However, BM noted that because of the complexity of decreased consciousness, it was difficult to have a proforma which covered every aspect and one could end up with a document several pages long which clinicians would not use, especially in busy EDs.
- FS suggested that the work on guideline revision should also include nurses as there was a scope for working with nurses to improve the awareness in this area.
- AR suggested that perhaps the key recommendations of the guidelines could be incorporated within the IT systems in the ED departments. MP

noted that many units don't have IT systems and are still using manual methods so this might not be feasible on a widespread basis.

- CP remarked that it was an important issue as to which group to disseminate the guideline to but questions were raised around how to disseminate the information.
- JE asked how the guidelines were distributed originally. ML commented that there was a strategy for dissemination and as far as she could remember the guideline was sent to all EDs for the Clinical Directors to cascade to appropriate person(s) in the trust.
- BM observed that sending guidelines to one person in the trust most often does not work because the guideline often gets locked away and no-one else get a chance to see it. SS asked the group how we can ensure that the guideline gets to the right people.
- MP suggested that we really need to engage the ED departments as some people have never seen the original document that was published in 2005. JE asked if work is being done jointly with College of Emergency and Medicine. SS confirmed that both IM and she were members of the College of Emergency Medicine so that link with the College existed. She also noted that she was the Chairwoman of the Intercollegiate Committee so had had good contacts in that direction.
- BM suggested that there was a need to look at what the crucial messages in the guideline were. The group noted that it was a difficult to know how best to disseminate the guideline but a wide number of approaches was perhaps the best means of ensuring wide-spread coverage.

## **Close**

SS thanked all of the stakeholders for attending and extended special thanks to the National Reyes Foundation for funding the audit, RCPCH for facilitating and CL for being instrumental in driving the project, collecting the data and analysing the information.