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Date: Ref: File Name: Location:

Death Certificate.

1(a) Terminal Event.

(b) Cause of Terminal Event

(c) underlying Cause of (b)

2. Significant other Conditions not causing Death.

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Date: Ref: File Name: Location:

28/4/2008. Clarke Coroners. Inquest. Rgh/1/134.

Mr Michael Lavery QC for Trust

Mr M Greer QC for family of deceased.

Mr John Leckey

Dr David Welch Consultant Paediatric Neurosurgeon.

Statement Read

The accurate causal chain

in '96. post pm. 1(a) Cerebral oedema. (Terminal event)

(b) Mylinogo encephalopathy + SIADH (Cause of SIADH. terminal event)

(c) Status epilepticus. (underlying Cause of b)

infection + inappropriate SIADH.

2. Significant other conditions not causing death

epilepsy + disability

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despread probs in hospitals that formulation of Death Certs is not accurate.

Independant Experts agreed Cause of Death now

1 Cerebral odema.

(b) en encephalopathy + hyponatraemia.
encyprothlyphus + encythalopathy +

2.

fluid management does not trigger SIADH. —

SIADH is one cause of hyponatraemia - it is not the only Cause.

Death Certificate in ~~1996~~ 2006 with additional information

would not formulate cert any differently.
does not believe death caused by fluid management
Triggered by infection.

Had C been given an inappropriate vol of fluid - may have caused her death. - Here no extra vol given -

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Date: Ref: File Name: Location:

28/4/2006. Clare Kobaft.

Dr David Webb.

Qu. Crun. Bld Test. 121 Serium Sodium Level.

If Dr Bingham :- if surprised by bld Test - take a second test. Sometimes v. diff for bld to be Taken from child. would you have expected a second sample be taken?

Ans: expectation - 121 - treat as if result correct - work on assumption that it is correct - dangerous not to. In the clinical context - safer to assume correct - rather than restrict fluids

- Qu also appropriate to ask for Test repeated?

Ans: Yes.

Qu. Crun. Grade of Dr took Bld Sample?

SHO (likely - identity n/k)

Qu. Crun. Sometimes bld taken from same arm as fluids for from Cannula.

What was the practice at time? Dr Steer has stated 2 days?

Ans: Practice varying enormously and depend on difficulties in obtaining bld.

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Notwithstanding difficulties etc. should Drs / staff not record where they take samples from - be recorded in note - such as from a vein or from Cannula?
Yes (Document where sample taken from - Arm - line etc.)

- perhaps some thought Mr Lavery should be given to this.

Mr McCrea BL

Cause of hypo - presence of ADH hormone caused by infection.

The xcess secretion of hormone documented to ?

ADH will not cause hypo to occur. - you need something else!
You have to be Receiving fluids!
Qu. presence of ADH + Receiving fluid?
Ans. Yes
Qu examined x 2. 22/10.
During Day - notes listless + unresponsive.
not responding to parents.
only probably source of fluid intake.
- hypotonic fluid
~~-if~~ appropriate ~~[illegible]~~ fluid at that time.
Qu. fluid caused reaction leading to death.
Ans no. fluid in ~~absence of~~ presence of xtra ADH. reduce sodium - ?

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Date: 28/4/2004. Ref: Clare Robert. Inquest File Name: Location: Lagh/1/134.

Dr Webb. x examination.

Q: Clare Robert was a child who was likely to increased levels of SIADH? Because of underlying presenting illness.

A: No

predominantly determination of her epilepsy provoked by viral illness/infection (Recent.) - v Common clinical scenario - and not one where one would anticipated xs ive SIADH. (possibility but not common)

Q: So she did have increased SIADH?

Therefore likely candidate for electrolyte imbalance?

A: Yes because vomiting + diahorrea.

Add to that mx bld test. indicated low Na Level of 132 which is a diagnosis of hyponatraemia

Cont: Lower end of spectrum of normality.

Never been anyone with 132 with GCS of 4.

This pts presentation not caused by Low Na.

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if Na levels v. during course of Day and if receiving hypotonic fluids could cause Na.

because GCS fluctuating - v. unlikely that Na relevant at that time. Correct to say at risk of electrolyte imbalance ∴ bld test undertaken on hourly often taken. Dr Brigham did say 1/24 h good practice

card. DR Brigham did say bld Test of little benefit.

Does sequence as reported to lead to hypo?

you would have repeated bld test that pm?

yes.

Bld sample. 9.30 pm. Report. 11.30. Na Level 121.

Cannot assume that Drop linear.

Assuming bld sample accurate - will accept drop.

Third sample taken at 2am. - also indicated 121. ~~129~~

4th sample. ~~4am~~ - 18.25 23/10. 129. ~~on IFS~~.

(PW. there is no 2nd 121.)

↓ Notes indicate that there is

3/(5)

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Date: Ref: File Name: Location:

28/4/2006. Claire Roberts. Inquest. Refh/4/95.

Dr Webb.

[?] Na recorded at. 22.10.96 @ 23.30.

[?] Na recorded at. 23.10.96. @ 3am.

gradual ~~[?]~~ Na fall - pt. lethargy.

dramatic Drop.

how it would manifest would depend on effect of hyponatraemia.

pt could eventually go into a Coma?

Yes eventually

As Na levels drop & becomes ill. - ~~ill~~ - yes - does not fluctuate!

*When process starts - pt's demise assuming fluid regime does not change - Yes.

fluid regime changes at 11pm.

Downturn at 8pm could indicate ↓ Na But prob did not know at time re other diagnosis / conditions.

initial treatment non convulsant status - then viral infection meningitis - on basis of history & information.

C's condition complicated by [?] of rota + [?] (Dr [?])

u depending entirely on Dr's obs + [?] for [?] further.

Due to complicated ~~[?]~~ underlying condition

- did not consider dropping Na levels

st there to say did not consider Na. Did consider it! But ↓ Na 132
id not cause her symptoms.

u. Discounted Na ↓ on basis of reading 132.

BS. considered but there had to be something else to cause
presentation.

u. Is it likely that next am Na fall?

BS. Do not know?

u. 10 pm. 21/10 - 9pm 22/10 121.
132.

Na ↓

Y3.

would she have been treated differently?

yes by medical team.

But do not know rate of Na fall? But we do encephalitis.

Qu. At that time was there a regime or guidelines re
children?

No issue re hypo managed.

when hypo identified appropriately managed but too late at
that stage.

~~Involved in Brain Stem~~

Qu where you involved in A Stam Case?

BS. Brain stem Tests

Objection sustained.

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4

Date: 28/4/2006. Ref: File Name: Claire Roberts. Location: Legh/[illegible]

Ans. not aware of any change in management.
Qu. guidelines.
CMM - CMO did not issue guidelines until after 2000.
Qu. If bld test taken am? 22/10. would managed diff?
Yes Na checked more + fluids restricted.
Qu. You did not consider risk of hypo due to time Bld taken + time taken.
Ans. confident that it could not have explained presentation.
CMM. Both Ind Exps not a factor in admission.
Qu. But ↓ level a factor?!!!
By 8pm. C - very seriously ill. in coma. Parents with C that evening. they say not advised of seriousness of C's condition? Who should have advised p's?
Ans. not aware at 8pm of deterioration - did speak to M + D - he had thought due to epilepsy from which she could have recovered - did not want to unduly concern mum on phone.
Qu. Spoke to mum at 5pm. change towards evening like. By time you informed C in brain dead.
No member of team informed.

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S. not in hospital at 8pm - But available.
SpR. medical Team SC or SHO on call.
They could have discussed case with him

- Rapid deterioration at 8pm.
- Sustained deterioration.
- would you not have expected to be alerted?
- yes.
- if you had - would you have ordered an immediate blood test?
- Speculation but correct
- you would have seen him.
- The only thing that would have changed is a blood Test - may or may not have changed outcome.
- intervention earlier

objective.
Refused.

- care clinical landscape has changed due to second ICU Result. to ask Dr Webb she stood by Death Cert

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Date: Ref: File Name: Location:

28/4/2006 Claire Roberts Inquest. Rgh 1/1/134.

Cont: Cause of Death.

Stands by formulae. - yes.

SIADH excludes hyponatraemia.

Syndrome of SIADH includes hyps.

The restriction at 11.30 pm would have been implemented earlier.

Level 121 accurate? yes.

why not include hyps?

The syndrome of ADH includes hyps.

You say infection cause ADH.

If she had not no SIDH the fluid regime entirely appropriate.

Ind Exps put hyps at 1(b) underlying Cause.

Ok questions these formulation - ADH mechanism for hyps -

you would not have considered it as an underlying cause.

But now in view of bld Tests is it not a central issue?

SIADH - Causes hyponatraemia

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Accurate formulation of cause of death - v. v. important.
Juniors putting different weight on aspects of case!
Risk to make decision.

M McCrea page 7

Hyponatraemia - you need SIADH + fluid
[Read - SIADH, hyponatraemia —]
Cannot be certain what % of brain swelling due to
viral infection and hypo.
Sepsis
meningitis - SIADH - hypo

MR Kennedy 82

Have we explore the role of urinary output?
Nursing notes
11 am pu. Large 1000
Suspects estimate (aged 9 yrs. 600 ml capacity.)

- improvement after medication?
Suggests seizure activity
- also suspected that she had infection

- Dr Bingham suggested reduced level of fluid management
need for other reasons.
- Bingham hypo - untreated condition.
- free.

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Date:	Ref:	File Name:	Location:
28/4/2006.		Clarke Roberts.	Kgh/1/13x/05.

- Clerk at what point - admission or terminal event
under x examination one of 3 underlying causes.

12 noon.

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