



Neutral Citation Number: [2020] EWHC 1610 (QB)

Case No: QB-2017-000098

IN THE HIGH COURT OF JUSTICE
QUEEN'S BENCH DIVISION

Royal Courts of Justice
Strand, London, WC2A 2LL

Date: 22 June 2020

Before :

THE HONOURABLE MR JUSTICE JOHNSON

Between :

SC

**(a child, suing by her mother and litigation friend,
AC)**

Claimant

- and -

**UNIVERSITY HOSPITAL SOUTHAMPTON NHS
FOUNDATION TRUST**

Defendant

Catherine Ewins (instructed by Hugh James Solicitors) for the Claimant
Katie Gollop QC (instructed by DAC Beachcroft LLP) for the Defendant

Hearing dates: 8-12 June 2020

Approved Judgment

I direct that pursuant to CPR PD 39A para 6.1 no official shorthand note shall be taken of this Judgment and that copies of this version as handed down may be treated as authentic.

**Covid-19 Protocol: this judgment was handed down by the Judge remotely by circulation to the parties' representatives by email and release to BAILII.
The date and time for hand-down is deemed to be at 10am on 22 June 2020.**

Mr Justice Johnson :

1. Meningitis is every parent’s nightmare. Indications of innocuous illness in infants or toddlers might mask symptoms of this potentially fatal condition. It poses considerable challenges for doctors. It would be disproportionate and counterproductive to treat every child with fever as if they had meningitis. The skilled general practitioner or paediatrician must seek to distinguish those patients who might be seriously unwell from the majority who have a self-limiting minor illness.
2. On 26 January 2006 a general practitioner examined C, then aged 15 months. He was concerned by what he found. He sent her by ambulance to a paediatric unit with a detailed referral letter identifying his findings and diagnosing “? meningitis”. At hospital the clinicians diagnosed tonsillitis and sent C home. But C did have a pneumococcal meningitis. If treatment for that had been given on 26 January 2006 then she would have made a full recovery. As it is, she developed a right hemiparetic cerebral palsy with permanent neurological deficit.
3. The instinctive reaction to this incomplete and partial account of the facts might be that the GP was right and the hospital clinicians were wrong. It is much more complicated than that. The Defendant, supported by respectable expert opinion, argues that C did indeed have tonsillitis that had been missed by the GP, that her symptoms could be explained by the tonsillitis, that the hospital clinicians reasonably diagnosed tonsillitis and provided appropriate treatment, and that the Defendant is not responsible in law for C’s injuries. The issue on this trial of liability is whether C has proved otherwise.
4. The trial was initially due to be heard remotely due to the restrictions in place in response to the Covid-19 pandemic. Shortly before the trial was due to start, the Defendant applied for an adjournment on the grounds that a remote hearing would be unfair. I rejected the application to adjourn, but directed that the trial should take place in court: [2020] EWHC 1445 (QB). The court staff, at short notice, ensured that a courtroom was prepared that could safely accommodate the hearing. The parties and their legal representatives cooperated in preparing, in limited time and difficult conditions, comprehensive hard copy trial bundles and enabling the trial to be conducted in accordance with the timetable that was directed. I am grateful to all involved for the considerable work that went into ensuring that happened. I am particularly grateful to Ms Ewins and Ms Gollop QC (who appeared for C and the Defendant respectively) for their searching questioning of the witnesses and their clear and helpful written and oral arguments.
5. Factual evidence was given by C’s parents, her general practitioner, and the two clinicians who treated her at hospital. Expert evidence was given by two consultant paediatricians (Dr Nelly Ninis and Dr Alistair Thompson), and two experts in microbiology and infectious disease (Professor Nigel Klein and Professor Robert Masterton). I also had written reports from four further expert witnesses (Dr Nigel Basheer, Dr Michael Nelson, Dr Martin Smith and Dr Marcus Likeman) dealing with broader aspects of causation which feed in to the evidence of Professor Klein and Professor Masterton.
6. Although C developed meningitis 14 years ago, the critical events are seared on C’s parents’ memory. C’s mother wrote a near-contemporaneous diary. I have been

provided with the entries from 26 January 2006 to 13 March 2006. The entries before 30 January were all written on 30 January (so they are not quite contemporaneous). Subsequent entries were made on the dates to which they relate. C's parents wrote a detailed letter of complaint in June 2006 which set out their account of the essential sequence of events. Their statements, although signed in 2017, were written in 2007. So, although their oral evidence was given 13 years later, there is a wealth of documentation against which to test their account. I am satisfied that in their oral evidence they were doing their best to give a completely accurate account. Their evidence is broadly consistent with the documentary records. I am completely satisfied that the account they gave is entirely honest, and also that (subject to some points of detail) it is broadly accurate and reliable.

7. Not surprisingly, none of the doctors now have a detailed recollection of the events. They are largely or entirely reliant on the contemporaneous notes that were made. I am satisfied that all of those notes were made in good faith and that (subject to the limited exceptions identified below) the notes reliably and accurately record what the doctors were told and what they saw. They all struck me as competent, caring and compassionate clinicians who have dedicated their professional lives to the provision of high quality medical care.
8. Dr Danielle Rowley was a Senior House Officer ("SHO") in her third year of specialist paediatric training. She had undertaken six month rotations in neonatal intensive care and paediatric cardiology. She had started her post on the general paediatric ward in August 2005. She would see between 10 and 20 children each day. Fever was the second most common presenting condition, after respiratory problems. By January 2006 she had seen "a small handful" or "a number" of children in which she had suspected meningitis or meningococcal septicaemia. She has been a Community Paediatric Consultant since November 2011.
9. Dr Michael Roe was a newly qualified consultant in his first year. He gave his evidence in a thoughtful and considered way and was quick to identify things that he, and the hospital, might have done differently. Some weeks after the events in question, when it was clear that C had suffered a life changing illness, he took it upon himself to spend time with C's parents. It is said that he told them that he felt terribly sorry about what they had endured and that he felt very guilty. I do not regard that as any form of indication or admission that Dr Roe had done anything wrong. On the contrary, it demonstrates his capacity for empathy and reflection, and his willingness critically to examine his own actions. This is reinforced by evidence that he spoke to more junior doctors about the case to identify possible lessons to be learned. It is further illustrated by the great regret that he expressed in his evidence for what happened to C. Those sentiments were reinforced by Ms Gollop QC, on behalf of the Defendant, in her closing submissions.

The facts

Sequence of events

10. In January 2006 the Claimant was aged 15 months. Her development up until then had been normal. Her health was good. She met her developmental milestones and received the expected vaccinations. In late January she became unwell. There is some discrepancy as to the precise date that this became apparent. The strong balance of the

evidence is that it was on 23 or 24 January 2006. Initially, her condition was not sufficiently serious – a mild temperature and “a bit withdrawn” - for her parents to seek medical help. They thought it might be due to teething. On the morning of 26 January that changed. C had a temperature. Her mother called “NHS Direct”. In the course of the conversation there was mention of the possibility of meningitis (although this was clearly not anything approaching a formal diagnosis). Inevitably, the reference to meningitis caused C’s mother very considerable concern. At some point during the morning (it is not clear whether this was before or after the call to NHS Direct) C’s condition worsened significantly. Her temperature rose and she became “very lethargic” and “very lifeless”. She had “glazed eyes” and a “vacant stare”.

11. C was given an emergency appointment for 11.50am at the GP surgery. They arrived (together with C’s paternal grandfather) at the surgery about half an hour early because C’s mother was so worried. She says that C “was lifeless in my arms” and that she had never been so ill. C was vomiting whilst waiting to be seen. The GP assigned to the appointment was Dr Mark Dennison. He was an experienced primary care clinician having qualified from medical school in 1990, completed his vocational training in 1995 and worked as a GP for 11 years.
12. Dr Dennison recorded a history of C having been unwell for 2-3 days, that that morning she had been very lethargic and floppy, and that she had vomited three times. On examination she was lethargic and floppy and had a glazed look. Her pulse was 160-170 beats per minute, which he considered was tachycardic. Her respiratory rate was 36 which Dr Dennison says he would have considered to be high but within the normal range. Her temperature was 40.1°C. Dr Dennison noted that there was no neck stiffness or rash. He could not detect any abnormality on visual observation of her throat. In the notes he recorded his impression as “? meningococcal.” At 12.20pm he gave an intramuscular injection of antibiotics. It is common ground that this accorded with advice given by the Chief Medical Officer since 1988 (and subsequently reinforced by the National Institute for Health and Care Excellence (“NICE”)) that antibiotics should be given by the first doctor who suspects the diagnosis, in a child, of invasive bacterial infection or meningitis. C did not flinch or otherwise react to the injection, which caused Dr Dennison further concern. He also administered Calpol (which had been purchased, whilst the appointment was taking place, by C’s grandfather from a nearby chemist). Dr Dennison told C’s mother that he suspected meningitis. He arranged for C to be taken by ambulance, under blue lights, to University Hospital, Southampton. He telephoned ahead. He also wrote a letter to accompany the Claimant which said (after expanding medical abbreviations):

“Thanks for seeing this little girl who has been unwell for 2-3 days. Today she has been very floppy – vomited three times and has a high fever.

Past medical history: nil of note. Fully immunised.

Drug history: nil. No allergens.

On examination: Temperature=40.1 Pulse 170 regular
Respiration rate 36/min

No anaemia, no cyanosis, no clubbing, no jaundice, no lymph nodes enlarged.

Cardiovascular system: tachycardic. Heart sounds: I +II+ 0.

Respiratory system: trachea equal, Exp L=R, percussion resonance, Auscultation vesicular both

Abdomen: soft

Central nervous system: lethargic/floppy

Eyes open spontaneously but 'vacant'

No neck stiffness

Pupil reaction to light ✓ ?photophobic

No gross neuro deficit

Ear, nose and throat: nothing abnormal detected

Diagnosis ?meningitis - unwell

Many thanks

Dr Dennison"

13. Dr Ninis said "I have rarely seen such a clear and thorough [referral] letter, it looks like the sort of clerking we perform in hospital medicine." Dr Thompson was less effusive but was certainly not critical of the content of the letter.
14. In evidence Dr Dennison said he was concerned about the possibility of meningococcal septicaemia and that he "was anxious about sinister disease." He summarised his concerns in his witness statement as follows:

"Sometimes, experience leads doctors to have a 'gut feeling' that a child is unwell, but in [C's] case there were several features that will have concerned me at the time. She had a raised pulse, and fever. In themselves, this is not all that unusual in an unwell child. Probably of more concern to me would have been her being 'floppy' and the 'glazed look' – I would have considered both of these to be worrying signs as most children even at [C's] age can maintain eye contact in mild illnesses.

I would have had a real concern about [C] to administer IM penicillin and admit her by 999 ambulance... this would not have been a vague suspicion on my part. I would estimate that in my 15.5 years as a GP in the UK I would have administered IM penicillin an absolute maximum of 10 occasions, and probably less...

...I must have considered from the history and examination, that [C] was very sick and needed urgent assessment to exclude serious disease, which unfortunately she subsequently was found to have."

15. In the course of the ambulance journey to hospital C appeared lifeless. C's mother initially thought that she had died in her arms, but the paramedic was able to elicit a brief response by running a finger over the sole of her foot.
16. C arrived at hospital by 1.15pm at the latest (and, on one reading of the records, by 12.50pm). The reason for admission was given as "pyrexia ?cause". Her temperature was 40.4°C and her pulse 177bpm. She was described as "[a]lert but very quiet". Oral paracetamol and ibuprofen were administered.
17. At 2pm the Claimant was seen by the SHO, Dr Rowley. She made the following entry in the notes (expanding medical abbreviations, and omitting one detail of the history which was inaccurately recorded and is not suggested to be material):

"Presenting complaint: Fever, ↓fluid intake, floppy

History of presenting complaint: Unwell 48hrs

Quiet, lethargic

↑ temp 38°C yesterday 40°C today

Refusing food

Taking small amounts milk + water

Nappies less wet than normal

Vomited x 3 this am

No diarrhoea

Slight coryza yest. No cough, tugging ears

?Sore throat, No rash

Given intramuscular benzylpenicillin by GP

Previous medical history: Spontaneous vaginal delivery @
term

No antenatal/neonatal problems

Usually fit + well

No previous admissions

Normal developmental milestones

Thriving

Drug history: Nil regular

No known allergies

Immunisations up to date

Social history: Only child Parents both work Mother works
part time Stays with grandparents when mum @work

On examination: temp 40.4°C

cervical lymphadenopathy

Alert

no rash

Miserable ++

no neck stiffness

Warm. Capillary refill time 3 sec peripherally <2sec centrally

Dry lips

Heart sounds I-II+0
Swollen red L thigh from IM benpen
Normal femorals
Heart Rate 170
[diagram of lungs] Respiratory rate 30 O₂ Saturations 96% in air
Good air entry bilat
No crackles/wheeze
No respiratory distress
[diagram of abdomen] soft non distended
No organomegaly
Ears – nothing abnormal detected bilat
Throat – large inflamed red tonsils with few dots of exudate
Urine – ketones 3+ Prot 1+ Glucose neg Leucocytes, nitrites, blood – negative

Impression: tonsillitis, meningitis unlikely
Had intramuscular benzylpenicillin

Plan: Admit for observation
Encourage oral fluid intake → IV fluids if not tolerated
Penicillin V
Not for bloods at present
Review later”

18. The urine results which are noted were obtained at 2.30pm. A nursing note records “Seen by Dr Rowley. For oral antibiotics as throat red, encourage fluids and admit for observation. If becomes unwell may need bloods.”
19. C’s father (who had been at work) arrived at the hospital, probably shortly after Dr Rowley’s examination. C’s parents both say, and I accept, that they repeatedly questioned the diagnosis of tonsillitis and sought reassurance that meningitis had been ruled out.
20. Notwithstanding the plan that C was to be admitted “for observation” and that fluid intake was to be encouraged, the documented observations are limited. The feed chart has a single entry at 3.15pm to record that “juice” had been offered (but without recording whether it had been taken). The observation chart has a single entry at 3.30pm to record a temperature of 37.1°C, pulse of 122 and respiratory rate of 28.
21. Oral penicillin was administered at 6pm.
22. At 6.40pm C was seen by Dr Roe. The clinical note was written on his behalf by a SHO. It records:

“Review Dr Michael Roe
Frequent contact with other children
Fully immunised
On examination: Alert, miserable, walking around play area
Temp 40 ↓37.2 Normal respiratory rate No neck stiffness
Large inflamed pussy tonsils, ears not examined

Impression: tonsillitis
Plan: 5 days oral penicillin
Encourage fluids
Home, review tomorrow John Atwell Day Ward 2.15pm”

23. At 7pm oral penicillin was administered. C was discharged at 7.30pm with a note giving the diagnosis as “tonsillitis.” C’s parents say, and I accept, that they were reluctant to take C home and that they were reassured by Dr Roe who said that although every doctor will make a mistake in their career, he was 99.9% sure that “tonight is not the night for that mistake.” Dr Roe frankly accepted in evidence that C’s parents had asked if C should be admitted overnight but that he had “said no”.
24. On 27 January C was still asleep at 10am, which was unusual (she normally woke at 6.30am). She was woken by her mother. C appeared ill and lethargic. Her parents took her to the hospital for the follow up appointment (C’s father had taken the day off work because he was worried). C was seen again by Dr Roe at 2.30pm. C’s mother records in her diary entry for that day that C “picked up just as we saw Dr Roe.” The hospital note states:

“Reviewed
Better
Drinking a little wet nappies
Still lethargic ++
On examination: Awake and alert
Chest – clear
Pulse 120 Respiratory rate 28
Throat not examined
Impression: Resolving viral illness
Home
No follow up”

25. C’s condition did not improve thereafter. On 28 January her temperature was very high all day. On 29 January C’s mother had to wake her up. C vomited when her mother tried to administer medicine. She asked if she could bring C back to hospital but was told to wait. C saw another GP who thought that she might have an ear infection and changed the antibiotics. On 30 January C was seen by another GP who, according to C’s mother, was very concerned that C might have meningitis and arranged for her to be seen by the Accident and Emergency Department of the hospital. The GP note reads:

“malaise – symptom she remains very unwell. Lethargy++, glazed look, continual grunting. Now on cephalexin for ?[otitis media] but TMs fine. Drinking small amounts only. Continues to have high fever. O/E drowsiness.... Chest - clear but continual grunting. Dry. Sats 99% with PR 136bmp. Needs paediatric r/v – refer back G1 ward.”

26. C was admitted at 2.20pm. C’s parents queried whether C might have meningitis, but they were told it was definitely tonsillitis. They asked for a lumbar puncture to be performed, but this was not done. The following morning it appeared to C’s parents that her condition had deteriorated. She seemed to be twitching. Dr Roe saw C at

10am (he was not on call but had gone into the hospital for an unrelated reason and had been told that C had been readmitted). He formed the view that the probable diagnosis was still tonsillitis, but in the light of the deterioration in her presentation he now thought a lumbar puncture was appropriate. Bacteria were seen in the spinal fluid. This was thought (and subsequently confirmed) to be a pneumococcus. Dr Roe diagnosed a partially treated meningitis.

27. C's condition deteriorated further. On 8 February her smile appeared to be "wonky" and she was having trouble with her right arm. On 11 February C's parents were told that she had had a stroke.
28. The agreed medical evidence is that as a result of the pneumococcal meningitis C developed vasculitis, leading to an infected perforator infarction with adjacent oedema, involving her left basal ganglia. The infarction probably occurred between 7 and 9 February 2006. She now has right hemiparetic cerebral palsy with neurological deficit.

C's presentation on 26 January 2006

29. Meningococcal septicaemia / meningococcal meningitis: There is a debate as to whether Dr Dennison had in mind meningococcal septicaemia or meningococcal meningitis. Dr Thompson said that the term "meningitis" is used by doctors "loosely" to cover both meningococcal septicaemia and meningococcal meningitis. He considers that Dr Dennison probably meant septicaemia. He reaches this conclusion on the basis that Dr Dennison had written "meningococcal" in the notes (which were not available to the hospital clinicians). Dr Roe also said in his statement that Dr Dennison probably meant septicaemia (although in his evidence he said that, on reflection, he considered that he "probably should have taken that sentence out"). Dr Dennison accepted in evidence that he may indeed have had septicaemia in mind.
30. The question of whether Dr Dennison had meant meningococcal septicaemia or meningococcal meningitis does not seem to me to be material. The fact is that on any view Dr Dennison was (to the knowledge of Dr Rowley and Dr Roe) concerned about a serious bacterial infection. Dr Ninis says that "the clinical differentiation between early meningitis and early sepsis is not as clear as in older children which is why the term 'serious bacterial infection' is often used." The question is whether C was afforded satisfactory care in the light of the concerns that Dr Dennison expressed, irrespective of precisely what Dr Dennison had in mind when he wrote "? meningitis".
31. Tonsils: It is striking that Dr Dennison recorded that there was no abnormality of C's tonsils, and no enlarged lymph nodes, yet both Dr Rowley and Dr Roe found "large inflamed tonsils" and Dr Rowley found enlarged lymph nodes. I readily accept that the medical notes are accurate in this respect. The expert evidence is that it is possible, but unlikely, that these symptoms developed in the time between Dr Dennison's examination and that of Dr Rowley. It follows that, on the balance of probabilities, C's lymph nodes would have been enlarged, and her tonsils inflamed, at the time of Dr Dennison's examination. I proceed on that basis (whilst acknowledging the possibility that the tonsillitis had subsequently developed, such that this is a disservice to Dr Dennison). How did he come to note that he had not detected any abnormality? The answer is not due to any lack of competence, diligence or

experience on the part of Dr Dennison. Nor is it due to any difficulty in carrying out the examination. C was not resisting examination and Dr Dennison will have been able to secure a good look at her tonsils. If they had been grossly abnormal then Dr Dennison would doubtless have recorded that. I think that the most likely explanation is that the degree of inflammation of the tonsils, and enlargement of the lymph nodes, was relatively slight such that Dr Dennison did not consider it sufficiently significant to note in the context of the much more serious symptoms that caused him concern.

32. Neck stiffness: There is an issue as to whether C had neck stiffness on 26 January. Her parents both say that she did. Her mother says that “her head remained stiffly upright... if I moved her to a position she would just stay in that position. She was not moving her neck...” In his statement her father said “her neck rigidity had stiffness in her neck.” Although C’s mother says in her statement that Dr Dennison “noted... neck stiffness” it is clear that in fact Dr Dennison noted that there was no neck stiffness. He described in evidence the orthodox clinical test that he conducted in order to assess whether there was neck stiffness. Dr Rowley and Dr Roe each carried out their own examinations and noted that there was no neck stiffness. I am satisfied that although C may have seemed to her parents as having a degree of rigidity in her neck, in fact she did not have neck stiffness properly so called.
33. Floppy/glazed expression/vacant/alert/miserable: Different adjectives are used by Dr Dennison, Dr Rowley and Dr Roe to describe their assessment of C. There was considerable debate as to the precise meaning of each of the adjectives. I am satisfied that “miserable” is not synonymous with “irritable” (irritability having a particular significance in this context) and that although C was miserable, she was not irritable. C’s parents describe her as being lethargic throughout. On admission to hospital at 1.15pm she is described as “alert but quiet”. Dr Rowley and Dr Roe both describe C as being “alert”. This was (explicitly in Dr Roe’s case) by reference to the “AVPU” scale (alert; responsive to voice; responsive to pain; unresponsive). This is a hierarchical scale. Accordingly, the fact that C was alert indicates that she was also responsive to both voice and pain. The description of C as alert when examined by Dr Rowley and Dr Roe is, I accept, inconsistent with her having (at those times) a vacant expression with glazed eyes (particularly in the absence of any suggestion in the notes that she had a vacant expression or glazed eyes). I do, however, accept C’s parents’ evidence to the effect that she was “not herself”, and was significantly withdrawn (consistent with the admission note that she was “quiet”), that she was not engaging in play, and that she was far less lively and alert than normal, and that she was lethargic. Nevertheless, within the (blunt) taxonomy of the “AVPU” scale I am satisfied that she was properly described by Dr Rowley and Dr Roe as “alert”.
34. At the time of Dr Dennison’s earlier examination not only was she floppy and lethargic but she did not respond to the injection of penicillin. She was therefore (at that point) unresponsive to pain. It follows that at that point she was, at best, at level P of the AVPU scale. In the ambulance en route to hospital she was no better, and was arguably at level U. There was therefore a marked improvement by the time of admission to hospital, certainly by the time of the clinical examinations.

The clinical pathway on 26 January

35. There has been vigorous debate between the microbiology experts, Professor Klein (instructed by C) and Professor Masterton (instructed by the Defendant) as to the

“clinical pathway”. There are two linked and difficult issues: (1) whether C had symptoms which could not be attributed to tonsillitis, and (2) the extent to which the improvement in C’s symptoms could be attributed to the intramuscular antibiotics administered by the GP. The reason for the link is that the antibiotics would not have impacted on C’s viral tonsillitis. Accordingly, any symptoms that improved as a result of the antibiotics could not be attributed to the tonsillitis. The reasons for the difficulty include: (a) there does not appear to be any clear data based evidence as to the time within which intramuscular antibiotics can have an impact on clinical symptoms, (b) an improvement following the administration of antibiotics does not necessarily mean that the antibiotics caused the improvement, (c) Calpol had also been administered, raising the question of whether any improvement was due to the Calpol rather than the antibiotics, (d) a viral illness may ebb and flow such that symptoms (attributable to the viral illness) might change without any medical intervention.

36. Very helpfully, in a joint report dated 11 December 2019, and written by Professor Masterton, he and Professor Klein set out their agreed joint views as to the clinical pathway:

“1. We agree that on the morning of 26 January 2006 C suffered from a combination of a viral tonsillitis with a pneumococcal bacteraemia, and as a result of its presence, the blood brain barrier was penetrated such that a pneumococcal meningitis was begun.

2. We agree that thereafter C suffered from a partially treated pneumococcal meningitis that progressed to cause her emergency admission on 30 January 2006.

3. We agree that since C was suffering from symptoms and signs on the morning of 26 January 2006 she was, by definition, symptomatic.

4. We agree that the features of sore throat, cervical lymphadenopathy and large inflamed tonsils with dots of exudates were due to the viral tonsillitis.

5. We agree that the features of fevers, lethargy, malaise, refusing food, taking small amounts of milk and water, nappies less wet than normal and diarrhoea and vomiting were non-specific and consistent with viral tonsillitis and pneumococcal bacteraemia. They could have been additive.

6. We agree that the features of floppiness and a glazed expression in a child are not consistent with a viral tonsillitis.

7. We agree that the features of floppiness and a glazed expression in a child are consistent with a symptomatic bacteraemia but are not pathognomonic of this condition and can be caused by other conditions, including those that cause high temperatures.”

37. On a fair and natural reading of this account, the symptoms of floppiness and glazed expression could not be accounted for by viral tonsillitis (see paragraph 6) and are instead consistent with the pneumococcal bacteraemia that was present (see paragraphs 1 and 7). This is consistent with the view that had been consistently expressed by Professor Klein. By contrast, Professor Masterton had, in his written report, maintained that in his opinion there was no symptomatic bacteraemia on 26 January (so, in his view, the floppiness and glazed expression were not attributable to bacteraemia). In his oral evidence he maintained that view, and explained that the agreed joint report was not intended to suggest otherwise: the reference to floppiness and a glazed expression being consistent with a symptomatic bacteraemia was to be read as a general statement rather than as an indication that there was symptomatic bacteraemia in this case. Professor Masterton did not think that in this case the floppiness and glazed expression were symptoms of bacteraemia. Rather, he thought that these features were more likely to be attributable to the high temperature. That was because he did not think that the antibiotics had had sufficient time to produce the observed clinical effect.
38. I do not agree with Ms Ewins' suggestion (understandable though it is) that Professor Masterton has "changed his mind". I am satisfied that his consistent view throughout has been that on 26 January 2006 the pneumococcal bacteraemia was pre-symptomatic (although this could have been spelt out more clearly in the joint statement).
39. I am therefore left with a difference of view between the two experts, in circumstances where each has consistently maintained their own view.
40. On the balance of probabilities, I accept Professor Klein's opinion that the pneumococcal bacteraemia was symptomatic at the time of Dr Dennison's examination, that the floppiness and glazed expression that he records were attributable to the pneumococcal bacteraemia, and that the clinical improvement was due to the antibiotics. This is because:
- (1) That has always been Professor Klein's view.
 - (2) Professor Masterton accepts that this is a respectable and a "possible" account, albeit he has reached a different conclusion on the balance of probabilities.
 - (3) Professor Masterton's alternative explanation for the floppiness and glazed expression are that they are the result of the high fever.
 - (4) The NICE guidelines, and the textbooks, suggest that a temperature of up to 39°C is consistent with tonsillitis. It is common ground that there are some cases where a child with tonsillitis has a higher temperature than this, and a temperature of 40°C is not completely inconsistent with tonsillitis, but on the evidence it is well outside the norm.
 - (5) C's tonsillitis had been in progress for 2-3 days by 26 January. The natural progression of a viral tonsillitis is such that after this period of time a patient is likely to be on the road to recovery. It seems unlikely that the sudden dramatic symptom spike on the morning of 26 January can easily be explained by tonsillitis.

- (6) There is no other indication that C's tonsillitis was particularly severe so as to account for symptoms that were so far outside the norm. This was not a case of what Dr Ninis described as "rip-roaring tonsillitis". Those clinical symptoms that were unambiguously associated with tonsillitis (paragraph 4 of the Klein/Masterton joint statement) were relatively mild.
- (7) I have not been shown any clear evidence (beyond the assertion of Professor Masterton and Dr Thompson, which is disputed by Professor Klein and Dr Ninis) to suggest that intramuscular antibiotics are incapable of producing the observed clinical changes between 12.20pm, 1.15pm, 2pm and 6.40pm. Professor Klein and Dr Ninis have consistently maintained their view that the change was attributable to the antibiotics. Professor Klein, in his original report, said that the "features of a high temperature, lethargy, a HR of 160-170 and vomiting would be consistent with a *S pneumoniae* bacteraemia." All of those features had been noted by Dr Dennison, but had changed by the time of Dr Rowley's examination. Both Professor Klein and Professor Masterton agreed (in their first joint statement) that the intramuscular antibiotics "would have had some clinical impact" on the signs and symptoms exhibited by C (but would not have had any impact on the viral tonsillitis). They agreed that "antibiotics work very quickly against sensitive organisms" albeit "the clinical impact usually takes hours and sometimes up to 2/3 days to be fully evident." Professor Masterton in his report says "[i]t is conventionally considered, although the data supporting this tends to be based on clinical experience rather than robust research, that up to 48-72 hours of adequate antibiotic therapy is usually necessary to produce a clinically materially, observable and sustained improvement." He does not, however, suggest that the antibiotics were incapable of producing the observed (and temporary) improvement and he expressly accepted this possibility.
- (8) The alternative hypothesis advanced by Professor Masterton is that C's floppiness, lethargy and vacant expression were due to her high fever. Thus, on his hypothesis, the fever was reduced (by the paracetamol) and the reduction in temperature accounted for the improvement. However, C was described as "alert" on admission to hospital, when her temperature (40.4°C) was even (marginally) higher than it had been when examined by the GP (40.1°C). The apparent improvement from "lifeless" in the ambulance to "alert" on admission cannot therefore be explained by a reduction in her fever.
- (9) Dr Dennison's view needs to be treated with a little caution because he did not think there was any abnormality of the tonsils. Nevertheless, subject to that, he was in the best position to form an assessment. He was the only clinician to see a child who had not been subject to medical intervention. His contemporaneous view was recorded in the notes as "? meningococcal" and in the referral letter as "? meningitis". The contemporaneous medical assessment was therefore that the symptoms were indicative of a serious bacterial infection.
41. This does not, in itself, necessarily mean that either Dr Rowley or Dr Roe should have known that the change in C's condition was attributable to the antibiotics. The fact that Professor Klein and Professor Masterton – both experts in microbiology – are unable (with the benefit of everything that is now known) to reach agreement on this point demonstrates that it is a point of real difficulty. It could not reasonably be expected that a consultant paediatrician (far less a SHO) should have been able

prospectively (and without further investigation) to reach a definitive conclusion on the issue. The reasonableness of the standard of medical care provided is therefore a separate question which is not directly answered by my findings as to the clinical pathway.

Liability

The legal test for liability

42. The Defendant is responsible in law for the acts and omissions of Dr Rowley and Dr Roe in the course of their clinical duties. They each owed a duty of care to treat C with reasonable care and skill.
43. The duty of care is that prescribed by McNair J in *Bolam v Friern Hospital Management Committee* [1957] 1 WLR 582 as further explained by Lord Browne-Wilkinson in *Bolitho v City and Hackney HA* [1998] AC 232: it is a duty to act in accordance with a practice accepted as proper by a responsible body of medial opinion, so long as that medical opinion is capable of withstanding logical analysis.
44. The skill to be expected of a doctor is that which is to be expected of reasonably competent members of the profession who have the same level of seniority (irrespective of length of experience at that level of seniority) and specialisation – see *FB v Princess Alexandra Hospital NHS Trust* [2017] EWCA Civ 334 [2017] PIQR P17 *per* Jackson LJ at [63]. It follows that Dr Rowley is to be judged by the standard of a reasonably competent paediatric SHO. Dr Roe is to be judged by the standard of a reasonably competent paediatric consultant. This is, however, subject to the duty to ensure that patients are seen by clinicians of the appropriate specialism and the appropriate level of seniority – see *FB per* Thirlwall LJ at [30] and Jackson LJ at [59].

Medical definitions

45. There is considerable controversy over the use of different medical terminology. A number of the apparent issues between the expert witnesses were, on analysis, due to different use of medical terms (and cf paragraphs 29-30 above). In May 2007 (see paragraph 56 below) NICE provided a glossary of terms, which included the following of relevance to this case:

“Bacteraemia The presence of bacteria in the blood. In this condition the bacteria are not causing an infection in the bloodstream (cf **septicaemia**).

Fever without (apparent) source (FWS) The condition in which a patient has a fever but no obvious cause or focus of infection can be found on physical examination.

Ill appearance An ill-looking child is an overall impression the assessing healthcare professional can make when presented with a child. This impression is formed not only from objective measurements but also from subjective feelings about how the child looks/reacts. If a healthcare professional’s subjective instinct is to describe the child as ill looking then the child is

most likely at high risk of serious illness. Healthcare professionals should be confident to follow their impressions of a child's wellbeing.

Meningitis Inflammation of the meninges, the membranes that lie between the surface of the brain and the inside of the skull. Meningitis is usually caused by infection with bacteria or viruses. Bacterial meningitis is a serious condition associated with appreciable mortality and significant neurological complications.

Meningococcal disease Any of a number of infections caused by the bacterium... (...meningococcus). In young children meningococcal disease usually manifests as septicaemia, meningitis or a combination of the two. Meningococcal septicaemia is the leading infectious cause of death in childhood in the UK.

Septic Affected by bacterial infection; hence septic shock, septic arthritis etc.

Septicaemia A serious medical condition in which there is rapid multiplication of bacteria in the bloodstream and in which bacterial toxins are present in the blood. Septicaemia is usually fatal unless treated promptly with parenteral antibiotics.”

46. Very helpfully, Dr Thompson provided his own glossary of the medical terms that he had used in his report. Although the precise wording of his definitions are different, they seem to me to correspond closely to the definitions used by NICE.
47. The NICE definitions of bacteraemia and meningitis do not require the presence of clinical symptoms. They therefore encompass asymptomatic or pre-symptomatic bacteraemia or meningitis. By contrast, Dr Ninis used bacteraemia synonymously with symptomatic bacteraemia and did not appear to consider that an asymptomatic bacteraemia was a medically useful concept.

Diagnosis and treatment of meningitis in 2006

48. It was very well known by paediatricians in 2006 that bacterial meningitis is a serious condition that, untreated, can result in death within a short period of time. Although relatively rare, it was sufficiently common to be of considerable concern to clinicians. Hospital paediatricians could be expected to be familiar with the approach to the diagnosis and treatment of meningitis that was advocated in the standard manuals and textbooks.
49. The Advanced Paediatric Life Support Manual (2005) (“APLS”) says (in a section addressing “the child with a decreased conscious level”) the following about the approach to the child with meningitis/encephalitis:

“11.7 APPROACH TO THE CHILD WITH MENINGITIS/ENCEPHALITIS

After the neonatal period, the commonest cause of bacterial meningitis is... *Meningococcus*. There is still a mortality rate of around 5% and a similar rate of permanent serious sequelae... Infection with *Streptococcus pneumoniae* is less common and may follow an upper respiratory infection... Long-term morbidity and mortality occur in up to 30% of cases. A wide range of infections may also cause encephalitis.

Diagnosis of bacterial meningitis

In the 3-year-old child and under

Bacterial meningitis is difficult to diagnose in its early stages in this age group. The classic signs of neck rigidity, photophobia, headache, and vomiting are often absent... Almost all children with meningitis have some degree of raised intracranial pressure, so that, in fact, the signs and symptoms of meningitis are primarily those of raised intracranial pressure. The following are signs of possible meningitis in infants and young children:

- Coma
- Drowsiness (often shown by lack of eye contact with parents or doctor)
- High-pitched cry or irritability that cannot be easily soothed by parent
- Poor feeding
- Unexplained pyrexia
- Convulsions with or without fever
- Apnoeic or cyanotic attacks
- Purpuric rash.”

50. Nelson’s Textbook of Paediatrics (17th edition, 2004) says:

“Acute Bacterial Meningitis Beyond the Neonatal Period

Bacterial meningitis is one of the most potentially serious infections occurring in infants and older children. This infection is associated with a high rate of acute complications and risk of long-term morbidity. The incidence of bacterial meningitis is sufficiently high in febrile infants that it should be included in the differential diagnosis of altered mental status or other neurologic dysfunction.

...

Diagnosis. The diagnosis of acute pyogenic meningitis is confirmed by analysis of the CSF ... [Lumbar puncture] should be performed when bacterial meningitis is suspected... Blood cultures should be performed in all patients with suspected

meningitis. Blood cultures reveal the responsible bacteria in 80-90% of cases of meningitis.”

51. Nelson’s (separate) “Essentials of Paediatrics” says:

“Clinical manifestations. Manifestations of bacterial meningitis may be preceded by several days of upper respiratory tract symptoms.... In young infants, signs of meningeal inflammation may be minimal; only irritability, restlessness, and poor feeding may be noted. Fever usually is present. Inflammation of the meninges is associated with headache, irritability, nausea, vomiting, anorexia, nuchal rigidity, lethargy and, occasionally, photophobia...

Diagnosis and Differential Diagnosis. Lumbar puncture should be performed in every child when bacterial meningitis is suspected, except when signs (other than a bulging fontanel) of increased intracranial pressure are present.”

52. Forfar & Arneil’s Textbook of Paediatrics (Sixth Edition, 2003) says:

“...in the early stages of the disease, and in young children, the symptoms and signs of [acute meningitis] are often non-specific. Fever may be absent in up to 30% of individuals, and 20-30% do not have signs of meningism at presentation. Previous antibiotic therapy may also mask the significance of the presenting illness.

...

In infants and toddlers, the symptoms are often those of a generalized illness. Irritability, lethargy, convulsions, refusal of feeds, vomiting, a high pitched cry and a bulging fontanelle should all alert the physician to the presence of meningitis. The ‘typical’ features of meningitis may be absent or difficult to interpret or elicit.

....

If meningitis is suspected, the diagnosis should be confirmed by lumbar puncture and examination of CSF. ...

...

Except in cases where the patient is well and the diagnosis very uncertain, antibiotics should be administered empirically while awaiting the result of the LP.”

53. A 1994 article in “Journal of Infection” reviewed 75 episodes of pneumococcal meningitis in 69 patients (including 12 patients between the age of 6 months and 2 years). It recorded:

“The most common features at presentation [in those between 6 months and 2 years old] were vomiting, drowsiness and poor feeding”.

54. A 1995 article in “Clinical Infectious Diseases” studied the outcome of pneumococcal meningitis in 83 children (median age 8 months, range 3 days to 12 years) who had been admitted to a referral hospital between 1970 and 1994. The “baseline characteristics” at admission were summarised as follows:

“...41 of the 83 patients had the classical triad of signs of fever, nuchal rigidity, and change in mental status. The other 42 children had at least one of these signs. Fever was the only presenting sign in six patients. Neck stiffness was present in 67% of patients during initial examination. Most patients had ...abnormal mental status at the time of presentation: 34% were alert or irritable, 54% were somnolent or lethargic, and 12% were comatose.”

Tonsillitis

55. Forfar & Arneil gives the following account:

“...Of the cases, 50% are viral and 50% are bacterial...”

The onset is abrupt, with pain in the throat, associated shivering and a pyrexia up to 39°C. The pain may be severe and radiate to the ears. Swallowing is acutely sore and solid food is refused, although fluids may be accepted. The disease progresses over 48 hours, even with antibiotic therapy, and the swelling of the throat and the tonsils may give dysphagia for fluids and even for saliva which may dribble from the mouth. Speech may become thick and muffled and there is often painful enlargement of cervical glands.

On examination, the mucosa of the pillars of the fauces and soft palate are congested and as the disease progresses the tongue becomes coated and the breath become offensive. The tonsils are swollen and inflamed, with a purulent exudate. In severe cases, edema of the palate and the uvula may make the voice muffled and thick. Sometimes in streptococcal infections a scarlatiniform rash appears over the body.”

NICE guidelines

56. There were no relevant NICE guidelines in force in January 2006. In May 2007 NICE published a Clinical Guideline on “Feverish illness in children: assessment and initial management in children younger than 5 years.” Dr Thompson did not initially place any reliance on this guideline, recognising that it was not in force at the relevant time. Dr Ninis did rely on the guideline and pointed out that it was intended to codify existing best practice and was based on existing research and practice. The guideline itself says that at the time it was published there was “considerable variation in the provision of care for children with feverish illness across the UK.”

57. Given that the guideline was not published in 2006, very considerable caution should be applied before criticising any clinician for not adopting the practice it advocates. I prefer to assess the care that was provided by reference – in the first instance – to the standard textbooks in print at the time (interpreted with the benefit of the expert evidence) and then to use the NICE guideline as a cross-check. That said, to the extent that the care provided accorded with practice advocated by the subsequent NICE guideline that would be powerful evidence that it was reasonable.
58. The guideline first requires an assessment of the presence or absence of any immediately life-threatening features. It is not suggested that on 26 January 2006 C presented with any immediately life-threatening features. The guideline then requires an assessment of whether there is a high risk of serious illness. This is undertaken by reference to a traffic light system:

“Children with fever and *any* of the symptoms or signs in the ‘red’ column should be recognised as being at high risk. Similarly, children with fever and any of the symptoms or signs in the ‘amber’ column and none in the ‘red’ column should be recognised as being at intermediate risk. Children with symptoms and signs in the ‘green’ column and none in the ‘amber’ or ‘red’ columns are at low risk. The management of children with fever should be directed by the level of risk.”

	Green – low risk	Amber – intermediate risk	Red – high risk
Colour	<ul style="list-style-type: none"> • Normal colour of skin, lips and tongue 	<ul style="list-style-type: none"> • Pallor reported by parent/carer 	<ul style="list-style-type: none"> • Pale/mottled/ashen/blue
Activity	<ul style="list-style-type: none"> • Responds normally to social cues • Content/smiles • Stays awake or awakens quickly • Strong normal cry/not crying 	<ul style="list-style-type: none"> • Not responding normally to social cues • Wakes only with prolonged stimulation • Decreased activity • No smile 	<ul style="list-style-type: none"> • No response to social cues • Appears ill to a healthcare professional • Does not wake or if roused does not stay awake • Weak, high-pitched or continuous cry
Respiratory		<ul style="list-style-type: none"> • Nasal flaring • Tachypnoea ... RR>40 breaths/minutes age>12 months • Oxygen saturation ≤ 95% in air • Crackles 	<ul style="list-style-type: none"> • Grunting • Tachypnoea: RR > 60 breaths/minute • Moderate or severe chest indrawing
Hydration	<ul style="list-style-type: none"> • Normal skin and eyes • Moist mucous membranes 	<ul style="list-style-type: none"> • Dry mucous membranes • Poor feeding in infants • CRP ≥ 3 seconds • Reduced urine output 	<ul style="list-style-type: none"> • Reduced skin turgor
Other	<ul style="list-style-type: none"> • None of the amber or red symptoms or signs 	<ul style="list-style-type: none"> • Fever for ≥ 5 days 	<ul style="list-style-type: none"> • Age 0-3 months, temperature ≥ 38°C • Age 3-6 months, temperature ≥ 39°C
		<ul style="list-style-type: none"> • Swelling of a limb or joint • Non-weightbearing limb/not using an extremity 	<ul style="list-style-type: none"> • Bulging fontanelle • Neck stiffness • Status epilepticus • Focal neurological signs • Focal seizures
		<ul style="list-style-type: none"> • A new lump > 2cm 	<ul style="list-style-type: none"> • Bile stained vomiting

59. Once the risk of serious illness has been assessed, the next priority is to determine the underlying source of the fever. NICE recommends that meningococcal disease “should be considered in any child with fever and a non-blanching rash.” It recommends that meningitis should be considered “in a child with fever and [neck stiffness, or bulging fontanelle, or decreased level of consciousness or convulsive status epilepticus].” It warns:

“Healthcare professionals should be aware that classical signs of meningitis (neck stiffness, bulging fontanelle, high-pitched cry) are often absent in infants [ie a child under the age of 1] with bacterial meningitis.”

60. For the non-paediatric practitioner it counsels against the use of antibiotics “in children without a specific bacterial infection... except where meningococcal disease is suspected, where immediate parenteral benzylpenicillin is currently recommended.”
61. It makes the following recommendations for paediatric specialists dealing with children aged 3 months or older:

“Red’ group

Children with fever without apparent source presenting to paediatric specialists with one or more ‘red’ features should have the following investigations performed:

- full blood count
- Blood culture
- C-reactive protein
- Urine testing for urinary tract infection.

The following investigations should also be considered in children with ‘red’ features, as guided by the clinical assessment:

- Lumbar puncture in children of all ages (if not contra-indicated)
- Chest X-ray irrespective of body temperature and white blood cell count (WBC)
- Serum electrolytes and blood gas.

‘Amber’ group

Children with fever without apparent source presenting to paediatric specialists who have one or more ‘amber’ features should have the following investigations performed unless deemed unnecessary by an experienced paediatrician:

- Urine should be collected and tested for urinary tract infection
- Blood tests: full blood count, C-reactive protein and blood cultures
- Lumbar puncture should be considered for children younger than 1 year

- Chest X-ray in a child with a fever greater than 39°C and white blood cell count (WBC) greater than 20 x 10⁹/litre.

‘Green’ group

Children who have been referred to a paediatric specialist with fever without apparent source and who have no features of serious illness (that is, the ‘green’ group) should have urine tested for urinary tract infection and be assessed for symptoms and signs of pneumonia.

Routine blood tests and chest X-rays should not be performed on children with fever who have no features of serious illness (that is, the ‘green’ group).

62. NICE recommends that children with fever presenting to specialist paediatric care should be given immediate parenteral antibiotics if they are showing signs of meningococcal disease. It adds “Immediate parenteral antibiotics should be considered for children with fever and reduced levels of consciousness. In these cases symptoms and signs of meningitis and herpes simplex encephalitis should be sought.”
63. The incidence of co-existing viral and bacterial infections is well recognised. NICE recommended that because children with proven viral infection still have a risk of serious bacterial infection, “they should be assessed for serious illness in the same way as other children.”

Thames Valley & Wessex Paediatric Sepsis Screening Tool and UK Sepsis Trust Paediatric Sepsis Toolkit

64. Dr Roe drew attention to a Sepsis Screening Tool introduced (after 2006) by Thames Valley & Wessex Paediatric Critical Care Operational Delivery Unit. Dr Ninis drew attention to the UK Sepsis Trust Paediatric Sepsis Toolkit which was introduced in 2015. I take the same approach to these tools as I do to the NICE guidelines (see paragraph 57 above).
65. The Thames Valley & Wessex toolkit requires a clinician to assess whether the temperature is abnormal (<36°C or >38.5°C) and whether the pulse and respiration rates are above prescribed levels. If two of those features are present the clinician should then consider whether one of the following features is present: (a) altered mental state: sleepy, floppy, lethargic or irritable, (b) mottled skin or prolonged capillary refill time or ‘flash’ capillary refill time, (c) clinical concern regarding possible sepsis. If one of those features is present the tool warns that it is “an emergency” and that there should be an immediate senior clinician review. If the senior clinician decides not to proceed further then this must be documented. Otherwise, prescribed steps should be taken, including the administration of intravenous antibiotics (either Ceftriaxone, or a condition specific antibiotic if there is a clear source of infection).
66. The UK Sepsis Trust Toolkit requires an assumption to be made that sepsis is present if two of the following criteria are satisfied: (a) core temperature < 36°C or >38.5°C, (b) inappropriate tachycardia (or bradycardia) for age, (c) altered mental status

(including sleeping/irritability/lethargy/floppiness), (d) reduced peripheral perfusion/prolonged capillary refill/reduced urine output or wet nappies.

Allegations of breach of duty

67. C's pleaded allegations of breach of duty on 26 January include the following:

"a. Failed properly to take into account or act upon the concern of the Claimant's General Practitioner, Dr Dennison, who had suspected meningitis, given the Claimant intramuscular penicillin and admitted her to hospital as an emergency.

b. Failed properly to take into account, or act upon the concern expressed by the Claimant's parents, who advised the Defendant's staff on a number of occasions that the Claimant was behaving very abnormally for her and that they were concerned about the possible diagnosis of meningitis.

c. Failed properly to take into account and act upon the Claimant's clinical presentation, which indicated a significant risk that she was suffering from a serious bacterial infection (SBI). In particular failed to take proper account of the following symptoms and signs.

(i) Her temperature had been 40.1°C and by the time she arrived at the hospital it was 40.4°C, despite having been given paracetamol (Calpol) 1 hour before.

(ii) The Claimant was lifeless and lethargic with glazed eyes and a vacant stare.

(iii) The Claimant had vomited on a number of occasions.

d. Failed to appreciate that the Claimant's clinical presentation indicated a significant risk of a serious bacterial infection (SBI).

...

f. Failed to appreciate that it was improbable that the Claimant's symptoms were due to an uncomplicated tonsil infection.

...

i. Failed to perform a full septic screen before discharging the Claimant from hospital.

j. Failed to continue the parenteral antibiotic treatment commenced by the Claimant's General Practitioner and failed to commence intravenous antibiotics.

k. Failed to admit the Claimant to the hospital for observation and treatment, when she presented as a young child with a clinical picture which indicated a significant risk of a SBI."

68. Paragraph k is repeated as an allegation of breach of duty in respect of the treatment on 27 January.
69. The Defendant argues that C is precluded from relying on the references in the GP letter and C's mother's account to C being "lifeless" and "lethargic with glazed eyes and a vacant stare". This is because paragraph c(ii) reads "The Claimant was lifeless and lethargic..." rather than "The Claimant had been lifeless and lethargic...". It is said that the use of the past, rather than pluperfect, tense means that the allegation must be read as being limited to the symptoms that were displayed at the time of the presentation in hospital, rather than the (earlier) symptoms at the time of Dr Dennison's examination. I reject this interpretation. It would artificially and unrealistically constrain the ambit of C's case which has been clear throughout. Paragraph c(ii) is sufficiently broad to cover the symptoms and signs of lifelessness, lethargy, vacant stare and glazed eyes which represented the clinical presentation to Dr Dennison and which were reported to the hospital clinicians. These matters would, in any event, come within the scope of paragraphs a and b, because they were part of the reason that Dr Dennison had suspected meningitis, and part of the reason for the concern expressed by C's parents.
70. The essence of C's case is that having regard to the findings made by Dr Dennison, and the concern expressed by C's parents, the hospital clinicians should have appreciated that there was a significant risk of a serious bacterial infection and should have administered intravenous antibiotics. This case is more than amply identified in the pleaded particulars of negligence. It has been extensively debated by the medical experts.

The expert evidence on liability

71. I heard evidence from Dr Nelly Ninis, instructed on behalf of C, and Dr Alistair Thomson, instructed on behalf of the Defendant. They are both experienced consultant paediatricians with considerable experience of the diagnosis of meningitis and bacterial infection in young children. They are both eminently well qualified to opine on the standard of medical care that was provided to C.
72. Dr Ninis is dually qualified in General Paediatrics and Paediatric Infectious disease, Immunology and Allergy. She has been a consultant since 2006. She has undertaken a major national research study into meningococcal disease in childhood. She was the lead author of a paper on the role of healthcare delivery in the outcome of meningococcal disease in children, which is cited in the NICE guidelines.
73. Dr Ninis' opinion is that C developed the classic clinical features of a serious bacterial infection with systemic inflammation, that this should have been recognised by the hospital clinicians who ought to have appreciated that her apparently better presentation at hospital may have been attributable to the effect of intramuscular antibiotics, and that the only safe course was to administer a lumbar puncture in order to confirm or disprove the general practitioner's diagnosis. She considered that the care C received in hospital "fell way below a reasonable standard of care."
74. In particular, she considers that a paediatric consultant should have appreciated:

- (1) The importance of Dr Dennison's assessment which identified a number of features consistent with a serious bacterial infection and expressed serious concerns that were fully justified by the findings he had made. It was "foolhardy" and "unreasonable" to dismiss those concerns without obtaining further data.
- (2) Viral infections can precede invasive bacterial infections. A viral infection like tonsillitis will usually begin to ameliorate after 3-4 days. C was presenting on the third or fourth day with a deteriorating condition. This required serious consideration of a secondary bacterial infection.
- (3) Any observations carried out by Dr Roe were confounded by the intramuscular penicillin which would have had a significant effect on the level of blood stream infection. The fact that vital signs had settled was not therefore a safe basis for optimism. Dr Ninis said:

"They should have considered the therapeutic effect of IM penicillin on a serious bacterial infection such as meningitis or blood stream infection. It is not apparent that they understood that the injection of penicillin would be highly active against sensitive bacteria. This should have been understood, given the instructions of the Chief Medical Officer to give IM penicillin to children suspected to have meningococcal infection, which is a rapidly progressive infection. They should have appreciated that any clinical assessment undertaken after the IM injection at 12.20pm would be confounded by the therapeutic effects of the penicillin and furthermore, the later the assessment in the afternoon, the greater the potential effect of the penicillin."

75. According to Dr Ninis, if these matters had been taken into account then intravenous antibiotics should have been commenced: "No other management was acceptable as the IM penicillin had started treating the SBI... this was the only logical and acceptable management given the clinical scenario on admission."
76. Ms Gollop's questioning of Dr Ninis implied that because she had been involved in the case for a long time she may have lost a degree of objectivity. It was certainly the case that Dr Ninis had very strong views, which she forcefully expressed, about the steps that should have been taken by the hospital doctors on 26 January, and the failure to take those steps. It is possible that the sheer strength of those views may have influenced her evidence and the extent to which countervailing argument was (or was not) sufficiently articulated by her.
77. Ms Gollop gave as a suggested example Dr Ninis' approach to the diagnosis of tonsillitis. Initially, Dr Ninis did not unequivocally accept that C had tonsillitis. Further particulars of the claim, drafted with her input, declined to state whether C had tonsillitis and instead simply pointed to the different findings made by Dr Dennison on the one hand and Dr Rowley and Dr Roe on the other hand. Similarly, Dr Ninis stated that she could not say what would have been shown by throat examination on 27 January. It might be argued that Dr Ninis was a little obtuse in this respect. The fact is, however, that there was a difference between the findings of Dr Dennison and those of Dr Rowley and Roe. Ultimately, it is for the Court to resolve

any factual conflict. Given the conflict in the medical notes, I do not think that Dr Ninis' approach to this issue was entirely unreasonable.

78. In the body of her report, Dr Ninis said "Dr Dennison... did not consider the throat was inflamed enough to account for the systemic signs of illness." Literally this was true, because Dr Dennison had not detected any abnormality of the throat. Dr Ninis' portrayal did, however, carry the implication (not supported by the contemporaneous records) that Dr Dennison had detected the inflammation of the tonsils but had reached a considered view that this did not account for the constellation of worrying symptoms he had noted. This implication was misleading. I am, however, certain that there was no deliberate attempt to mislead and that this infelicity in expression does not undermine Dr Ninis' central conclusions. Those conclusions (perhaps shorn of some of the adverbial emphasis) seem to me to have a strong internal logic and to be consistent with the textbooks.
79. Dr Thompson qualified in 1976 and was appointed as a consultant in 1990. He practises in general paediatrics with special interests in meningitis and meningococcal disease. He has co-led a programme of research into meningococcal disease and has widely published in the fields of meningitis and meningococcal disease.
80. Dr Thompson says that, untreated, septicaemia and/or meningitis are almost always fatal, and that the presence of the signs of meningitis should (absent contraindication) lead to lumbar puncture (enabling a diagnosis to be made if culture reveals a growth of pneumococcus). Although Dr Thompson said that a lumbar puncture may potentially be contraindicated in some cases of meningococcal septicaemia, nobody suggested that there was any contraindication in this case. Nevertheless, Dr Thompson considers that there is no basis for criticising the standard of care of the hospital clinicians on 26 January. He says that C had clinical tonsillitis with no features of septicaemia or meningitis or other serious bacterial infection, the clinicians were entitled to rely on those findings, and they made reasonable and logical clinical decisions.
81. He rightly counsels against the inappropriate use of hindsight: "It is important not to reason backwards that poor outcome implies deficient care. This retrospective approach to analysis does not allow for the problems in diagnosis faced prospectively by the doctors at the time."
82. Dr Thompson's conclusions are predicated on his view that "[a]ssessment on 26 January was too soon after intramuscular antibiotics for clinical signs to have been modified or masked". Dr Ninis disagrees. On the balance of probabilities, I prefer Dr Ninis' opinion on this issue for the reasons given at paragraph 40 above. Indeed, even Professor Masterton disagrees with Dr Thompson's opinion in the way it is there expressed – Professor Masterton expressly accepted that there may have been some clinical impact (albeit the full impact of the antibiotics may not have been evident). In fairness to Dr Thompson, he did subsequently (in the joint medical report) modify his view and agree that even at the time of Dr Rowley's examination the antibiotics would have had "some effect" on C's clinical status. However, this simply serves to undermine an important premise for Dr Thompson's ultimate conclusions.
83. Dr Thompson says that intramuscular antibiotics could not have abolished the presence of a non-blanching rash or neck stiffness. This is irrelevant. There was no

question of a non-blanching rash or neck stiffness (pre-antibiotic examination did not detect either), but it is clear from the textbooks that the absence of these features does not rule out serious bacterial infection.

84. Dr Thompson suggests (without wishing “to criticise the GP”) that Dr Dennison had not detected any signs of either septicaemia or meningitis. Dr Ninis disagrees: she says that the glazed look, lethargy, floppiness, tachycardia, raised fever and respiratory rate and possible photophobia were indicators of a serious bacterial illness. I would leave tachycardia and raised respiratory rate out of this list: Ms Gollop QC rightly pointed out that C’s respiratory rate was not necessarily outside a normal range, and that the literature did not support the suggestion that her tachycardia and tachypnoea (even if accurately described as such) were themselves indicators of serious illness. Conversely, I would add vomiting to the list. Subject to that, I again prefer the evidence of Dr Ninis on this issue which appears to be consistent with the contemporaneous text books and scientific literature (see paragraphs 49-54 above):
- (1) APLS identifies drowsiness, poor feeding and unexplained pyrexia as signs of possible meningitis, and photophobia and vomiting as “classic signs” (see paragraph 49 above).
 - (2) Nelson’s Textbook of Paediatrics identifies altered mental status or other neurologic dysfunction as a basis for including bacterial meningitis in the differential diagnosis (see paragraph 50 above).
 - (3) Nelson’s “Essentials of Paediatrics” says that inflammation of the meninges is associated with nausea, vomiting, lethargy and, occasionally, photophobia (see paragraph 51 above).
 - (4) Forfar & Arneil’s Textbook of Paediatrics states that lethargy, refusal of feeds and vomiting should alert the physician to the presence of meningitis (see paragraph 52 above).
 - (5) The literature suggests that common features at presentation in C’s age group were “vomiting, drowsiness and poor feeding” (see paragraph 53 above) and fever and change in mental status (see paragraph 54 above).

Dr Rowley’s examination at 2pm on 26 January

85. Dr Rowley’s examination was careful, thorough and appropriate. She noted that it was a “GP referral”. She detected the enlarged lymph nodes and inflamed tonsils which had not been noted by Dr Dennison. She looked for signs of meningitis and meningococcal disease (noting that there was no rash and no neck stiffness) at the outset of her examination, showing that she had in mind the concerns that had been expressed by Dr Dennison and C’s mother. Dr Rowley did not rule out the possibility of meningitis, merely observing that it was “unlikely” (albeit I accept that she may have used “unlikely” in the sense of “very unlikely”). She says in her statement, and I accept, that she appreciated that the intramuscular antibiotics “could potentially mask the development of C’s symptoms.”
86. Ms Ewins suggested that Dr Rowley ought to have explicitly noted the findings that had been made by Dr Dennison (particularly “lethargic / floppy...eyes... ‘vacant’”). I

do not think that this is a justified criticism. It is not a criticism that is advanced by Dr Ninis who says that as long as Dr Rowley considered the information “she did not have to re-record or transcribe it.” There was no particular reason for her to recite the observations made by a previous clinician, which were available to all of the doctors as part of the pack of notes. Dr Roe read the letter from Dr Dennison for himself. In any event the history of “Quiet, lethargic” was recorded by Dr Rowley (albeit as part of the history taken from C’s mother).

87. Dr Ninis’ opinion was that it was “incorrect” not to proceed with blood tests, and that Dr Rowley “should have written a differential diagnosis before prematurely concluding the GP assessment was inaccurate.” Dr Rowley says “I considered a differential diagnosis of meningitis but thought it unlikely and made a note to this effect.” Dr Thompson observes that the note “impression tonsillitis, meningitis unlikely” is, arguably, tantamount to a differential diagnosis.
88. The central question that arises, both in respect of Dr Rowley and in respect of Dr Roe, is whether they should have suspected that C did have a serious bacterial infection so as to necessitate further investigations (including a lumbar puncture) and administration of intravenous antibiotics. This requires an assessment of the weight to be attached to the findings made by Dr Dennison compared to those made in the hospital, in the context of the medication that had been provided in between times – the intramuscular antibiotics, the Calpol, and (in hospital) the oral antibiotics and further paracetamol (and ibuprofen).
89. In her written report Dr Ninis says “I consider that a junior doctor may not have the experience to understand this issue, but a Consultant certainly should.” In her oral evidence she emphasised that this was “a decision to be taken at a senior level” and that it required “consultant input, or at the very least a registrar.”
90. Leaving aside the question of whether Dr Rowley should have ensured an earlier assessment by Dr Roe (which – in the light of the causation landscape – it is not necessary to determine), in my judgment it has not been demonstrated that the care Dr Rowley provided fell below the standard of a reasonably competent Senior House Officer.
91. One thing, however, is clear. C did, at this point (although unknown to the clinicians) have a serious bacterial infection that had breached the blood brain barrier. The GP had raised the prospect of meningitis, and Dr Rowley had not ruled that out (although she considered it “unlikely”). C still had a high fever, high peripheral capillary refill time, high heart rate and was very miserable. The diagnosis of tonsillitis did not easily explain the findings made by the GP. Dr Rowley’s plan was that she be admitted for observation and that fluid intake be encouraged (and, if not tolerated, intravenous fluids administered). It was obviously important that this plan be implemented. All this provides the context for the assessment of C’s further management.

Hospital management 2pm-6.40pm on 26 January

92. The extent of the recorded observations is lamentable. There is no fluid balance chart. There is a single record of fluids being offered without any record of whether any fluids were taken. Notwithstanding Dr Rowley’s direction that intravenous fluids should be administered if oral intake was not administered this was not done. There is

a single set of observations at 3.30pm, and nothing in the period 3.30pm – 6.40pm. No reason has been given by the Defendant for the failure to implement the plan that Dr Rowley had formulated. Dr Rowley said in evidence that she would have expected more observations than have been recorded. Dr Roe said that it was a small open plan unit such that clinicians would be walking past and would, in that context, be in a position to observe C and intervene in the event of deterioration. I do not consider that this is what Dr Rowley had in mind by observation, and it was not an adequate substitute.

93. Dr Thompson said that he “would like to have seen a better record of fluids during the afternoon.” Dr Ninis’ opinion is that the failure to take more active steps to monitor C’s fluids “was not reasonable given [C’s] young age, the fact that she was already at least mildly dehydrated (dry lips) and the plan was to monitor her fluids.” I agree. In this respect the standard of medical care afforded to C fell below that which would be sanctioned by any reasonable body of medical opinion.
94. However, there is no evidence that the failure to carry out more diligent observation of C had any adverse effect. On the contrary, the central theme of Dr Ninis’ evidence is that observations alone were never going to be sufficient to identify the problem – investigation, specifically a lumbar puncture, was required.
95. It follows that the substandard level of observations did not cause C’s subsequent injuries.

Dr Roe’s examination at 6.40pm

96. Dr Roe was a newly qualified consultant in the first six months of his first consultant post, but his medical care falls to be assessed against the standard to be expected of a hospital consultant (see paragraph 44 above): no allowance is made for his (then) relative inexperience in a consultant posting.
97. Dr Roe had the referral letter from the GP, the nurse’s admission notes and Dr Rowley’s note of her examination at 2pm. His evidence, which I accept, is that he read these. He accepts responsibility for the clinical note which was made, on his behalf, by a SHO.
98. He examined C’s tonsils. They were large, inflamed and pussy. His “impression” of tonsillitis cannot be criticised – C did have viral tonsillitis. However, the positive diagnosis of tonsillitis did not rule out the possibility of a serious bacterial infection, and did not easily explain the findings made by Dr Dennison.
99. C’s mother says that she explicitly asked Dr Roe to rule out the possibility of meningitis. I accept that evidence. Having had the prospect of meningitis raised by NHS Direct, and the provisional diagnosis of meningitis made by the General Practitioner, it would have been surprising if she had done otherwise. For his part, Dr Roe readily accepted that it was his “job” to “rule out a serious illness” and does not dispute that C’s parents were anxiously pressing him to do just that.
100. It is not clear that Dr Roe did in fact “rule out” any other serious illness. Although he made a positive diagnosis of tonsillitis, nothing in the medical notes positively shows that he discounted all other possible diagnoses. Dr Roe said that tonsillitis was the

“likely” diagnosis, and that “you do not list all the other ones”. In the course of his evidence he accepted that he should have asked his SHO to note that there were other possible diagnoses (he had in mind a serious bacterial infection rather than, specifically, meningitis). He said that there was “something about the case” that had caused him to arrange a further review the following day, rather than simply discharging C, thereby indicating that he was not entirely sure that this was a simple case of tonsillitis that would resolve. He did, however, think that a serious bacterial infection was “sufficiently down the list” that it was “not appropriate to investigate.”

101. I can readily understand why, on the basis of C’s presentation at 6.40pm, Dr Roe diagnosed tonsillitis and did not think it likely that C was seriously unwell. C was alert and “walking around [the] play area.” Her temperature had come right down to 37.2°C (and, so far as can be told, it had been at about that level for 3 hours).
102. It was, however, necessary to confront the findings that had been made by Dr Dennison. Those findings were consistent with a serious bacterial infection. They included possible photophobia (a “classic” sign of bacterial meningitis) as well as poor feeding, floppiness, lethargy, vacant expression, vomiting and pyrexia (at a level above that ordinarily associated with tonsillitis). All of these signs were identified in one or more of the leading textbooks as indicative of meningitis. None of them are suggested as being typically associated with tonsillitis.
103. It is clear that Dr Roe had the possibility of meningitis in mind – he tested for neck stiffness and found (I accept correctly) that there was none. However, this was not sufficient to discount the possibility of meningitis – the evidence at the time was that a significant number of toddlers with meningitis would not have this classic symptom:
 - (1) The APLS said that this “classic” sign is often absent in a child aged 3 years or under (see paragraph 49 above);
 - (2) Forfar & Arneil said that this “typical” feature may, in toddlers, be absent or difficult to interpret or elicit (see paragraph 52 above).
 - (3) The 1995 article in “Clinical Infectious Diseases” suggests that neck stiffness was not present in a third of the cases that were studied (see paragraph 54 above).
104. Dr Thompson points to a 1992 paper cited by NICE in 2007 which indicated that neck stiffness was present in about 75% of infants with bacterial meningitis (and given that the prevalence of neck stiffness as a symptoms of meningitis is understood to increase with age, it might be even higher than 75% for 15 month old children). However, that still leaves an appreciable number who do not have neck stiffness, and NICE did not consider that absence of neck stiffness was sufficient to discount meningitis – its recommendation was that meningitis should be considered in a child with any of the listed features (which included neck stiffness but also decreased level of consciousness).
105. Similarly, I am satisfied that Dr Roe looked to see whether a rash was present, again showing that he was positively looking for signs consistent with a serious bacterial illness. Again, however, the absence of a rash did not rule out serious illness (and neither Dr Roe nor Dr Thompson suggest otherwise).

106. Dr Thompson says that hospital clinicians are entitled to carry out their own examination. Of course that is correct. It does not, however, mean that they can safely disregard findings made by a general practitioner. Although Dr Dennison did not detect the signs of tonsillitis, that does not invalidate his other positive findings. Neither Dr Rowley nor Dr Roe (nor Dr Thompson) suggested that Dr Dennison might have been mistaken in any of the positive symptoms he recorded.
107. On any view Dr Dennison's findings were not typical of tonsillitis. The temperature was significantly higher than that typically associated with tonsillitis. The floppiness, glazed eyes and vacant expression are accepted by the experts as being outside the expected symptomatology of tonsillitis. Of course, out of the huge number of children that present with tonsillitis in any given year, there will be some with unusually severe symptoms: I accept Dr Roe's evidence that he had encountered cases of tonsillitis where the child had a high fever and was floppy. But this was far from usual.
108. Dr Roe says that in his experience, children with meningitis, even with a dose of intramuscular antibiotics, "rarely walk around let alone attempt to play." There is, however, no evidence that C "attempt[ed] to play", and C's parents expressly deny that she did so. As to the restorative impact of antibiotics in a bacterial infection, I have found, on the balance of probabilities, that the change in C's condition was attributable to the intramuscular injection. Although Dr Roe regarded this as "rare" there is no primary evidence that the potential confounding effect of the antibiotics could safely be ignored. On the contrary, this was well-recognised as an important factor:
- (1) Dr Rowley, then a very junior doctor, was herself aware that symptoms could be masked by the antibiotics.
 - (2) Forfar & Arneil warn that "[p]revious antibiotic therapy may... mask the significance of the presenting illness."
 - (3) In a letter in 2007 responding to C's parents' complaint, the Defendant said "[w]hen children are given intramuscular antibiotics by their GP, diagnosis can be more difficult as they may mask clinical signs."
 - (4) The evidence of Dr Ninis, which I accept, is that it was not safe to assume that the antibiotics had not had a clinical effect, and that (in the light of the confounding effects of the antibiotics) it was never going to be possible reliably to reach a diagnosis based on observation alone.
109. Dr Thompson says that "[i]n the presence of signs of tonsillitis, and in the absence of signs of meningitis, most paediatricians would... conclude that the diagnosis of tonsillitis is the most likely, that other diagnoses are far less likely, and that tonsillitis needs treatment." No doubt that is a truism. It is not, however, this case. There were signs of meningitis that had been detected by Dr Dennison and which had not been accounted for by Dr Roe. The fact that Dr Roe did not separately detect them is nothing to the point, given the masking potential of the antibiotics.
110. Dr Thompson further said that "[n]o other tests were needed to exclude other possible diagnoses. In particular, no tests to investigate for meningitis or septicaemia were

indicated, once the diagnosis of tonsillitis was established.” However, the diagnosis of tonsillitis did not preclude the possibility of a secondary serious bacterial infection, particularly where there were symptoms and a history that were not obviously consistent with a diagnosis of tonsillitis and where a secondary bacterial infection was a real possibility. Given that clinical observation was compromised by the antibiotics, “other tests” were necessary in order to be able to exclude other possible diagnoses: I accept Dr Ninis’ evidence that this was the only safe way to proceed.

111. For all these reasons, Dr Roe was not able to exclude the real possibility that C was suffering from a serious bacterial infection. If he had excluded that possibility then he was wrong to do so – it was a conclusion that no responsible body of medical opinion could, in my judgment, support. Dr Thompson’s suggestion to the contrary is based on the erroneous premise that Dr Roe’s examination took place too soon after the administration of antibiotics for the symptoms to have been modified or masked. To the extent that a body of medical opinion would support the view that a serious bacterial infection could, in these circumstances, have been excluded then in my judgment that opinion does not withstand logical analysis.
112. In fairness to Dr Roe he did accept in cross-examination that he should perhaps have asked the SHO to note that there were other possible diagnoses (and, in particular, a serious bacterial infection). He also said “if there was one thing I might have done differently then it would have been more sensible to keep her in hospital for more observation. I am happy to say that I should have done that.” This candid concession was entirely appropriate, although I consider that it should go a little further – it was not just observation that was required but investigation and treatment.
113. It follows that C should have been treated on the basis that there were continuing grounds to suspect that she was suffering from a serious bacterial infection.
114. The balance of evidence strongly suggests that in such circumstances a lumbar puncture should be performed. This was Dr Ninis’ view. Dr Thompson agreed that signs of meningitis (and, in the context in which this was said, I took him to include signs of invasive bacterial infection) should lead to lumbar puncture. The textbooks also strongly suggest that a lumbar puncture should be performed. The balance of evidence also suggests that if a lumbar puncture had been performed then intravenous antibiotics should have been administered. However, even if they had not been administered immediately, it is common ground that if a lumbar puncture had been carried out then culture would have revealed growth of pneumococcus within 24 hours, which would then have required the use of intravenous antibiotics.
115. Although neither Dr Ninis nor Dr Thompson suggested that it would here have been appropriate not to undertake a lumbar puncture in the face of signs of serious bacterial infection, there is some evidence that before the NICE guidelines there was a difference in practice. Some doctors would not have called for a lumbar puncture because it would not make a difference to their clinical treatment – they would administer intravenous antibiotics in any event. It follows that, irrespective of the question of a lumbar puncture, intravenous antibiotics ought to have been administered by, at the very latest, 27 January.
116. Dr Thompson’s view that it was not necessary to administer intravenous antibiotics was predicated on his opinion, which I have rejected, that there were no signs of

bacterial infection. Once it is appreciated that there were signs of bacterial infection then not only did the textbooks mandate the use of intravenous antibiotics, the clear balance of risk pointed in that direction. There were potential disadvantages to their use if it turned out that they were unnecessary: they would commit C to staying in hospital rather than allowing her to be discharged home, they can have minor side-effects (commonly rash and diarrhoea) and inappropriate prescription is a major cause of antibiotic resistance. However, these potential disadvantages were limited. As against that, the potential disadvantages of not prescribing antibiotics if it turned out that C did have a serious bacterial infection were very significant, as the events of this case show. Faced with this balance of risk, Ms Gollop QC asked Dr Thompson in re-examination what the logic would be for not prescribing antibiotics in this type of case. His response, in effect, was “we just do not do that.” That is no answer at all.

117. Accordingly, assessed against the background of the textbooks and scientific literature of the time, and without reference to the guidance that was subsequently provided by NICE and by the Thames Valley & Wessex Screening Tool and by the UK Sepsis trust screening tool, I consider that the standard of medical care fell below that which was required.
118. I have separately considered whether the medical care could be justified by reference to those subsequent guidelines.
119. NICE: For the reasons given above, the findings of Dr Dennison could not be discounted. When those findings are taken into account, C had the “red” feature of “appears ill to a healthcare professional”. Dr Roe argued that all children referred to hospital by a GP appear ill to the GP, otherwise they would not be referred. It seems to me that this unjustifiably marginalises the “appears ill” test and its application to the present case. It is obvious that Dr Dennison was very worried about C and considered that (as he says in his statement) she “was very sick and needed urgent assessment to exclude serious disease.” It was very rare for Dr Dennison to administer antibiotics and send a child by ambulance to hospital. There is no suggestion that he is an outlier in this regard. NICE, after carrying out extensive research (which is explained in detail in the guideline), considered that this was a red flag. I am entirely satisfied that C’s case should have been treated as being within the high risk category.
120. There is arguably the additional red feature of “no response to social cues” as well as a number of amber features: “decreased activity”, “no smile”, “reduced urine output” and, possibly, capillary refill time of 3 seconds. As to the latter, Dr Roe argued that it was only the peripheral capillary refill time that was 3 seconds, the central refill time was less than that, and it is the central refill time which is the more important. Dr Ninis pointed out that the NICE guidelines refer to capillary refill time, without limiting this to the central capillary refill time. It is not necessary to resolve this wrinkle.
121. The NICE guidelines require that meningitis should be considered in a child with fever and decreased level of consciousness. That was this case.
122. NICE’s recommendations for further investigations are predicated on the fever not having an “apparent source”. I accept Dr Ninis’ evidence that, in context, “apparent” means both detectable as a source of infection, and readily capable of explaining the clinical features (and this is reinforced by NICE’s definition of “Fever without

(apparent) source (FWS)” – see paragraph 45 above). Of course, Dr Rowley and Dr Roe both identified a source of infection. This was not, however, a source that could readily explain C’s symptoms. I accept Dr Ninis’ evidence that if the NICE guidelines were applied to this case then it should have been treated as a case of fever without apparent source. It follows that under the NICE guideline further investigations would be required, including consideration of a lumbar puncture and immediate parenteral antibiotics (and, here, there was nothing to contraindicate a lumbar puncture and intravenous antibiotics).

123. Thames Valley & Wessex Screening Tool: Applying the sepsis screening tool (see paragraph 65 above) to the findings made by Dr Dennison, C had a high temperature and tachycardia. It was then necessary to assess whether one of the additional features identified in the tool was present. There was certainly altered mental state (floppiness, glazed eyes). It is also arguable that all three additional features were present (because of the 3 second peripheral capillary refill time, and the clinical concern regarding sepsis). Accordingly, under this toolkit, C should have been treated as a medical emergency and been given intravenous antibiotics (unless a senior clinician provided a reasoned decision for not doing so).
124. UK Sepsis Trust Screening Tool: Applying the UK sepsis Trust screening tool (see paragraph 66 above) to the findings made by Dr Dennison, all four of the criteria were present (only two were required) such that it should have been assumed that sepsis was present.

Dr Roe’s examination on 27 January

125. Ms Ewins criticises the comment that C was “better”. I do not think it is likely that C’s parents had told Dr Roe that C was better. It is more likely that this was Dr Roe’s word to encapsulate his interpretation of a broader discussion. It is consistent with C’s mother’s diary entry that C had “picked up” shortly before being seen by Dr Roe. Moreover, it is clear that the word was used in the relative, rather than absolute, sense. Clearly, C had not completely recovered: Dr Roe’s note records that she was still lethargic. But she was now drinking “a little”, and there was urine output (the wet nappies). I do not think that Dr Roe’s assessment that C appeared to be (perhaps marginally) better than the previous day is unjustified.
126. C’s parents say that Dr Roe reviewed her “from afar” and that he did not examine her throat. It is clear that they are right about the throat – the notes say as much. I do not think that this is a ground for criticism – neither Dr Ninis nor Dr Thompson say he should have examined the throat. He had done so the previous day (as had Dr Rowley) and there was no particular reason for a further examination given that C’s apparent condition had (perhaps marginally) improved.
127. I accept that Dr Roe (or possibly a more junior colleague on his behalf) did listen to C’s chest and measure her pulse and respiratory rate. In cross examination C’s mother fairly accepted that although her impression had been that the examination had been conducted “from afar” it was possible that Dr Roe had squatted down and put a stethoscope to C’s chest.
128. If Dr Roe had been entitled to rule out the possibility of a serious bacterial infection on 26 January then there is nothing about C’s presentation on 27 January that could

reasonably have caused him to have second thoughts. On that hypothesis, I do not consider that there was any separate or distinct breach of duty on 27 January. However, for the reasons I have given, I do conclude that there was a breach of duty on 26 January by failing to implement a course of intravenous antibiotics. It could not sensibly be suggested (and it is not suggested) that the examination on 27 January in any way broke the chain of causation.

Implications for paediatrics

129. The Defendant argues that if C's case succeeds it "would have wide ranging implications for the practice of paediatrics and the NHS [because it] would mean that every child assessed by a GP as floppy, lethargic, glazed and vacant and blue light ambulance referred to hospital would have to be admitted, treated intravenously and given a lumbar puncture even if they were alert on arrival." I do not agree. First, there is more to this case than that, including the high fever and the administration of intramuscular antibiotics that confounded clinical examination at hospital. Second, there is no evidence that it is commonplace for these events to occur, such that there would be "wide ranging implications": Dr Dennison had only done this a maximum of 10 times in 15 years. Third, the NICE guidelines (drawn up by a diverse guideline development group after thorough consideration of all of the evidence and assessment of the implications) themselves require that consideration be given to intravenous antibiotics and a lumbar puncture in these circumstances. Fourth, if paediatricians are not following the NICE guidelines then the implications for children justify a change of practice. Fifth, no evidence whatsoever has been provided to suggest that compliance with the NICE guidelines would have wide ranging (deleterious) implications for the practice of paediatrics.

Conclusions on liability

130. My impression is that Dr Roe is a highly competent, thoughtful, caring and (now) experienced consultant paediatrician. His diagnosis of tonsillitis was entirely reasonable based on what he saw when he examined C, and was consistent with the view that had been formed by Dr Rowley. Based on what he saw when he examined C, he had no reason to consider any other diagnosis. However, he fell into the trap laid by the intramuscular antibiotics: he did not sufficiently appreciate that the medication that C had been given may have been masking her symptoms, and that a truer picture of her condition was that portrayed by Dr Dennison. If, as he should have done, he had appreciated that then I have little doubt that intravenous antibiotics would have been administered by, at the very latest, 27 January (and, more likely, on 26 January).

Causation

131. It is agreed between the parties that C developed pneumococcal meningitis as a result of which she developed vasculitis, leading to an infected perforator infarction with adjacent oedema involving her left basal ganglia. Treatment with intravenous antibiotics on 26 or 27 January would have prevented the perforator infarction and the development of right hemiparetic cerebral palsy and cognitive and visuospatial difficulties. It follows that C has established that the Defendant is responsible for a breach of duty which resulted in the injuries and losses for which she claims.

Outcome

132. C has succeeded in proving that the Defendant is liable to her for the injuries and other loss and damage that she has sustained. I will set directions for the assessment of damages.