Day (1) – S.M. [illegible] [illegible] in [illegible] – [illegible] approved for [illegible] – [illegible] 23/[illegible]

Nurse Sorpl [illegible] on [illegible] being closed
beds are available for emergency
specimens

Mrs C stated that Mr Crawford was self employed

? Did the ward & staff not aware of equipment available ? (ET Tube)

Mrs C Did not wish to leave room

Bmi Lee – Mrs C was shocked at Dr Quinn's manner
– ? Should Dr Quinn be called
(come back to this)
No explanation was given in writing

Legal case – The Trust would contest liability

Mr Crawford
Issue of Paed ventilator
Spoke to Dr Aitken
Ventilator capable of managing children 10 kg +.

19.25 – 19.46 Dr Kirby ↑ Temp ↑ Resp Floppy
Wed 12/4/00 pm Agreed for fluid replacement

Dr Horsham Thursday – Dr Creen
Dr Creen Sol 133 the [illegible] [illegible]
There is a [illegible] of the [illegible] of [illegible] that go with [illegible] or Transfer regionally
1. Significance of Sol/27 [illegible] on 1. Threshold for [illegible]
Quantities the ratio of [illegible] [illegible] [illegible]

034-064-194

LC-SLT

AVA

? Information?
? Nothing on weight gain

? frequency
[illegible] observations

? Knowledge of [illegible] of health given
[illegible] knowledge

Sensitivity that [illegible] normal [illegible] changes
changes in fluid [illegible] in body is to known
Does not feel the situation was retrievable when
transfer took place
Deterioration can be very rapid without much
warning
Pt would need an assessment on my [illegible] Seen
Dr Green - thought it was gastro-enteritis

"If fluid had been managed in a different way the
outcome ~~[illegible]~~ would have been different"
? caused by hyponatraemia

Compared weight at 9.8Kg at admission
to RBH 8pm 13/3/00

? DDAP - Dr Dearlove's [illegible] fluid
retention

Given on 3 occasions 10.30 am
11.30 am
13.20 pm

Brian Dunn - Regarding the lack of info on fluid balance
while given at Erne

T L ? Why did RBH not request the need to be
faxed in advance (Pressing for the need to
have notes in this case)

"The event is upsetting for all concerned & the focus
of attention would be organising the transfer"

Records were faxed to RBH 8.53 pm 13/6/00

No 18 solution 100 mls /hr
11 – 3Am
3Am 500 mls N. Saline over dest. hours
? Record of the assessment of the level of dehydration

BF Prescription should state replacement & then the maintenance – this should be recorded
Raising the issue of a disagreement in relation to the planned fluid regime

? No 18 solution – Should not be used for a combination of replacement & maintenance.
Dr Coren – Stressing the need to monitor the fluid regime
BF States wrong solution + wrong dosage

Dr Sommer – Based his assessment on a review of the Ems data

?
Death Cert 1a Acute Cerebral Oedema
1b – Hyponatraemia
Contributing ? 2 ? 1c – Cerebro oedema
Would be happy with the principle of all the expert reports, but would have sl. differences in the proposed fluid replacement regime

? Professional body – Not aware of a College Guidelines
Issue of documentation would lead to confusion & rate of fluid flow is ~~cont~~ vital

034-064-196
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Impossible to say when the brain swelling started perhaps after the first hour of fluids

He would have assessed dehydration
The calculated deficit should be replaced by Hartmann's 5% at 9K = 450 mls & may used solution 18 for maintenance
Not much interest in fluid balance until last 10 years especially in sodium balance
Papers in BMJ and 1990's USA prop
Hypo problem with Hypo & Hyper natremia in USA
He knows of several cases where this could be the cause of death.
Weighing of children can be inaccurate.
He feels that the 137 → 127 could be caused by adm of 400 mls No 18
She had total 900 mls + 100 mls out & lost
The weight gain would be consistent with fluid gain

Common theme in 3 cases was that the fluid regimes were inappropriate for the clinical situation

Was consulted by Dr Campbell during review but did not attend any of the meetings.
He thinks the Dept Protocol is good & that it "could happen in N.I. when the communication is so good". It was splendid, the coroner had a part to play.
There is still no guidelines in England, but is [illegible] in the [illegible]

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034-064-197

Arieff Cummings 1998 — He contends that Dr Campbell is only a reminder of what clinicians should already know

Hamilton Times 2001 / Sunday ... April 2000 — Cameron – Emphasises the need to try & measure the volume of diarrhoea

BF The staff looked at urine but did not write down.
↘ states "It is bad practice if not recorded"

It is mandatory that the fluid is prescribed & recorded ie solution, rate etc so that staff can follow prescription

Dr S. Believes No18 solution is totally inappropriate for the clinical situation

Summary Wrong solution, wrong rate of admin + problem of interpretation of the notes

Speak to Eddy — If the fluid had been given at the intended rate, then Lucy may have survived

Brain swelling could have been happening 2 hrs earlier than the fit 2.55

3rd It was a fundamental error to give 500 mls free flowing saline. BF suggests this was also totally inappropriate and exacerbated the problem

4th ~ A failure to monitor the effect of rehydration — Dr S. feels this probably should be done 6 hrly

No guidance on the [illegible]

Dr Sommer states that the child would not normally see more than 6 hrs
Mum would be expected to do routine TPR + monitor fluid loss + any problems with fluid
Would expect Dr to be ½ hrly initially + then hrly.
Would depend on deaths of mums, drink level etc

X Clinical taking hold + continuing on the night.

Conclusion
Conjecture ~~that~~ the mismanagement of fluid intake was main reason for problem / death

Wrote to Patricia Hamilton RCP 14/9/2000

Agreed a Assessment M. Shelford
Jan 2001

Reminded to leave in dealing LC

Report 26/4/01

Dealing with Dennis Lawson – Pathology

Met 1/6/01 to discuss the Report

1st mention of guidance re use of saline

27/6/01 Letter went to all Pathologists with BMJ article 31/3/01
At her request there was a deputation
APCS recommend 0.9 Saline replace
18 Coltd for members

A. H
7. Thornycroft
Consultation
Sept 2000

Situation now comes from Argos & Wards related for M Deffy

Further correspondence from Argos & others

Send letter 7 Feb 2002 further contact with RCP. re wider issue

Visit Andrew Bourge – Royal Brompton
M S...

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034-064-200

7/8/02 — [illegible] On Holiday

Dr K/BR → T [illegible] 25/8/02

re

Issues: C

Dr Keys up with CPD
- Contracting of care
- Joint Working
- Some recommendations for interpersonal relationships for Roth

Need to stick to the positions for solutions + [illegible] in D. sorted — "Lessons of the [illegible]" [illegible]

(T Jenkins John needs to state) — Why does the new publicly [illegible] when the [illegible] is normal.

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034-064-201

Discussion with Dr O'Donohoe

Day 2 ? Lemonade

Causes of death — Some or the Summary + Summary sheets

Dr Evans — Never doubted. He is obsessional re weighing:

Weight gain cannot be explained

Concern re the change in Solution

Dr Sumner — explained that the caused by a dilution of body sodium

Dr Evans The Total 400 mls + 150 mls was too much + worrying fluid

Now accepts that the record of the fluids given at Erne is correct given the 9.4K → 9.8K

Concerns about the very bad note keeping.

There was a break down in communication between Dr + Nurse

Duty of Dr to write down what is to be given + Nurse to monitor input and raise concern with medical staff

Peter Crean:

Agrees that now fluid V weight is more consistent — accept record is probably accurate

Mucous or dehydration is not a genuine [illegible]

Moist tongue + three hand — mild to moderate dehydration.

Response to Dr Jenkins report — re 4 areas of concern re No 18

Dr Evans has got rid of No 18 solution recently

[illegible]

Dr. E. does not concur with Dr Tasker
claims that no body of medical opinion would
agree with use of No 18 solution in this volume
and in this condition

? Basis of criticism of resuscitation ? from Mrs Crawfords
report. - but not changing - yes it was based
on Mrs Crawfords recollection

Brian Lee →
Clinicians No 18 solution was inappropriate
in this circumstance - should not be
used to replace fluid loss

The rate of infusion was totally incorrect
The decision of reduction to ·5L ·9 solution
was a grave error
Control of both amount & observation by
Dr O'Donohoe
Agrees that prescription was mandatory
reference to 2nd Edition 1997 } Arbour / tape Segment
1st Edition 1993 }
Containing the fluid regime
He does not think it is in every childrens ward

Opinion of Hugh Mills comment - Dr Evans have
not seen
He would be astonished if Dr Armour's report
did not contain the core of s

The Ludhy Coroner that All should have thought the
[illegible]

Huy TLw — He is going to write to ABI regular re Dr Quinn's
(Medical Board)
opinion + Chief Medical Officer

Mr Mills asked for the Mills letter + copy of my summary on investigation

Dr Anderson — statement as per Appendix 14 of my memo

? Why do we not have paediatric ventilation
Because we do not have a paediatric ICU
Since we have acquired a paediatric ventilator
? Will new hosp have a paed ICU
Dr A — Will have ICU but ? not paed ICU (This is not an acceptable situation)
? What are we to do with such a child
Dr A. Transfer by what ever means possible

? When was the ambulance ordered
There was no specific delay in Ambulance arriving

TL — Raising the cover arrangement + the fact that the transfer may have to be delayed until cover is available
Dr A — States that he does not think the treatment would have been different

? Helicopter — Not ideal, travel can be difficult, takes time to get helicopter
No Helipad at RVH
Mentioned the Regional shortage of Paed Retrieval system

? Provision of hyps to RVH
Current position — Dr write a letter to RVH
This was done

LC- SLT 034-064-204

Dr A ? Instead I was - was rather puzzling at the time. When he was made aware of lab results ? Hyponatraemia

? Who is responsible for fluid management
Anaesthetist - during & after operation & ICU
On wards - Doctor sometimes in consultation with us

? other aspects de - surgical comment
? Fluid - TOO much of wrong fluid was given
also agreed the rate of infusion was inappropriate

Protocol is available in all wards
Information has been brought to attention of all staff & position has changed

Barrister ? Thinks agreed that all 3 fluid errors were wrong.

? Opinion on Quality of Care. Having heard reports & statements he would agree that the care was sub standard

? Dud Hugh
in a legal
opinion on
letter March 2004

? Stepping at
time

He agrees that there was a loss and that there was some difficulty in getting some of the requested equipment

? Was he aware that the Trust has never provided with an acknowledgement that wrong fluid & wrong volume had been given

He still presumes should stay out

SW A Swyft

Koy Obtains that Dr Mullah sited 1 line in her presence. Normal policy was 3 attempts

? Time to VOD attended

Present when line was inserted by VOD

Dr M was also present.

VOD was leading treatment

Confirms that her instruction was 100 mls/hr until child passed urine

Confirms it is the Dr who prescribes

Dr M. was responsible for [illegible]

Saw Dr M. with chart

Confirms is aware of the

Confirms approach to fluid regime was routine

& it was ~~not~~ unusual for the rate to not to be written

She signed the chart prior to establishment of fluid

? Was this an unusual value (Commence [illegible])

Was not aware of outcome of child

? Was a statement requested — yes

? Dr Mulh asked to give statement — Commence [illegible]

P Coml Denies talking about [illegible]

? Catheter [?] — Had been quick done at 6pm

Was aware that tests were done & results recorded

Nurse Swyft states Dr M only attempted line

Very bad effect on ward staff

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034-064-206

S/N McManus

2.55 Am Not (?) but has seen but ... involved
Completed Kardex from ... for staff
She documented
Response to phenotypes was from S/N Swyft
Comparisons that fluid management responsibility is the doctors
? Not present when Dr Anderson was present
PG - those not available would be brought from treatment room
+ x-ray equipment
A dummy was brought from ICU
Explains about how difficult this can be for a parent

S/N Jones

LC- SLT

034-064-207

A/W on lipping — No question

S/W Mc Nally
? Documentation on Transfer — There was not time to photocopy the note There was a transfer form + a Dr letter

? Admission of Nude ? — To be discussed with Dr O'Donohoe

C.I.D.
Present

Dr Armstrong [?]
? Pneumonia may have developed after 3 am deterioration

(Ideas of Medical Director Risk)

JL Dr. Anderson had agreed the fluid was wrong and should have been regulated

Dr H agreed with the earlier conclusions re the cause of death.

Lung [?] had 2 [?] brain stem tests
Dr Ia — ? Views on Fluid
In general Dr H would agree / Not an expert — A more concentrated solution should be used
? Standard of care
Poor — Not an expert & had not done any calculations.
The info was at Royal 2.15 am

Dr Tinker — Senior lecturer & Consultant
Obs up until 11.30 pm

JOD arrived at 3.20 am
Dr A called at 3.40 am   arrived at 3.50 am

Solution is commonly used for maintenance
then slightly ↑ Normal electrolytes
Solution for replacement should be [?] Carbon [?]
i.e. N Saline
Electrolytes appropriately repeated immediately

20

034-064-209
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confusion re volume intended & the recording of fluid intake

There was an appropriate and rapid response
Over recent years of concern re Na re solute
Recent development
Many units still No18
Probably cause of problem = Rapid ↓ in Sodium

Criticises the record keeping

? Cause of Death

1A Cerebral Odema
1B Acute dilutional Hyponatraemia
1C ?! Fluid Regimen (I did not get this part)
(2) : Cardiac arrhythmia

Mr L
Was around the cause of 2 recent deaths that Dr Campbell series started
Hopefully publications etc will lead to the prevention of this type of case
B.Fee ~ ?. delay in establishing fluids
∇∇ Depends on level of dehydration
LC 5-7.5% dehydration in some conditions 10 fluids would not resul
? Level of Assessment - ∇∇ saw nothing in the notes
Agreed that it is important for formal assessment of the degree of dehydration
- Agrees that a formula for fluid replacement should be calculated.

V.V. would not always write down the calculation, but would record the tubing & what was recommended

"Agrees that it is mandatory to write a proper fluid prescription on a fluid chart stating what fluid is being given, and at what rate"

? V.V's opinion on Mr. Mills' letter March 2001
Agrees that the care being received was not standard

Solution used was commonly used for maintenance
? Relevance to use in this circumstance
V.V. would not agree, but agrees it was wrong solution for replacement
? Timing – V.V. "That had not been well championed in the Paediatric literature"
Yes I believe there was a lack of awareness of the danger of No 18 at that time. That was the stimulus for the protocol
The principles are taught at Medical School but developed in practice
Report [illegible] 7/3/02
"It was often used as a single solution in 2000 when children not severely dehydrated"

Royal College guidance outlining the use of No 18 (1999)

No other explanation can be given for cause of death other than the excessive dilute fluid

Poor records led to the rush to course of
confusion – An extremely grave state of Affairs
The doctor who decides is responsible for writing
the prescription.
Normally the prescription will be recorded on
fluid balance chart. The nurse would
record the input / output
Debate about the rate of the sodium.
Agrees that the rapid fall in sodium was the cause
of the cerebral oedema.
? Was Lucy's death a clinical
RBH staff were raising issue and had
changed approach to fluid replacement June 2001
D. Good
J.T. had undoubtedly literature which would and
info was not normally been available to Paediatrics
JT had not been aware of 1993 BMJ article
at the time of Dr Campbell's review
Dr Campbell's Consideration of the framework within
which decisions should be made
Working group found there was a common use
in N. Ireland of No18. There was articles
in the Journals after 2000 eg Lancet article 2003
Lucy admitted with 137 + mild dehydration
JT He would have probably had 100 ml No Saline
Bolus + would worked out replacement ? use of
No18 for maintenance
Not surprised at the use of No18 solution in
Lucy's case
Agrees Dr Evans views ~~that~~ fall within the
range of opinion

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034-064-212

Dr Healy – States that there is no evidence to suggest that DNR is not appropriate in any circumstance

I. Desantelin

L. Felt senior staff had responded in appropriate and timely fashion

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Miss Whyte Application for adjournment
Why not use Rule 9

B. Mn disputes on basis that the Trust has legal representation – Nothing to justify postponement

P. Good – plea for balance.

Coroner – No allowing – Probation is appended through Rule 9.1 Coroner Act 1963
Amended 2002
Because of late application
Application is not reasonable
Not fair to Crowford family
Not in interest of justice

To D 2 coroner – Give evidence
+ be questions on
+ to say nothing at all

Copy of original statement given to coroner. – Read to court.
admitted under rule 17

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034-064-213

Result – Coroner's narrative [illegible]

<u>Cause of death</u>

1a Cerebral Oedema
1b Hyponatraemia
1c Excess dilute fluids

2/ Diarrhoea

Description of events

~~Was~~

Collapse was a direct result of fluid mismanagement compounded by confusion and poor record keeping

Matters to be considered

Rule 43/2 – Prevention can report to relevant body

Would normally write to Chief MO
Had previously wrote to Chief MO
? Should he write to Chief MO or anyone else

B Fee – Clear evidence of poor care
– Compounded by failure of Trust to recognise, volunteer that lessons had been learnt
This has weighed heavily with family
They have tried over years to get an answer to what happened
The Trust did not use the word [illegible] we did not say why [illegible] death [illegible]
that we accepted responsibility
Only acceptance was Dr [illegible] admission

034-064-214

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No [illegible] of [illegible] at Trust or Offer [illegible] is to present re coroner

This feeling of [illegible] was warranted by Dr O'D approach in court

Recommended:

- Share case with Chief Medical Officer
- Make what case into the [illegible] that appropriate should be shared with GMC
- Refer to DPP any [illegible] that the Coroner feels appropriate. Family what pursuing this issue

Leaves it in the Coroner's discretion

Mr Ford – Trust did share the conclusion of review
Contends Chief Medical officer had already taken action

J. G McE – Contends that the dissemination of info re new material has already been taken
Errors of judgement are not necessarily a criminal act.
This case would not pass the test

Miss Whyte – No submission at present

J. L decision on this matter is not straightforward

LC-SLT

He thinks that the papers being referred to Chief Medical Officer to see if any lessons gone out of

Under 23.2

Letter will be sent to D. Scott on behalf of Trust

Will refer papers to the GMC

The threshold on criminal case has not been met — Not referring to DPP

However the PSNI can do independently

Acknowledges S. McGuigan's role — If this had not happened a proper investigation of the cause of death would not have happened

Concludes all experts had some criticism

Expressed gratitude to Trust staff especially Dr Anderson — This was an ordeal

Hypo protocol will continue to be displayed and adhered. Doctors also need to understand the relevance

Extended sympathy to the family

P. Wood extended Trust's sympathy to family

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034-064-216

This is undoubt

Regent
Provtrie is dyspnoea
2001 Lesson
Admitted New guidelines

(1) [illegible] Queen

Case 3 — ↓ 10 [illegible] (by case) (2) Royal College – hard on

Values [illegible] dissent [illegible] Argue — M Stuart

eg [illegible] . [illegible] the

detection about [illegible] (3) 2nd report to College re

is seeking eg APLS Proposed Case

Bring out changes with [illegible]

Audit staffing levels + activity level

Frequency of planned observations

eg TPR

& How often is one [illegible] calibrated

& is there a record

[illegible] views can present

[redacted]

Lesson of Words

BMJ 31/3/01 Stet

Mat-cmd relating

to Santa Cruz Area 14