Meningitis (bacterial) and meningococcal disease: recognition, diagnosis and management

Consultation on draft guideline - Stakeholder comments table
01 September 2023 - 12 October 2023

Stakeholder	Document	Page No	Line No	Comments	Developer's response
Aneurin Bevan University Health Board - Antimicrobial Working Group	Guideline	015	008	As ceftriaxone displaces bilirubin from albumin, it is not recommended in prematurity, jaundice, hypoalbuminaemia or acidosis as may exacerbate hyperbilirubinemia. This is referenced in the hospital section on p24, p26 and p27 but not in the primary care section.	Thank you for your comment. The contraindications cited in section 1.6 are not likely to be relevant in this setting and so have not been repeated here
Aneurin Bevan University Health Board - Antimicrobial Working Group	Guideline	024	014	Would it be worth noting that the incidence of Listeria is very rare in patients over 30 days of age, so is it worth clarifying what would count as 'risk factors for Listeria monocytogenes' for age groups older than 30 days? Please see following articles for evidence to support this remark: - Empirical antibiotic cover for Listeria monocytogenes infection beyond the neonatal period: a time for change? Arch Dis Child May 2015 Vol 100 No 5; - Listeria infection in young infants: results from a national surveillance study in the UK and Ireland. Arch Dis Child: May 2021; 106: 1207 - 1210). On this basis we only recommend locally addition of amoxicillin for neonates.	Thank you for your comment. Identifying the risk factors for Listeria is outside the scope of this guideline.
Aneurin Bevan University Health Board - Antimicrobial Working Group	Guideline	032	004	We would advise that the dexamethasone was only used in patients aged over 3 months of age. Has there been new evidence to support its use in younger patients?	Thank you for your comment. The recommendation has been updated to state 'For people over 3 months….'. The committee did not want to completely rule out the use of dexamethasone in those under 3 months old. They were aware that a person just under 3 months may benefit from its use and they were not aware of any evidence that

Meningitis (bacterial) and meningococcal disease: recognition, diagnosis and management

Consultation on draft guideline - Stakeholder comments table
01 September 2023 - 12 October 2023

Stakeholder	Document	Page No	Line No	Comments	Developer's response
					supports or refutes the use of dexamethasone in children between 28 days and 3 months. Therefore they have also added a recommendation to get infection specialist advice on using dexamethasone in children between 28 days and 3 months old with strongly suspected or confirmed bacterial meningitis. A research recommendation has also been made for people under 3 months of age.
Aneurin Bevan University Health Board - Antimicrobial Working Group	Guideline	General	General	There are some welcome reductions in course lengths, in line with evidence.	Thank you for your comment and support for the recommendation.
Aneurin Bevan University Health Board - Antimicrobial Working Group	Comments form	Question	1	We do not envisage any challenges in implementing these recommendations.	Thank you for your comment.
Aneurin Bevan University Health Board - Antimicrobial Working Group	Comments form	Question	2	We do not expect significant cost implications in implementing these recommendations	Thank you for your comment.
Aneurin Bevan University Health Board - Antimicrobial Working Group	Comments form	Question	3	Splitting into age groups would be helpful, for ease of reference, but this could be achieved by clearer layout of a single guideline. Given our suggestion above with respect to amoxicillin and Listeria risk, we would suggest splitting into birth – 30 days; 1 month – 18 years; adults over 18 years.	Thank you for your comment. Following stakeholder feedback, recommendations about neonates have been removed from this guideline and included in the Neonatal Infection guideline instead so that all the guidance relevant to this population is in one place.

Meningitis (bacterial) and meningococcal disease: recognition, diagnosis and management

Consultation on draft guideline - Stakeholder comments table
01 September 2023 - 12 October 2023

Stakeholder	Document	Page No	Line No	Comments	Developer's response
Association of Paediatric Emergency Medicine	Guideline	005	007	Rec 1.1.2 – This sentence may be a bit clearer if it reads: "the red flag combination and the red flag symptoms in recommendations 1.1.3 and 1.1.5, and". The two have been separated out in all other mentions.	Thank you for your comment. The guideline has been restructured based on stakeholder comments into a section on when to suspect bacterial meningitis and a section on when to suspect meningococcal disease. Recommendation 1.1.2 has been amended to reflect this new structure such that the bullet point you commented on no longer exists.
Association of Paediatric Emergency Medicine	Guideline	005	013 - 015	Rec 1.1.3 – the red flag combination does seems to be specific to adults and young people / older children. Would it be sensible to specify babies and children-specific red flag symptoms in addition? Separating out the guideline into different age groups would also allow for more babies and children-specific red flag advice.	Thank you for your comment. The majority of the evidence behind these recommendations was from babies and children. However, all the evidence was for individual signs and symptoms so expert clinical consensus was used to define the 'red flag combination'. Therefore it is not possible to make separate recommendations for babies and children. The committee agreed that bacterial meningitis might present differently in babies and older children and included this in the recommendations and in notes in the tables of signs and symptoms. Following stakeholder feedback, recommendations about neonates have been removed from this guideline and included in the Neonatal Infection guideline instead so that all the guidance relevant to this population is in one place.
Association of Paediatric Emergency Medicine	Guideline	005	022 & 024	Rec 1.1.5 – we wandered if the "non-blanching rash" needs to be clarified, for example "petechial or purpuric" or a more detailed description as per the purpura description? There are many different types of non-blanching rash. An urticarial rash can also present as a rapidly progressive and/or spreading non-	Thank you for your comment. The committee agree and the wording in the recommendation has been updated to state 'non-blanching petechial or purpuric rash'.

Meningitis (bacterial) and meningococcal disease: recognition, diagnosis and management

Consultation on draft guideline - Stakeholder comments table
01 September 2023 - 12 October 2023

Stakeholder	Document	Page No	Line No	Comments	Developer's response
				blanching rash, however should not be confused with petechiae or purpura.	
Association of Paediatric Emergency Medicine	Guideline	007	Table 1	Non-blanching rash: Does the "non-blanching rash" need to be clarified, for example "petechial or purpuric"? There are many different types of non-blanching rash. An urticarial rash can also present as a rapidly progressive and/or spreading non-blanching rash, however should not be confused for petechiae or purpura.	Thank you for your comment. The committee agree and the wording has been updated to state 'non-blanching petechial or purpuric rash'.
Association of Paediatric Emergency Medicine	Guideline	007	Table 1	Non-blanching rash: we wander if this is required in the meningitis table? It is our understanding that petechiae and purpura are usually signs of meningococcal disease, rather than meningitis.	Thank you for your comment. There was some evidence to show a petechial rash was both moderately specific and moderately sensitive for a diagnosis of bacterial meningitis in an undefined age range. The committee thought that while a non-blanching rash is mainly associated with meningococcal disease it can also be a symptom or sign of bacterial meningitis.
Association of Paediatric Emergency Medicine	Guideline	007 - 008	Table 1	Neurological, headache: "Headache cannot be reported by babies and young children or by children and young people with cognitive impairment". Could also add in "learning difficulties or disabilities, or developmental disabilities" to cover children with communication issues.	Thank you for your comment. The text has been amended to clarify that those with communication difficulties may not be able to report a headache.
Association of Paediatric Emergency Medicine	Guideline	008	Table 2	Non-blanching rash: Does the "non-blanching rash" need to be clarified, for example "petechial or purpuric"? There are many different types of non-blanching rash. An urticarial rash can also present as a rapidly progressive and/or spreading non-blanching rash, however should not be confused for petechiae or purpura.	Thank you for your comment. The committee agree and the wording has been updated to state 'non-blanching petechial or purpuric rash'.
Association of Paediatric Emergency Medicine	Guideline	008	Table 2	Non-blanching rash: we wander if this is required in the meningitis table? It is our understanding that petechiae and purpura are usually signs of meningococcal disease, rather than meningitis.	Thank you for your comment. There was some evidence to show a petechial rash was both moderately specific and moderately sensitive for a diagnosis of bacterial meningitis in an undefined

Stakeholder	Document	Page No	Line No	Comments	Developer's response
					age range. The committee thought that while a non-blanching rash is mainly associated with meningococcal disease it can also be a symptom or sign of bacterial meningitis.
Association of Paediatric Emergency Medicine	Guideline	011	Table 3	Non-blanching rash: Does the "non-blanching rash" need to be clarified, for example "petechial or purpuric"? There are many different types of non-blanching rash. An urticarial rash can also present as a rapidly progressive and/or spreading non-blanching rash, however should not be confused for petechiae or purpura.	Thank you for your comment. The committee agree and the wording has been updated to state 'non-blanching petechial or purpuric rash'.
Association of Paediatric Emergency Medicine	Guideline	013	016	Rec 1.1.16 – "Consider a safety netting arrangement" feels a little vague. Could this be specified further as per other NICE guidance e.g. Fever in under 5s: NG143 recommendations 1.5.25 and 1.5.26. Particularly in regards to use of written safety-netting advice which is routinely used in emergency departments.	Thank you for your comment. The committee thought it was difficult to be prescriptive here because the guideline did not include a review question on safety netting. The committee included a general recommendation because there were aware that bacterial meningitis and meningococcal disease are difficult to diagnose or distinguish from other conditions. A cross reference has been added to the patient information recommendation advising people on what to look out for if they are sent home with an unconfirmed diagnosis.
Association of Paediatric Emergency Medicine	Guideline	015	006	Rec 1.2.3 – does "a clinically significant delay in transfer to hospital" need quantifying e.g. 4 hours until assessment and treatment in hospital.	Thank you for your comment. It is not possible to define a clinically significant delay in transfer to hospital as this would be different for different individuals.
Association of Paediatric Emergency Medicine	Guideline	017	008	Rec 1.4.1 – we felt that where lumbar puncture is mentioned, there should be a caveat of "if safe to perform and none of the features in recommendations 1.4.11 and 1.4.12 are present"	Thank you for your comment. Where performing a lumbar puncture is mentioned in recommendations it has been clarified that this should only be when safe to do so. A cross reference to the recommendations on lumbar puncture is already

Stakeholder	Document	Page No	Line No	Comments	Developer's response
					included in the text so specific recommendations have not been cited.
Association of Paediatric Emergency Medicine	Guideline	019	005	Rec 1.4.9 - we felt that where lumbar puncture is mentioned, there should be a caveat of "if safe to perform and none of the features in recommendations 1.4.11 and 1.4.12 are present"	Thank you for your comment. Where performing a lumbar puncture is mentioned in recommendations it has been clarified that this should only be when safe to do so. A cross reference to the recommendations on lumbar puncture is already included in the text so specific recommendations have not been cited.
Association of Paediatric Emergency Medicine	Guideline	019	017	Rec 1.4.10 - we felt that where lumbar puncture is mentioned, there should be a caveat of "if safe to perform and none of the features in recommendations 1.4.11 and 1.4.12 are present"	Thank you for your comment. Where performing a lumbar puncture is mentioned in recommendations it has been clarified that this should only be when safe to do so. A cross reference to the recommendations on lumbar puncture is already included in the text so specific recommendations have not been cited. However recommendation 1.4.10 has been deleted as it was repeating the previous recommendation.
Association of Paediatric Emergency Medicine	Guideline	020	007	Rec 1.4.13 - we felt that where lumbar puncture is mentioned, there should be a caveat of "if safe to perform and none of the features in recommendations 1.4.11 and 1.4.12 are present"	Thank you for your comment. Where performing a lumbar puncture is mentioned in recommendations it has been clarified that this should only be when safe to do so. A cross reference to the recommendations on lumbar puncture is already included in the text so specific recommendations have not been cited
Association of Paediatric Emergency Medicine	Guideline	031	019	1.8.5 – where the recommendation refers to "critical care", we wish to highlight that for babies and children this needs to be as advised by a senior clinician from a level 1 paediatric Critical Care facility	Thank you for your comment. This bullet point related to critical care in this recommendation has been updated to state 'get urgent advice from

Meningitis (bacterial) and meningococcal disease: recognition, diagnosis and management

Consultation on draft guideline - Stakeholder comments table
01 September 2023 - 12 October 2023

Stakeholder	Document	Page No	Line No	Comments	Developer's response
					critical care', in babies in children 'get urgent advice from paediatric critical care services'.
Association of Paediatric Emergency Medicine	Guideline	044	001	The definition of a 'senior clinical decision maker' for people under 18 is a paediatric or emergency care qualified doctor of grade ST4 or above or equivalent. We wondered if the committee has considered that in many hospitals doctors of grade ST3 will be the on site senior clinical decision maker. Does there need to be mention of a contingency in this situation?	Thank you for your comment. The definition of senior clinical decision maker for people under 18 has been kept as ST4 to ensure consistency with what has been recommended in the Sepsis guideline. This definition has also been amended to clarify that the clinician needs to have core competencies in the care of acutely ill children.
Association of Paediatric Emergency Medicine	Comments form	Question	1	1. Would it be challenging to implement of any of the draft recommendations? Please say why and for whom. Please include any suggestions that could help users overcome these challenges (for example, existing practical resources or national initiatives. We don't have any comments for you	Thank you for your comment.
Association of Paediatric Emergency Medicine	Comments form	Question	2	2. Would implementation of any of the draft recommendations have significant cost implications? We don't have any comments for you	Thank you for your comment.
Association of Paediatric Emergency Medicine	Comments form	Question	3	3. Given the expansion of the population covered by this guideline NICE is considering splitting the final published guideline by age group. This would result in some duplication of recommendations, but it is thought that it could improve the usability of the guideline. Do you agree with this approach and if so, can you suggest appropriate age groups? We agree with splitting the guideline into age groups. This would, in our opinion, make it simpler and would enable key	Thank you for your comment. Following stakeholder feedback, recommendations about neonates have been removed from this guideline and included in the Neonatal Infection guideline instead so that all the guidance relevant to this population is in one place.

Meningitis (bacterial) and meningococcal disease: recognition, diagnosis and management

Consultation on draft guideline - Stakeholder comments table
01 September 2023 - 12 October 2023

Stakeholder	Document	Page No	Line No	Comments	Developer's response
				differences in the paediatric population to be highlighted. Most paediatric facilities will accept young people under 16 years, with those 16 years and over deemed adults. However, NICE sepsis guidance refers to age groups of 1 month – 17 years and 18 and over which may be more simple.	
Biomerieux	Guideline	014	005	Alternative causes of disease should include viruses. This is also captured in the evidence reviewed as part of this section (Evidence Review A3 and B3).	Thank you for your comment. 'Non-bacterial meningitis' has been added as an example to the recommendation.
Biomerieux	Guideline	020	011	Despite significant implications for patient outcomes and healthcare efficiency, time to results has been completely overlooked. Evidence Review B3 states the importance of a timely diagnosis in the introduction.	Thank you for your comment. A recommendation has been added that results of CSF white blood cell counts, total protein and glucose concentrations should be made available within 4 hours.
Biomerieux	Guideline	032	006	Evidence has shown that dexamethasone use in cases of meningitis caused by Haemophilus influenzae has been linked with a reduction in risk of hearing loss, yet this has not been included in the Guideline. We acknowledge that Evidence Review G4 has considered publications supporting dexamethasone use in cases of bacterial meningitis, and strongly urge the inclusion of this information in the Guideline. Rapid diagnosis of Haemophilus influenzae means that administration of dexamethasone can begin, and help reduce the risk of hearing loss sooner.	Thank you for your comment. The recommendation has been amended to include Haemophilus influenzae type b.
Biomerieux	Guideline	General	General	In meningitis, identifying a viral pathogen vs. bacterial is essential in effective antimicrobial stewardship. This Guidance	Thank you for your comment. A cross reference has been added to the NICE guidance on anti-microbial

Stakeholder	Document	Page No	Line No	Comments	Developer's response
				has not captured AMS, despite it being a key priority for the NHS, NICE, and beyond. There are currently 35 published pieces of Guidance pertaining to the AMS topic on the NICE website. See below for evidence supporting rapid comprehensive diagnosis leading to a reduction in antibiotic usage in suspected meningitis: • Péan de Ponfilly G, Chauvin A, Salmona M, Benmansour H, Bercot B, Camelena F, Courbin V, Eyer X, Lecorche E, Mougari F, Munier AL, Revue E, LeGoff J, Cambau E, Jacquier H. Impact of a 24/7 multiplex-PCR on the management of patients with confirmed viral meningitis. J Infect. 2021 Dec;83(6):650-655. doi: 10.1016/j.jinf.2021.08.050. Epub 2021 Oct 6. PMID: 34626699. • Cailleaux M, Pilmis B, Mizrahi A, Lourtet-Hascoet J, Nguyen Van JC, Alix L, Couzigou C, Vidal B, Tattevin P, Le Monnier A. Impact of a multiplex PCR assay (FilmArray®) on the management of patients with suspected central nervous system infections. Eur J Clin Microbiol Infect Dis. 2020 Feb;39(2):293-297. doi: 10.1007/s10096-019-03724-7. Epub 2019 Nov 12. PMID: 31720944.	stewardship in light of the issue you raise. The citations you mention were considered by the committee and are the rationale for the emphasis in the recommendations on performing a lumbar puncture as soon as possible (and ideally before the administration of antibiotics).

Meningitis (bacterial) and meningococcal disease: recognition, diagnosis and management

Consultation on draft guideline - Stakeholder comments table
01 September 2023 - 12 October 2023

Stakeholder	Document	Page No	Line No	Comments	Developer's response
Biomerieux	Guideline	General	General	Throughout this guideline, PCR testing is referred to, however we feel that NICE have failed to discern between a single PCR test, mini-plex, and multiplex. Recently published German Guidelines on Community-Acquired Acute Bacterial Meningitis in Adults (Klein, Matthias et al. "German guidelines on community-acquired acute bacterial meningitis in adults." Neurological research and practice vol. 5,1 44. 31 Aug. 2023, doi:10.1186/s42466-023-00264-6) specifically recommend multiplex PCR in the diagnosis of meningococcal disease: • *Recommendation 5 (strong consensus) To diagnose the pathogen in acute bacterial meningitis, we recommend to carry out a Gram stain and an attempt to identify the pathogen in culture from the cerebrospinal fluid. We suggest that multiplex-PCR (meningitis panel) is also used. The multiplex-PCR does not replace the other standard microbiological diagnostics (Gram staining and attempt to identify the pathogen in culture and determination of antibiotic susceptibility)* The authors also highlight that *'Multiplex PCR meningitis panels, which detect the most common viral and bacterial pathogens of meningitis and encephalitis, show high specificities, especially for the detection of bacterial pathogens (in a meta-analysis for Streptococcus pneumoniae, Neisseria meningitidis, Haemophilus influenzae, Escherichia coli and Listeria monocytogenes sensitivity was 89.5% and specificity 97.4%). (Trujilo et al. 2023)'*	Thank you for your comment. The guideline did not assess evidence separately by different types of PCR test and therefore is not able to make recommendations about this.

Meningitis (bacterial) and meningococcal disease: recognition, diagnosis and management

Consultation on draft guideline - Stakeholder comments table
01 September 2023 - 12 October 2023

Stakeholder	Document	Page No	Line No	Comments	Developer's response
British Association of General Paediatrics	Guideline	General	General	NG 10149 your own evidence contradicts the use of steroids in any type of meningitis primum non nocere	Thank you for your comment. The evidence reviews on the effectiveness of corticosteroids (G4) found evidence of a benefit for the use of corticosteroids in terms of reduced mortality and hearing impairment in adults and reduced hearing impairment in babies and children.
British Association of Paediatricians in Audiology	Guideline	037	001	RE 1.12.8 This statement is a little ambiguous. Does 'well enough for testing' mean testing of hearing or assessment as a candidate for a cochlear implant? It might be clearer to write : If hearing assessment (as in 1.12.7) indicates a severe or profound deafness offer an urgent assessment for cochlear implantation.	Thank you for your comment. 'Well enough for testing' has been removed from the recommendation. It is covered in the preceding recommendation already.
British Infection Association	Guideline	005	007	Reference the table when referring to red flag symptoms as there are different red flag symptoms depending on what clinical phenotype you are referring to.	Thank you for your comment. The guideline has been updated so that recommendations and the tables specific to bacterial meningitis appear together in one section named 'When to suspect bacterial meningitis. There is a similar section on 'When to suspect meningococcal disease'. The committee thought that it was important to highlight both the recommendations and tables when cross referring therefore the cross reference to the whole section has been retained.
British Infection Association	Guideline	006	001	check all over the body (including nappy areas), and check for 1 petechiae in the conjunctivae This should be expanded to specifically state the buttocks and underwear lines in adults- as it is not just children who need a full body exposure to detect a rash. It is also worth mention of alternative meningitis rashes to note such as HSV or VZV	Thank you for your comment. Checking buttocks and underwear lines would be covered by the wording 'check all over the body. The committee thought that highlighting the nappy area was important because it will need to be taken off to check. HSV or VZV rashes have not been added to

Stakeholder	Document	Page No	Line No	Comments	Developer's response
				rashes during inspection. A link to picture of the rash on different skin colours could be helpful	the recommendation because they are not a symptom or sign for meningococcal disease.
British Infection Association	Guideline	008	Table 2	Headache and neck stiffness are harder to identify in adults with cognitive impairment. This should also state adults with communication difficulties. Altered level of consciousness or cognition may be missed in young adults and older adults. This could say something like- 'it may be helpful to ask a relative/carer/friend if the person seems their usual self" The hyperlink on older adults does not take me to the definition simply- it may be better to define this as >65 years at the beginning of the document. I am not sure about 'ill appearance'- is that clinically validated?	Thank you for your comment. The notes column for the entries related to headache and neck stiffness in table 2 have been updated to include adults with communication difficulties. A bullet point has been added to the earlier recommendation that advises using family member and carer reports of symptoms when completing an assessment of signs, symptoms and risk factors. The hyperlink has been updated so it takes you to the right place. The age cut-offs are included in the section on 'Terms used in this guideline' so that it is clear what cut-offs the committee has chosen to use and so that all age groups can be viewed together. The committee decided that the term 'Ill appearance' would help healthcare professionals identify people at risk of bacterial meningitis or meningococcal disease.
British Infection Association	Guideline	011	004	Suggest reference table after referring to Red Flag otherwise you could be confused about the Red flags that have been discussed before.	Thank you for your comment. Changes have been made to the structure of section 1.1 so that the potential confusion you cite should no longer happen
British Infection Association	Guideline	015	004	Given the evidence review did not show any benefit of giving pre-hospital antibiotics this recommendation risks massive overuse of antibiotics given the non-specific nature of features associated with suspecting bacterial meningitis.	Thank you for your comment. The recommendations in section 1.2 have been amended to make it clearer that the priority when someone is suspected of having bacterial meningitis or meningococcal disease is to transfer them to hospital as an emergency. Whilst the evidence reviewed did not suggest a benefit of pre-

Stakeholder	Document	Page No	Line No	Comments	Developer's response
					hospital antibiotics, the rapid progression and seriousness of meningococcal disease prompted the committee to recommend pre-hospital antibiotics for those people where this is strongly suspected. Pre-hospital antibiotics have only been recommended for those with strongly suspected bacterial meningitis when it is likely to take a significant time to transfer the person to hospital. Given these caveats the committee do not think this will result in overuse of antibiotics.
British Infection Association	Guideline	016	016	direct them to sources of online information. It would be helpful to provide links	Thank you for your comment. When the guideline is published, there will an 'information for the public' tab on the website which will contain relevant links.
British Infection Association	Guideline	017	008	blood tests and lumbar puncture are performed before starting antibiotics, This is not realistic if you wish to save lives in a UK NHS setting. Blood cultures then start antibiotics is most practical. Lumbar puncture later can include molecular tests so that the treatment with antibiotics does not influence results.	Thank you for your comment. Lumbar puncture is needed to provide antibiotic sensitivities to guide treatment. Molecular tests are not able to provide these.
British Infection Association	Guideline	017	012	Needs to be clearer that these things need to be taken in combination to come to the diagnosis e.g. 'A diagnosis of meningitis should be made using a combination of blood tests, LP results and clinical features. No one of these should be relied on alone to make or exclude a diagnosis'.	Thank you for your comment. The recommendation uses the word 'and' after each component which indicates they would be done in combination
British Infection Association	Guideline	017	023	cerebrospinal fluid leak I find unless you specifically ask 'have you had salty tasting solution coming from your nose' nobody is aware they have this.	Thank you for your comment and providing this information. Asking about the presence of these risk factors would be necessary to implement these recommendations and therefore committee did not think it was necessary to specify this.

Meningitis (bacterial) and meningococcal disease: recognition, diagnosis and management

Consultation on draft guideline - Stakeholder comments table
01 September 2023 - 12 October 2023

Stakeholder	Document	Page No	Line No	Comments	Developer's response
British Infection Association	Guideline	017 - 022	017	For people with suspected bacterial meningitis, perform a bacterial throat swab for meningococcal culture, preferably before starting antibiotics. Reword to state- DO Not delay antibiotics to take a bacterial throat swab.	Thank you for your comment. The purpose of this recommendation is to highlight that a bacterial throat swab for meningococcal culture should be taken. Recommendations elsewhere in the guideline (sections 1.4 and 1.6) highlight the importance of giving antibiotics within 1 hour of arrival at hospital).
British Infection Association	Guideline	018	006	CRP/PCT are often routinely done but as is acknowledged in this guidance normal values to not rule out infection therefore it is not clear why they are included as recommended tests	Thank you for your comment. The evidence showed that, overall, procalcitonin (PCT) was very sensitive and very specific for diagnosing bacterial meningitis in babies, children, and adults. C-reactive protein (CRP) was largely both moderately to highly sensitive and specific for a diagnosis of bacterial meningitis in babies, children, and adults. The committee discussed the higher costs associated with PCT and agreed that the difference in diagnostic accuracy was not sufficient to warrant recommending PCT over CRP. The committee therefore recommended that CRP, or PCT if CRP is not available, should be included in the blood tests performed for people with suspected bacterial meningitis
British Infection Association	Guideline	018	009	Please clarify that the PCR is for meningococcal and pneumococcal PCR	Thank you for your comment. This change has been made
British Infection Association	Guideline	018	010	A serum save is not an essential test and adds to the burden of recommendations at this stage. This could be recommended at some point during the admission	Thank you for your comment. This recommendation has been deleted.
British Infection Association	Guideline	018 - 022	009	whole-blood diagnostic polymerase chain reaction (PCR).	Thank you for your comment. Meningococcal and pneumococcal PCR tests have been specified in

Meningitis (bacterial) and meningococcal disease: recognition, diagnosis and management

Consultation on draft guideline - Stakeholder comments table
01 September 2023 - 12 October 2023

Stakeholder	Document	Page No	Line No	Comments	Developer's response
				Which PCR test? Meningococccal on EDTA? If so, state that- but again this could delay treatment- we can always rescue an EDTA later or people could be told to save an EDTA and send to micro. Serum however may not need saving and can perhaps be obtained later? Again minimise investigations needed pre-antibiotics in a pressured environment. But wouldn't an HIV test be needed routinely and should be sent and done (other tests can later be added)?	the recommendation as these are the only 2 PCR tests currently available for blood. The recommendation about serum save has been deleted. An HIV test for adults has been added to the recommendation.
British Infection Association	Guideline	019	005	1.4.9 Perform the lumbar puncture before starting antibiotics, unless it will 5 cause a clinically significant delay to starting antibiotics. This is not a realistic wording in an NHS environment- people often believe things 'wont' cause a significant delay' but then it does. Give antibiotics. Do not delay. Do LP as soon as possible. If LP is possible to complete within 30 minutes for example (give a time frame and ensure people time it- if LP not yet done give antibiotics)	Thank you for your comment. The committee did not recommend a specific timeframe for performing lumbar puncture in case this was interpreted as a hard cutoff. The key timeframe is to give antibiotics within 1 hour of arrival in hospital.
British Infection Association	Guideline	019	006	Does this need to be clearer what a 'significant delay in antibiotics' is i.e. do you mean if it will mean antibiotics will be delayed by more than 1 hour – if so that should be clear.	Thank you for your comment. The committee did not recommend a specific timeframe for performing lumbar puncture in case this was interpreted as a hard cutoff. The key timeframe is to give antibiotics within 1 hour of arrival in hospital.
British Infection Association	Guideline	019	017	Define 'urgently'. Not sure there is a need for this recommendation in addition to the one before.	Thank you for your comment. This recommendation has been deleted as suggested.
British Infection Association	Guideline	020	004	1.4.12 Do not perform lumbar puncture if there is: 4 • extensive or rapidly spreading purpura 5 • infection at the lumbar puncture site.	Thank you for your comment. Rash has not been added as a reason not to perform a lumbar puncture as this is a non-specific symptom. Rash as an indicator of infection is already covered by

Meningitis (bacterial) and meningococcal disease: recognition, diagnosis and management

Consultation on draft guideline - Stakeholder comments table
01 September 2023 - 12 October 2023

Stakeholder	Document	Page No	Line No	Comments	Developer's response
				Do not perform an LP if there is RASH at the LP site? No mention of measuring CSF pressure in this section- state 'measure CSF pressure where possible- document what the reading is and if not done document that it was not performed'	the recommendations. The committee noted that measuring CSF pressure would be good practice. However since the guideline has not made any recommendations about what to do once the pressure has been measured that are specific to bacterial meningitis, they decided not to add this as a recommendation.
British Infection Association	Guideline	021	002	Define 'relevant pathogens'. Are you saying we should be doing a species specific PCR for Listeria, E.coli and GBS in neonates as well as meningo and pneumo in children and adults? Listeria in >65s/immunocompromised. Most places will have access to pneumo/meningo PCR. I am not sure about the others unless you are recommending everywhere has access to something like the Biofire.	Thank you for your comment. The committee were aware that this is a rapidly changing field and therefore did not specify certain pathogens in the recommendation to prevent it becoming out of date quickly. In practice the decision about which pathogens to investigate for will be guided by local infection specialists.
British Infection Association	Guideline	021	012	Suggest give relative reference values for age appropriate CSF values.	Thank you for your comment. This information is easily accessible and commonly known about. As such it has not been included in the recommendation.
British Infection Association	Guideline	022	023	Clarifty PCR for meningococcal	Thank you for your comment. The recommendation has been amended to clarify that PCR would include meningococcal and pneumococcal because at this point meningococcal disease is only suspected so both would be needed for a differential diagnosis.
British Infection Association	Guideline	023	014	No mention of steroids til p32! Consider pneumococcal meningitis? And obtain infection specialist advice for all patients- after all how will you know what someone is colonised with on many occasions without communicating with such	Thank you for your comment. The section on steroids has been moved to after the sections on antibiotic provision. Recommendation 1.6.4 has been broadened so that infection specialist advice should be sought for all cases of bacterial

Stakeholder	Document	Page No	Line No	Comments	Developer's response
				specialists. Taking a travel history and sexual history is also very important and should be highlighted.	meningitis. Recommendations have already been made about doing HIV tests (1.10.1 and 1.10.2) so the committee have not recommended taking a sexual history. Obtaining a travel history is already implied by recommendation 1.6.4.
British Infection Association	Guideline	024	014	Please list risk factors for listeria clearly in the document.	Thank you for your comment. The risk factors for Listeria were not reviewed by this guideline update and therefore the committee were not able to make recommendations in this area.
British Infection Association	Guideline	024	016	Do not routinely give intravenous aciclovir unless herpes simplex 16 encephalitis is strongly suspected. Worth stating- look for oral and genital ulcers (somewhere in the document).	Thank you for your comment. Making recommendations about the presentation of herpes simplex encephalitis is outside the scope of this guideline.
British Infection Association	Guideline	025	006	In order to support antimicrobial stewardship and reduce cephalosporin use there should be an option for de-escalating to benzylpenicillin if the isolate is sensitive. The quoted evidence review compared duration of antibiotics not actual agent.	Thank you for your comment. A health economic analysis conducted by the 2010 guideline, showed that there are practical and cost benefits to giving ceftriaxone (compared to benzylpenicillin), as it only needs to be given once a day. Since the 2010 guideline the cost of ceftriaxone has decreased (from £10.17 for a 1g vial in 2009 to £9.58 in 2024 - https://www.drugtariff.nhsbsa.nhs.uk/#/00851044-DD/DD00850736/Part%20VIIIA%20products%20C) and the cost of benzylpenicillin has increased (from £0.46 for a 600mg vial in 2009 to £2.45 in 2024 - https://www.drugtariff.nhsbsa.nhs.uk/#/00851044-DD/DD00850636/Part%20VIIIA%20products%20B) . Lower staffing costs from once daily administration drove the economic case for ceftriaxone in the 2010

Stakeholder	Document	Page No	Line No	Comments	Developer's response
					guideline and that case has been strengthened by the fact that the acquisition costs of ceftriaxone have fallen relative to benzylpenicillin since 2010. Consequently, benzylpenicillin was not recommended. A link to the NICE guidance on anti-microbial stewardship has been added to the guideline.
British Infection Association	Guideline	026	019	In order to support antimicrobial stewardship and reduce cephalosporin use there should be an option for de-escalating to benzylpenicillin if the isolate is sensitive.	Thank you for your comment. A health economic analysis conducted by the 2010 guideline, showed that there are practical and cost benefits to giving ceftriaxone (compared to benzylpenicillin), as it only needs to be given once a day. Since the 2010 guideline the cost of ceftriaxone has decreased (from £10.17 for a 1g vial in 2009 to £9.58 in 2024 - https://www.drugtariff.nhsbsa.nhs.uk/#/00851044-DD/DD00850736/Part%20VIIIA%20products%20C) and the cost of benzylpenicillin has increased (from £0.46 for a 600mg vial in 2009 to £2.45 in 2024 - https://www.drugtariff.nhsbsa.nhs.uk/#/00851044-DD/DD00850636/Part%20VIIIA%20products%20B) . Lower staffing costs from once daily administration drove the economic case for ceftriaxone in the 2010 guideline and that case has been strengthened by the fact that the acquisition costs of ceftriaxone have fallen relative to benzylpenicillin since 2010. Consequently, benzylpenicillin was not recommended. A link to the NICE guidance on anti-microbial stewardship has been added to the guideline.

Meningitis (bacterial) and meningococcal disease: recognition, diagnosis and management

Consultation on draft guideline - Stakeholder comments table
01 September 2023 - 12 October 2023

Stakeholder	Document	Page No	Line No	Comments	Developer's response
British Infection Association	Guideline	026	026	1.6.13 For meningitis caused by gram-negative bacteria: 26 Gram-negative bacteria • give ceftriaxone Considerable gram negative Resistance occurs to this. Worth a second agent.	Thank you for your comment. Meropenem has been added as an option after discussion with an infection specialist.
British Infection Association	Guideline	026	027	What if the gram negative is an ESBL? Surely definitive treatment should be according to sensitivities and examples of abx that cross the BBB should be given.	Thank you for your comment. Meropenem has been added as an option after discussion with an infection specialist.
British Infection Association	Guideline	026 - 027	General	The guideline should recommend narrowing antibiotic spectrum if and once sensitivities are available. It is acknowledged that particularly in paediatrics the logistic challenges and staff shortages	Thank you for your comment. A health economic analysis conducted by the 2010 guideline, showed that there are practical and cost benefits to giving ceftriaxone (compared to benzylpenicillin), as it only needs to be given once a day. Since the 2010 guideline the cost of ceftriaxone has decreased (from £10.17 for a 1g vial in 2009 to £9.58 in 2024 - https://www.drugtariff.nhsbsa.nhs.uk/#/00851044-DD/DD00850736/Part%20VIIIA%20products%20C) and the cost of benzylpenicillin has increased (from £0.46 for a 600mg vial in 2009 to £2.45 in 2024 - https://www.drugtariff.nhsbsa.nhs.uk/#/00851044-DD/DD00850636/Part%20VIIIA%20products%20B) . Lower staffing costs from once daily administration drove the economic case for ceftriaxone in the 2010 guideline and that case has been strengthened by the fact that the acquisition costs of ceftriaxone have fallen relative to benzylpenicillin since 2010. Consequently, benzylpenicillin was not recommended. A link to the NICE guidance on anti-

Stakeholder	Document	Page No	Line No	Comments	Developer's response
					microbial stewardship has been added to the guideline.
British Infection Association	Guideline	027	009	It would be nice to give a definitive recommendation on the use of adjunctive gentamicin or co-trimoxazole rather than just deferring it to the local infection specialist.	Thank you for your comment. Gentamicin has been removed from the recommendation because of its toxicity in adults. Whilst there is some evidence of benefit from the use of adjunctive co-trimoxazole this is not clear cut. Consequently the committee were of the view that advice from an infection specialist was needed in order to make the right decision for the individual person.
British Infection Association	Guideline	027	015	In order to support antimicrobial stewardship and reduce cephalosporin use there should be an option for de-escalating to benzylpenicillin if the isolate is sensitive.	Thank you for your comment. A health economic analysis conducted by the 2010 guideline, showed that there are practical and cost benefits to giving ceftriaxone (compared to benzylpenicillin), as it only needs to be given once a day. Since the 2010 guideline the cost of ceftriaxone has decreased (from £10.17 for a 1g vial in 2009 to £9.58 in 2024 - https://www.drugtariff.nhsbsa.nhs.uk/#/00851044-DD/DD00850736/Part%20VIIIA%20products%20C) and the cost of benzylpenicillin has increased (from £0.46 for a 600mg vial in 2009 to £2.45 in 2024 - https://www.drugtariff.nhsbsa.nhs.uk/#/00851044-DD/DD00850636/Part%20VIIIA%20products%20B) . Lower staffing costs from once daily administration drove the economic case for ceftriaxone in the 2010 guideline and that case has been strengthened by the fact that the acquisition costs of ceftriaxone have fallen relative to benzylpenicillin since 2010. Consequently, benzylpenicillin was not

Stakeholder	Document	Page No	Line No	Comments	Developer's response
					recommended. A link to the NICE guidance on anti-microbial stewardship has been added to the guideline.
British Infection Association	Guideline	027	021 - 033	TB meningitis was quoted as being out of scope – there should not be any recommendations.	Thank you for your comment. This is a cross reference to other NICE guidance, not a recommendation.
British Infection Association	Guideline	028	008	Would meropenem not be considered more practical if penicillin allergy (non-anaphylaxis) and listeria risk (>65 or MAB)	Thank you for your comment. The use of meropenem is restricted, in that it can only be given after input from an infection specialist. The committee have not included it in the recommendation to avoid any confusion that it would be appropriate to use meropenem without this specialist advice. The 2nd bullet of the recommendation covers getting infection specialist advice, so if they deemed the use of meropenem to be appropriate it would still be possible.
British Infection Association	Guideline	028	010	Clarify that this applies to empirical treatment as well, not clear.	Thank you for your comment. The text has been changed to clarify that it also applies to empirical treatment.
British Infection Association	Guideline	029	007	Clarify that this applies to empirical treatment as well, not clear.	Thank you for your comment. The text has been changed to clarify that it also applies to empirical treatment.
British Infection Association	Guideline	030	002	In order to support antimicrobial stewardship and reduce cephalosporin use there should be an option for de-escalating to benzylpenicillin if the isolate is sensitive.	Thank you for your comment. A health economic analysis conducted by the 2010 guideline, showed that there are practical and cost benefits to giving ceftriaxone (compared to benzylpenicillin), as it only needs to be given once a day. Since the 2010 guideline the cost of ceftriaxone has decreased (from £10.17 for a 1g vial in 2009 to £9.58 in 2024 -

Meningitis (bacterial) and meningococcal disease: recognition, diagnosis and management

Consultation on draft guideline - Stakeholder comments table
01 September 2023 - 12 October 2023

Stakeholder	Document	Page No	Line No	Comments	Developer's response
					https://www.drugtariff.nhsbsa.nhs.uk/#/00851044-DD/DD00850736/Part%20VIIIA%20products%20C) and the cost of benzylpenicillin has increased (from £0.46 for a 600mg vial in 2009 to £2.45 in 2024 - https://www.drugtariff.nhsbsa.nhs.uk/#/00851044-DD/DD00850636/Part%20VIIIA%20products%20B) . Lower staffing costs from once daily administration drove the economic case for ceftriaxone in the 2010 guideline and that case has been strengthened by the fact that the acquisition costs of ceftriaxone have fallen relative to benzylpenicillin since 2010. Consequently, benzylpenicillin was not recommended. A link to the NICE guidance on anti-microbial stewardship has been added to the guideline.
British Infection Association	Guideline	032	004	The hyperlink for 'Strongly suspected' links to the wrong bit.	Thank you for your comment. This has been corrected.
British Infection Association	Guideline	033	20	1.10.5 - This applies to all- not just babies/young	Thank you for your comment. Recommendation 1.10.5 is already aimed at babies, children, young people and adults.
British Infection Association	Guideline	035	009 - 013	1.11.13/14 - The use of psychology is a great aim but is NHS funding available for this?	Thank you for your comment. The committee acknowledged that practice with respect to referral for psychological interventions is varied in the NHS but is something they believe should be considered for those in need of specialist psychological support. The committee believed that the population for whom this recommendation would apply was relatively small and therefore they did not anticipate a significant resource impact to the NHS,

Meningitis (bacterial) and meningococcal disease: recognition, diagnosis and management

Consultation on draft guideline - Stakeholder comments table
01 September 2023 - 12 October 2023

Stakeholder	Document	Page No	Line No	Comments	Developer's response
					despite recognising that psychological interventions can be expensive at the individual level.
British Infection Association	Guideline	036	026	1.12.7 - Do you want all referred to audiometry or just those with hearing problems? Not clear in the text	Thank you for your comment. The recommendation has been updated to 'Offer an audiological assessment'. The recommendation applies to everyone. In general, the NICE style is that recommendations apply to everyone unless otherwise stated.
British Infection Association	Guideline	036	026	Is this recommendation for all patients? Not clear.	Thank you for your comment. The recommendation has been updated to 'Offer an audiological assessment'. The recommendation applies to everyone. In general, the NICE style is that recommendations apply to everyone unless otherwise stated.
British Infection Association	Guideline	038	005	1.12.13 - Again a great aim but how are acute discharging doctors to feasibly know when driving may resume. It's not a practical suggestion in an NHS discharge environment. If follow up is possible and NHS costed this would be where to discuss such aspects. For example at 2 weeks- all could be advised no driving/work etc. for 2 weeks then a review could occur.	Thank you for your comment. This is covered by DVLA advice on assessing fitness to drive and a cross reference to this has been added to the recommendation.
British Infection Association	Guideline	043	004	Consider changing definition of adult to 16 plus to fit with where patients are admitted.	The committee were aware that there is an overlap between young people and adults and a definitive age cut off is not always perfect. They picked an age cut-off of 18 and over as this matches the BNF for children age cut-offs and medications are a key part of this guideline.
British Infection Association	Guideline	044	001	A 'senior clinical decision maker' for people under 18 is a paediatric or emergency 2 care qualified doctor of grade ST4 or above or equivalent.	Thank you for your comment. The definition of senior clinical decision maker for people 18 years or older has been amended to clarify that they

Meningitis (bacterial) and meningococcal disease: recognition, diagnosis and management

Consultation on draft guideline - Stakeholder comments table
01 September 2023 - 12 October 2023

Stakeholder	Document	Page No	Line No	Comments	Developer's response
				A 'senior clinical decision maker' for people aged 18 years or over should be a 4 clinician with core competencies in the care of acutely ill patients. Why would children need ST4+ review but not adults. Both groups should have this or it is age discrimination.	would usually be grade ST3 or above. The difference in grade between people under 18 (ST4) and over 18 (ST3) reflects the different lengths of time that are needed to gain the relevant core competencies. As such it is not age discrimination if they are different.
British Infection Association	Guideline	044	002	Young people aged 16 and over are generally admitted to adult hospitals and adult wards. So, the senior decision maker can't be a paediatric doctor.	Thank you for your comment. It is anticipated that the team managing the young person would seek advice from a paediatrician if they are being treated on an adult ward.
British Infection Association	Guideline	044	006	Severe allergy- using urticaria as severe will prevent those who may benefit from ceftriaxone/meropenem from receiving it.	Thank you for your comment. This has been removed from the definition.
British Infection Association	Guideline	General	General	The guideline does not make reference to the fact that Acute Meningitis and Meningococcal Septicaemia are notifiable under public health regulations – there should be a reference advising clinicians to notify cases – this triggers public health action e.g. for close contacts, schools etc.	Thank you for your comment. This change has been made.
British Infection Association	Guideline	General	General	The guideline does not make reference to identifying and managing close contacts (providing info, advice and antibiotic prophylaxis when required) of meningococcal disease and the role of public health	Thank you for your comment. Notification of cases has been added to the guideline.
British Society for Antimicrobial Chemotherapy (BSAC)	Guideline	014	002	1.1.17 - Suggest including Group A Streptococcal infection here specifically. It is very common for clinicians to focus on fever and headache in adolescents/ young adults specifically and not to examine the throat. Sore throat is often a late development in GAS infection and is missed unless the throat is examined.	Thank you for your comment. Group A Streptococcal infection would come under 'other forms of sepsis', which is already included in the recommendation.

Meningitis (bacterial) and meningococcal disease: recognition, diagnosis and management

Consultation on draft guideline - Stakeholder comments table
01 September 2023 - 12 October 2023

Stakeholder	Document	Page No	Line No	Comments	Developer's response
				Frequently see young people getting LPd without anyone looking in the throat!	
British Society for Antimicrobial Chemotherapy (BSAC)	Guideline	018	016	1.4.7 & 1.4.8 - Suggest also include papilloedema and GCS <= 12 as per BIA guidance and normal clinical practice. LP – rules on anticoagulation should be highlighted (NOACS and WARFARIN) including when to reinstitute anticoagulation (see The UK joint specialist societies guideline on the diagnosis and management of acute meningitis and meningococcal sepsis in immunocompetent adults - Journal of Infection) This is important and practical	Thank you for your comment. Looking for papilloedema could cause a delay to lumbar puncture. In the committee's view, papilloedema is relatively uncommon and in isolation, doesn't add anything to the assessment. Therefore it has not been added to the recommendation. GCS of 9 or less has been added to the recommendation. Providing details about effective anticoagulation for lumbar puncture is outside the scope of a guideline on meningitis and meningococcal disease.
British Society for Antimicrobial Chemotherapy (BSAC)	Guideline	027	026	1.6.13 give ceftriaxone – Assuming sensitive organism – Meropenem is an alternative if Ceftriaxone resistant	Thank you for your comment. Meropenem has been added as an alternative to ceftriaxone or cefotaxime.
British Society for Antimicrobial Chemotherapy (BSAC)	Guideline	027	026	1.6.13 Gram negative bacteria "continue treatment for at least 21 days". On page 60 lines 8 and following, it is clarified that there is no evidence for this statement. There is now mounting evidence that short courses of antibiotics are as effective in treating infections, and have better health outcomes in terms of adverse events. Of particular concern is the infant age group, where antibiotics may cause permanent changes in the microbiota, and are associated with long-term outcomes such as asthma, obesity, and other chronic conditions (Ref below)	Thank you for your comment. There is no evidence that a 14 day course would be sufficiently effective. Given concerns about resistant organisms the committee have retained the recommendation for 21 days of treatment to ensure the course is long enough. Aversa (2021) was not included in the evidence for this update because the population did not match the inclusion criteria (unclear whether participants had gram negative bacterial meningitis or bacterial meningitis).

Stakeholder	Document	Page No	Line No	Comments	Developer's response
				For this reason, instead of recommending a course that is associated with known harm, consider changing this duration to a maximum of 14 days, instead of waiting for research findings that may never come. Aversa, Z., Atkinson, E.J., Schafer, M.J., Theiler, R.N., Rocca, W.A., Blaser, M.J. and LeBrasseur, N.K., 2021, January. Association of infant antibiotic exposure with childhood health outcomes. In *Mayo Clinic Proceedings* (Vol. 96, No. 1, pp. 66-77). Elsevier.	
British Society for Antimicrobial Chemotherapy (BSAC)	Guideline	032	006	1.9.2 Patients with neurological complications of non-Pneumococcal BM were under-represented in the clinical trials and they should be carefully assessed for corticosteroids	Thank you for your comment. The committee thought there was no evidence to suggest that people with neurological signs would need a different approach to those without neurological signs. Therefore, they agreed that in their experience there was no need to treat this group differently.
British Society for Antimicrobial Chemotherapy (BSAC)	Guideline	060	027 and following	Risk factors for *Listeria monocytogenes*: clinical cases of *Listeria* meningoencephalitis in infants are rare, and mostly seen in infants less than one month. However, in clinical practice, infants up to 3 months usually receive empiric amoxicillin for this indication. We suggest reviewing British Paediatric Surveillance Unit data and UKHSA data for recent invasive *Listeria monocytogenes* epidemiology trends to provide evidence underpinning a more defined age group in this guideline, e.g., "newborns/infants younger than one month". This could replace the "very young"	Thank you for your comment. The text you are referring to in your comment is the rationale and impact text which describes the reasoning behind the recommendations made by the committee. It is not recommendations. The risk factors for *Listeria* were not reviewed by this guideline update and therefore the committee were not able to make recommendations in this area.

Meningitis (bacterial) and meningococcal disease: recognition, diagnosis and management

Consultation on draft guideline - Stakeholder comments table
01 September 2023 - 12 October 2023

Stakeholder	Document	Page No	Line No	Comments	Developer's response
				terminology open to interpretation and undoubtedly contributing to harm due to unnecessary antibiotic use.	
British Society for Antimicrobial Chemotherapy (BSAC)	Guideline	General	General	The guidance might be made a bit clearer with respect to use of cefotaxime when ceftriaxone is contra-indicated. I understand this only refers to contraindication due to incompatibility with calcium rather than any other contraindication e.g. allergy. Suggest note incompatibility is not an issue with cefotaxime.	Thank you for your comment. The guideline has been amended to clarify that this text relates to all contraindications for ceftriaxone.
Group B Strep Support (GBSS)	Guideline	001	008	Please highlight in the first paragraph that this guideline covers people over the age of 28 days, and signpost to the Neonatal Infection guideline for babies up to age 28 days.	Thank you for your comment. Following stakeholder feedback, recommendations about neonates have been removed from this guideline and included in the Neonatal Infection guideline instead so that all the guidance relevant to this population is in one place.
Group B Strep Support (GBSS)	Guideline	002	008	Under "Who is not covered by this guideline?" please add that this guideline does not cover babies aged 0-28 days, and signpost to the Neonatal Infection guideline for these babies	Thank you for your comment. Following stakeholder feedback, recommendations about neonates have been removed from this guideline and included in the Neonatal Infection guideline instead so that all the guidance relevant to this population is in one place. It has been made clear in the guideline overview that the guideline does not cover the neonatal population.
Group B Strep Support (GBSS)	Guideline	General	General	Please would you add information about charities that are able to provide information and support to those impacted by meningitis and their families? Including Meningitis Now, Meningitis Research Foundation, and Group B Strep Support. Charities play a pivotal role in providing practical and emotional support to patients and their families. This assistance can significantly improve the quality of life for those affected by	Thank you for your comment. Charities have been linked to in the 'Information for the public tab' on the guideline web page.

Stakeholder	Document	Page No	Line No	Comments	Developer's response
				meningitis. They can offer additional resources, such as information booklets, helplines, and support groups, which can complement clinical guidelines and enhance the overall care provided to patients.	
Institute of Biomedical Science (IBMS)	Guideline	020 - 021	General	There is no mention of antigen testing for CSF samples	Thank you for your comment. Antigen tests were not included in the review protocol for this question and so the evidence on them has not been appraised. Therefore the committee were not able to make recommendations in this area. We will pass your comment to the NICE surveillance team which monitor key events relevant to the guideline
Meningitis Now	Guideline	009	Table 2	We are pleased to see the caveats regarding altered behaviour in older adults and young adults	Thank you for your comment.
Meningitis Now	Guideline	011	Table 3	We would like to see more information included in the recognition of the rash on darker skin e.g. check lighter areas such as the palms of the hands, or soles of the feet and the roof of the mouth.	Thank you for your comment. The committee has focused on emphasising that the whole body should be checked for a rash in order to ensure that if a rash is present it is detected. They specifically highlighted petechiae in the conjunctivae as this area is often missed.
Meningitis Now	Guideline	013	013	Safety netting- consider adding that patient information should be in an accessible format.	Thank you for your comment. This has not been included as it is part of the NICE guideline on Patient experience in adult services (https://www.nice.org.uk/guidance/cg138).
Meningitis Now	Guideline	013	016	Would be beneficial to provide more information the framework for safety netting, such as in the previous quality standard: https://www.nice.org.uk/guidance/qs19/chapter/quality-statement-1-safety-netting-information	Thank you for your comment. The committee thought it was difficult to be prescriptive here because the guideline did not include a review question on safety netting. The committee included a general recommendation because there were aware that bacterial meningitis and meningococcal

Stakeholder	Document	Page No	Line No	Comments	Developer's response
					disease are difficult to diagnose or distinguish from other conditions. A cross reference has been added to the patient information recommendation advising people on what to look out for if they are sent home with an unconfirmed diagnosis.
Meningitis Now	Guideline	034	008	Consider giving details of meningitis charities early in the hospital stay as they can provide a great deal of support and reassurance at this time to both patient and family	Thank you for your comment. Giving contact details of charities has been added to the recommendation.
Meningitis Now	Guideline	035	011	Suggest changing the wording "who are in distress" to "and/or need more specialist support" – it is not just people who are visible distress who require psychological intervention – psychological support should be available to all	Thank you for your comment. The recommendation has been updated to 'Consider referral for psychological interventions, for people with bacterial meningitis or meningococcal disease who need specialist psychological support.
Meningitis Now	Guideline	038	010	Timelines will also change based on the speed of recovery and nature of any after-effects	Thank you for your comment. The committee agree.
Meningitis Now	Guideline	038	015	Who will be responsible for arranging the referral for psychosocial support?	Thank you for your comment. The committee did not want to specify who is responsible here as they agreed it should be the responsibility of everyone involved in caring for the person to ensure that a referral is made if one is needed. However they noted that this referral needs to happen before discharge. Therefore the committee have removed the phrase 'Arrange this after discharge if needed' from this recommendation. Recommendation 1.12.12 has also been amended to include co-ordination with psychology departments after discharge.

Meningitis (bacterial) and meningococcal disease: recognition, diagnosis and management

Consultation on draft guideline - Stakeholder comments table
01 September 2023 - 12 October 2023

Stakeholder	Document	Page No	Line No	Comments	Developer's response
Meningitis Now	Guideline	039	016	We feel more clarity is required regarding who should undertake the review e.g. hospital consultant or GP	Thank you for your comment. The recommendation has been updated to state 'arrange a review with a hospital doctor'.
Meningitis Now	Guideline	040	005	We feel more clarity is require regarding who should be undertaking this review.	Thank you for your comment. The recommendation has been updated to state 'arrange a review with a paediatrician'.
Meningitis Now	Guideline	040	021	If this is referring to educational staff (rather than health professionals), who will be responsible for this and how will this be achieved?	Thank you for your comment. This recommendation has been updated to advise parents what to do. It has been split into two recommendations: one for parents to seek advice from their GP if their child or young person develops possible neurodevelopmental conditions; and one on what to discuss with the child or young person's school.
Meningitis Now	Guideline	General	General	We are pleased that this guideline has been extended to adults. However, it makes for a long guideline, which is complicated in places. We wonder how easy this will be to use in a clinical setting. Would it be better to separate the guideline into children/young people and adults?	Thank you for your comment. Following stakeholder feedback, recommendations about neonates have been removed from this guideline and included in the Neonatal Infection guideline instead so that all the guidance relevant to this population is in one place.
Meningitis Now	Guideline	General	General	There is no reference in the guideline for planning care following the death of a patient. This may not be an area of focus for this guideline, however ongoing support and signposting for those that are bereaved is crucial.	Thank you for your comment. The guideline did not investigate a review question on this issue, as there are already recommendations in existing NICE guidance on end of life care (NG61 and NG142)
Meningitis Research Foundation	Guideline	005	013	We suggest amending this wording to "Fever, headache and altered level of consciousness or cognition as a red flag combination". Then stating separately that "neck stiffness also may be seen in older children or in well-established meningitis cases". We are concerned that staff may still wait for neck stiffness to be seen before they diagnose meningitis. Calling it	Thank you for your comment. The guideline has been restructured based on stakeholder comments into a section on when to suspect bacterial meningitis and a section on when to suspect meningococcal disease.

Meningitis (bacterial) and meningococcal disease: recognition, diagnosis and management

Consultation on draft guideline - Stakeholder comments table
01 September 2023 - 12 October 2023

Stakeholder	Document	Page No	Line No	Comments	Developer's response
				"the Red flag combination" and emphasising this at the head of the table seems dangerous as doctors may decide without this combination, they don't need to consider meningitis. We feel that the emphasis needs to change slightly within the guideline to show that the red flag combination is likely a medical emergency which requires urgent treatment, but there should be more emphasis placed on clinicians being aware that patients may present before or without this red flag combination and if meningitis is suspected, should immediately be treated. It is well established that optimal early management of IMD at the admitting hospital can improve outcomes[1]. 1) Ninis, Nelly, et al. "The role of healthcare delivery in the outcome of meningococcal disease in children: case-control study of fatal and non-fatal cases." Bmj 330.7506 (2005): 1475.	As part of this restructure the recommendations have been amended to clarify that "Bacterial meningitis can still be strongly suspected based on clinical assessment, even in people who do not have all the symptoms in the red flag combination." However, the committee noted that neck stiffness is a red flag symptom and therefore it has been retained in the red flag combination for bacterial meningitis. Ninis (2005) was not included in the evidence for this update because the outcomes it reported did not match the review protocol.
Meningitis Research Foundation	Guideline	005	013	There is currently no mention of the need to regularly monitor patients with suspected bacterial meningitis or IMD (the current quality standard identifies the need for hourly monitoring of vital signs). Whilst referring to the sepsis guidelines covers monitoring for signs of shock, these guidelines need to point out that all patients with BM are at risk of developing rapid onset raised intracranial pressure. They should therefore identify the need for regular (hourly) monitoring of heart rate, blood pressure, pupils and mental status / neurological condition in patients with suspected meningitis.	Thank you for your comment. This guideline update did not look at the evidence on monitoring for those with suspected bacterial meningitis or meningococcal disease. As such the committee were not able to make recommendations in this area.

Meningitis (bacterial) and meningococcal disease: recognition, diagnosis and management

Consultation on draft guideline - Stakeholder comments table
01 September 2023 - 12 October 2023

Stakeholder	Document	Page No	Line No	Comments	Developer's response
Meningitis Research Foundation	Guideline	007	Table 1	Red flag combination –We believe that highlighting these four symptoms in combination could decrease clinicians' overall ability to recognise cases of bacterial meningitis earlier in the course of the illness. Clinicians could wait for the red flag combination to happen which will decrease the sensitivity of the pickup, not increase it (despite increasing recognition being the rationale). As neck stiffness is a late sign and is not always apparent, especially in younger children we believe it would be more helpful to say that the red flag combination is "Fever, headache and altered level of consciousness or cognition". Then a note to say that neck stiffness may also be apparent in older children or in well-established meningitis cases but that the absence of this should not be reassuring.	Thank you for your comment. The guideline has been restructured based on stakeholder comments into a section on when to suspect bacterial meningitis and a section on when to suspect meningococcal disease. As part of this restructure the recommendations have been amended to clarify that "Bacterial meningitis can still be strongly suspected based on clinical assessment, even in people who do not have all the symptoms in the red flag combination." However, the committee noted that neck stiffness is a red flag symptom and therefore it has been retained in the red flag combination for bacterial meningitis. Ninis (2005) was not included in the evidence for this update because the outcomes it reported did not match the review protocol.
Meningitis Research Foundation	Guideline	007	Table 1	Fever- clinicians should be aware that the patient may not have a fever if they have been given antipyretics, a history of fever is just as important. Antipyretics may also treat the early symptoms of IMD and patients may temporarily look better after they have been given medications.	Thank you for your comment. The committee agree and have updated the notes for fever in all 3 tables to include asking if antipyretics have been taken, because this may make fever harder to identify.'
Meningitis Research Foundation	Guideline	007	Table 1	Non-blanching rash. We suggest amending the notes section to signpost to table 3 and mention that a non-blanching rash is a red flag for IMD. Also for rash on dark skin you can check on	Thank you for your comment. A signpost to table 3 has been added as suggested. The committee has focused on emphasising that the whole body should be checked for a rash in order to ensure that if a

Stakeholder	Document	Page No	Line No	Comments	Developer's response
				the palms of the hands, soles of the feet, the abdomen and top of roof of mouth as well as in the conjunctivae.	rash is present it is detected. They specifically highlighted petechiae in the conjunctivae as this area is often missed.
Meningitis Research Foundation	Guideline	007	Table 1	Cardiovascular. Persistent tachycardia plus cold hands and feet are signs of sepsis but defer to the NG51 sepsis guideline	Thank you for your comment. This has been updated to 'Early signs of sepsis and a cross reference to the NICE guideline on Sepsis (https://www.nice.org.uk/guidance/ng51).
Meningitis Research Foundation	Guideline	007	Table 1	Suggest changing "Altered behaviour (for example unusually aggressive or subdued) to "Unusual behaviour". Then in the notes section add "For example the patient may appear agitated or aggressive or have an altered level of consciousness. Parents should be closely questioned for their perception of their child's altered behaviour and responses."	Thank you for your comment. This has been updated to 'Unusual behaviour'. The notes column has been updated to state 'For example, the person may be agitated, aggressive or subdued. Ask family members or carers about changes in the child or young person's behaviour.' A cross reference has also been added to the section on identifying changes in babies, children and young people who do not communicate verbally, see recommendation 1.2.14 in the NICE guideline on babies, children and young people's experience of care.'
Meningitis Research Foundation	Guideline	008	Table 1	Suggest amending to "Neck stiffness, including more subtle discomfort or reluctance to move **or flex** the neck. In the notes section it is worth noting that neck stiffness is often not seen in young children, is a late sign and does not need to be present to strongly suspect meningitis. Neck stiffness may also be accompanied by back pain.	Thank you for your comment. The committee thought that 'move' also includes 'flex' as a type of movement. To keep the wording simpler this has not been added to the recommendation. The notes column of the table includes the point 'Neck stiffness is less likely and harder to identify in babies'. Back pain is mentioned in the category 'Other' at the bottom of the table.
Meningitis Research Foundation	Guideline	008	Table 1	In the section referring to altered level of consciousness and cognition. We suggest removing the current text from the notes box and replacing with: "signs of early raised intracranial	Thank you for your comment. The committee thought that the wording as written is better. Intracranial pressure is not always raised with an

Stakeholder	Document	Page No	Line No	Comments	Developer's response
				pressure include a fluctuating level of consciousness often associated with vomiting and headache. Parents should be closely questioned for their perception of their child's altered behaviour and responses."	altered level of consciousness or cognition and therefore this has not been included in the table.
Meningitis Research Foundation	Guideline	008	Table 2	Within table 2 we think it is important to note that young adults aged between 18 to 25 may present clinically more like children, so adult clinicians should familiarise themselves with how bacterial meningitis manifests in children. The importance of this is outlined in the bullets below: • Adolescents and young adults are one of the most vulnerable age groups for IMD and the disease can be rapidly fatal in this age group[1]. Data from UKHSA has shown a rapid increase in IMD during epidemiological year 21/22 in the 15 to 24 year old age group particularly as a result of group B meningococcal disease with the incidence in this age group now higher than in children aged 1 to 4. During the same year there were an estimated 12 deaths in all ages with at least 3 of these within the 19-22 year old age group [2,3]. • A recent multicentre study which took place across Europe also concluded that despite accounting for a relatively small fraction of all ED visits, febrile adolescents have an increased risk of serious bacterial infections, including sepsis/meningitis, in comparison with younger children[4]. The authors state that more research is needed to be able to provide detailed guidelines for this age group. • Research has previously found that children with IMD being looked after by doctors without paediatric training	Thank you for your comment. A bullet point has been added to recommendation 1.1.1 to address your comment. This advises that teenagers and younger adults may frequently appear clinically physiologically well and that can obscure the signs and symptoms of bacterial meningitis and meningococcal disease. Beebeejaun (2020) and Ninis (2005) were not included in the evidence for this update because the outcomes they reported did not match the review protocol. Borenszatjn (2022) was not included in the evidence for this update because the population did not match the review protocol (unclear whether participants had invasive meningococcal disease or bacterial meningitis)

Stakeholder	Document	Page No	Line No	Comments	Developer's response
				were at increased risk of dying[5]. Often this was as a result of drs trained to recognise serious illness in adults failing to recognise compensated shock in children where hypotension can be a late sign due to the maintenance of blood pressure through vasoconstriction and tachycardia. Whilst it was only children who participated in this study, MRF are in contact with families of fatal cases of young adults who presented similarly, so the guidelines should make adult clinicians aware of this phenomenon. References 1) Beebeejaun, Kazim, et al. "Invasive meningococcal disease: timing and cause of death in England, 2008–2015." Journal of Infection 80.3 (2020): 286-290Borensztajn, Dorine, et al. "Characteristics and management of adolescents attending the ED with fever: a prospective multicentre study." BMJ open 12.1 (2022): e053451. 2) Invasive meningococcal disease in England: annual laboratory confirmed reports for epidemiological year 2021 to 2022. Available from Invasive meningococcal disease in England: annual laboratory confirmed reports for epidemiological year 2021 to 2022 - GOV.UK (www.gov.uk) 3) JCVI minutes - Extraordinary JCVI meeting to discuss polio and meningococcal B Minute of the meeting held on 25 July 2022. Available from Extraordinary JCVI polio and meningococcal B meeting draft minute July 2022.pdf | Powered by Box	

Meningitis (bacterial) and meningococcal disease: recognition, diagnosis and management

Consultation on draft guideline - Stakeholder comments table
01 September 2023 - 12 October 2023

Stakeholder	Document	Page No	Line No	Comments	Developer's response
				4) Borensztajn, Dorine, et al. "Characteristics and management of adolescents attending the ED with fever: a prospective multicentre study." BMJ open 12.1 (2022): e053451. Ninis, Nelly, et al. "The role of healthcare delivery in the outcome of meningococcal disease in children: case-control study of fatal and non-fatal cases." Bmj 330.7506 (2005): 1475.	
Meningitis Research Foundation	Guideline	008	Table 2	In the box next to "ill appearance". If a patient has been given anti-inflammatory/ antipyretic medication, clinicians should be aware that this can change the appearance of the child and they may look less sick. Parents should be asked for their opinion on how sick the child seems to them.	Thank you for your comment. The committee agree and have updated the notes for ill appearance in all 3 tables to include asking if antipyretics have been taken, because this may make ill appearance harder to identify.'
Meningitis Research Foundation	Guideline	011	003 – 006	There is mention of non-specific moderate to high-risk symptoms but table 3 only refers to non-specific symptoms or signs in the table headings. This text and the text in the table need to align. There is also no definition of moderate to high-risk symptoms provided.	Thank you for your comment. 'Moderate to high risk' symptoms has been removed from the recommendation. This is to be consistent with the table and because the committee agreed that it was difficult to define what moderate or high risk is. Meningococcal disease can present with any combination of the non-specific symptoms in table 3.
Meningitis Research Foundation	Guideline	012	General	There should be a box with advice about the disease trajectory: clinicians should be aware that IMD will result in death within 24 hours of the first symptom. Patients with IMD will be getting more unwell with every hour. Clinicians should be aware that children who look more unwell over a few hours may have sepsis or meningitis and should be treated and stabilised with urgency. The current guideline recommends (1.4.47 and 1.4.48) that children should be monitored closely after admission to hospital for signs of deterioration – respiration, pulse, blood	Thank you for your comment. This guideline update did not look at a question about disease trajectory and therefore the committee are not able to make recommendations in this area.

Meningitis (bacterial) and meningococcal disease: recognition, diagnosis and management

Consultation on draft guideline - Stakeholder comments table
01 September 2023 - 12 October 2023

Stakeholder	Document	Page No	Line No	Comments	Developer's response
				pressure, oxygen saturation and GCS and makes clinicians aware that these children can deteriorate rapidly. We would like to see a similar recommendation included in this guideline.	
Meningitis Research Foundation	Guideline	012	Table 3	There are specific fever thresholds given in the notes box next to fever which come from the NICE fever guideline but we are uncertain that this is evidenced based for IMD. Patients can present with any level of fever in IMD.	Thank you for your comment. There was some evidence to suggest fever was a factor in diagnosing meningococcal disease. Taking this into account and based on their clinical knowledge and experience, the committee reflected that very high temperature is unusual in young children and can often be indicative of bacterial infection. The committee considered the evidence and recommendations in the NICE Fever in under 5s guideline, and agreed to include consistent thresholds for fever. A caveat has been added to preceding the temperature thresholds. This states 'Fever is a particular concern for babies at the levels specified in the NICE guideline on sepsis'
Meningitis Research Foundation	Guideline	013	013 - 019	There is no mention of providing patients and their carers with safety netting information that includes information on bacterial meningitis and sepsis. We suggest this is included in this section.	Thank you for your comment. A cross reference has been added to the patient information recommendation advising people on what to look out for if they are sent home with an unconfirmed diagnosis.
Meningitis Research Foundation	Guideline	014	017 - 019	The quality standard currently specifies that children and young people requiring transfer to PICU or HDU in another hospital are transferred by a specialist paediatric retrieval team. We suggest including this wording here and also including the recommendation that children with suspected BM or IMD being transferred within or between hospitals are escorted by a	Thank you for your comment. Transfer to a different hospital was not one of the review questions investigated by this update. Therefore the committee are not able to make recommendations in this area.

Stakeholder	Document	Page No	Line No	Comments	Developer's response
				healthcare professional trained in advanced paediatric life support.	
Meningitis Research Foundation	Guideline	015	004 - 006	Providing pre hospital antibiotics in patients with meningitis is a change in the recommendation from the current guideline. The context of administering pre hospital antibiotics in this guideline is for when meningitis is strongly suspected (i.e when the combination of the 4 red flag symptoms are present - so the patient is very unwell) and when a significant delay in getting the patient to hospital is likely. However, if the definition of the red flag combination changes as we have suggested – this would alter the context of this recommendation and perhaps would require more consideration to be given to this.	Thank you for your comment. The updated guideline recommends that transfer to hospital is the priority. However if bacterial meningitis is strongly suspected and there is likely to be a clinically significant delay in transfer to hospital then antibiotics can be given. Whilst worded slightly differently, these recommendations are essentially the same as in the current guideline. The recommendation advising healthcare professionals not to delay transfer to hospital in order to give antibiotics has been moved up the order of the recommendations in the section 'Transfer to hospital and antibiotics before arrival at hospital' to try and make this clearer.
Meningitis Research Foundation	Guideline	018	016 - 019	An LP should not be undertaken in a patient with clinical signs of brain herniation. The current wording implies this is safe. Suggest amending to "Don't LP if there are signs of brain herniation. Priority should be stabilisation of the patient."	Thank you for your comment. The recommendations have been amended to make clear that if there are signs of brain herniation, then a lumbar puncture should be deferred.
Meningitis Research Foundation	Guideline	020	004 - 006	In the Do not perform LP: this should include patients with signs of raised intracranial pressure, prolonged seizures and rapidly falling conscious level.	Thank you for your comment. These reasons not to perform a lumbar puncture have been included in the recommendation.
Meningitis Research Foundation	Guideline	033	007 - 021	In the management after bacterial meningitis or meningococcal disease include: • recommendations to test children and young people for complement deficiency if they have had more than one	Thank you for your comment. Recommendations related to recurrent episodes are in section 1.14 on recurrent bacterial meningitis and meningococcal disease. Two recommendations also refer people to

Meningitis (bacterial) and meningococcal disease: recognition, diagnosis and management

Consultation on draft guideline - Stakeholder comments table
01 September 2023 - 12 October 2023

Stakeholder	Document	Page No	Line No	Comments	Developer's response
				episode of IMD, and episode of IMD caused by a serogroup other than B, or IMD caused by any serogroup as well as a history of other recurrent or serious bacterial infections (recommendation 1.5.8 of current guidance) • a recommendation for children with recurrent episodes of IMD to be assessed by a specialist in infectious disease or immunology (recommendation 1.5.9 of current guidance) a recommendation for children who have had IMD and there isa family history of IMD or complement deficiency – test for complement deficiency (recommendation 1.5.12 of current guidance)	specialists for further assessment: 1.10.3 refers babies, children and young people to paediatric immunology and an infection disease specialist to assess for primary immunodeficiency; and recommendation 1.14.3 recommends people who have had a recurrent episode of bacterial meningitis or meningococcal disease are reviewed with a paediatric immunology and infectious disease specialist or an adult infection specialist or immunologist (as appropriate) and that they agree what tests, investigations, vaccines and other interventions are needed to prevent re-occurrence.
Meningitis Research Foundation	Guideline	034	016	Contact tracing and preventative prophylaxis is also a requirement for Hib meningitis. Please include this here also.	Thank you for your comment. Hib meningitis has been added to the recommendation.
Meningitis Research Foundation	Guideline	036	004 - 007	Include neurological complications in this list to cover things like epilepsy as well as behavioural problems	Thank you for your comment. Neurological has been added to the recommendation on identifying and managing complications. Neurological has also been added to the next subheading which now states 'Cognitive, neurological and developmental complications' because this covers recommendations related to neurological problems as well.
Meningitis Research Foundation	Guideline	040	001 - 026	We are really pleased to see the recommendations for longer follow up periods for babies who have had bacterial meningitis and IMD. We know that many complications will not become apparent until babies reach certain developmental milestones, so the follow up appointment 1 year after discharge and the	Thank you for your comment and support for the recommendation.

Meningitis (bacterial) and meningococcal disease: recognition, diagnosis and management

Consultation on draft guideline - Stakeholder comments table
01 September 2023 - 12 October 2023

Stakeholder	Document	Page No	Line No	Comments	Developer's response
				follow up by community child development for two years after discharge will help identify some of these issues more quickly.	
Meningitis Research Foundation	Guideline	General	General	The current quality standard states that if children show signs of shock or raised intracranial pressure, they should be assessed by a consultant paediatrician, but this wording is not contained in this guidance. We would like to see this wording included.	Thank you for your comment. This area was not prioritised for investigation by this guideline update. Therefore it is not possible to include the recommendation you have suggested.
Meningitis Research Foundation	Guideline	General	General	Throughout the guideline we could not see any reference to the importance of notifying a case of Bacterial meningitis or IMD to the proper officer for health protection purposes. We suggest including some wording to this effect early on in the guideline.	Thank you for your comment. This change has been made.
Meningitis Research Foundation	Comments form	Question	1	The diagnosis of meningitis and invasive meningococcal disease has always been a challenge. The early symptoms of disease are very similar to self-limiting viral illnesses, but symptoms can progress quickly and in the cases of meningococcal disease, death can occur within hours of symptom onset. For this reason, recognising this disease is one of the greatest challenges. The severity of the disease means that it is important not to miss a case that might present itself to a medical practitioner. It is important for clinicians and the general public to remain aware of the signs and symptoms of meningitis and meningococcal disease. The meningitis charities have plenty of symptoms awareness literature and we encourage signposting to these. Meningitis Research Foundation also have age specific easy to read symptoms information including what to look for on darker skin tones. This is available from www.meningitis.org.	Thank you for providing us with this information.
Meningitis Research Foundation	Comments form	Question	3	MRF strongly advocate for adult clinicians to be made aware of the need to consider the treatment of young adults as a special case when it comes to bacterial meningitis and IMD. Physiological parameters within young adults during the course	Thank you for your comment. A bullet point has been added to the first recommendation to address your comment. This advises that teenagers and younger adults may frequently appear clinically

Stakeholder	Document	Page No	Line No	Comments	Developer's response
				of infection may behave more like those of younger age groups and adult clinicians should be made aware of this. Full rationale is detailed below. Rationale behind considering adolescents as a special case: • Adolescents and young adults are one of the most vulnerable age groups for IMD and the disease can be rapidly fatal in this age group[1]. Data from UKHSA has shown a rapid increase in IMD during epidemiological year 21/22 in the 15 to 24 year old age group particularly as a result of group B meningococcal disease with the incidence in this age group now higher than in children aged 1 to 4. During the same year there were an estimated 12 deaths in all ages with at least 3 of these within the 19-22 year old age group [2,3]. • A recent multicentre study which took place across Europe also concluded that despite accounting for a relatively small fraction of all ED visits, febrile adolescents have an increased risk of serious bacterial infections, including sepsis/meningitis, in comparison with younger children[4]. The authors state that more research is needed to be able to provide detailed guidelines for this age group. • Research has previously found that children with IMD being looked after by doctors without paediatric training were at increased risk of dying[5]. Often this was as a result of drs trained to recognise serious illness in adults failing to recognise compensated shock in children where hypotension can be a late sign due to the	physiologically well and that can obscure the signs and symptoms of bacterial meningitis and meningococcal disease'. We did not analyse data for the 16-24 year old age group separately. Wherever possible, we analysed data separately for neonates (<1 month), babies (<1 year), children (1 year-<18 years) and adults (18+ years). The evidence seldom allowed any subgroup analysis to be achieved. The committee were aware that there is an overlap between young people and adults and a definitive age cut off is not always perfect. They picked an age cut-off of 18 and over as this matches the BNF for children age cut-offs and medications are a key part of this guideline. Following stakeholder feedback, recommendations about neonates have been removed from this guideline and included in the Neonatal Infection guideline instead so that all the guidance relevant to this population is in one place.

Stakeholder	Document	Page No	Line No	Comments	Developer's response
				maintenance of blood pressure through vasoconstriction and tachycardia. Whilst it was only children who participated in this study, MRF are in contact with families of fatal cases of young adults who presented similarly, so the guidelines should make adult clinicians aware of this phenomenon. We suggest that this stays as one guideline for simplicity (as is the case for the sepsis guideline), but that there is a designated section within this guideline which specifically deals with young adults and older children. We suggest that this section specifically covers 16-24 year olds rather than just 18-24 year olds (defined as young adults in these guidelines) because we believe that the new risk stratification being proposed for over 16s in the sepsis guidelines (which relies on NEWS2 scores) risks delaying life-saving treatment with antibiotics in adolescents presenting with Invasive meningococcal disease (IMD). References 5) Beebeejaun, Kazim, et al. "Invasive meningococcal disease: timing and cause of death in England, 2008–2015." Journal of Infection 80.3 (2020): 286-290Borensztajn, Dorine, et al. "Characteristics and management of adolescents attending the ED with fever: a prospective multicentre study." BMJ open 12.1 (2022): e053451. 6) Invasive meningococcal disease in England: annual laboratory confirmed reports for epidemiological year	

Stakeholder	Document	Page No	Line No	Comments	Developer's response
				2021 to 2022. Available from Invasive meningococcal disease in England: annual laboratory confirmed reports for epidemiological year 2021 to 2022 - GOV.UK (www.gov.uk) 7) JCVI minutes - Extraordinary JCVI meeting to discuss polio and meningococcal B Minute of the meeting held on 25 July 2022. Available from Extraordinary JCVI polio and meningococcal B meeting draft minute July 2022.pdf | Powered by Box 8) Borensztajn, Dorine, et al. "Characteristics and management of adolescents attending the ED with fever: a prospective multicentre study." BMJ open 12.1 (2022): e053451. Ninis, Nelly, et al. "The role of healthcare delivery in the outcome of meningococcal disease in children: case-control study of fatal and non-fatal cases." Bmj 330.7506 (2005): 1475.	
NHS England	Guideline	005	013	Is it possible to provide more specific information to support clinicians with estimating the likelihood of bacterial meningitis and deciding whether to start antibiotics and which antibiotic to start? The summary from Up-to-date copied below provides informative and useful statistics on the frequency of incidence of the common presenting symptoms and signs that can guide a clinician. *"The classic triad of acute bacterial meningitis, which occurs in 41 percent of patients, consists of fever, nuchal rigidity (neck stiffness), and a change in mental status, usually of sudden onset [Erdem H 2017; Tunkel AR 2017]. Older patients (age >60*	Thank you for your comment. This guideline update did not have a review question on the prevalence of different signs and symptoms or on signs/symptoms that differentiate between fatal and non-fatal cases. The guideline reviews were focused on signs and symptoms that were associated with a confirmed diagnosis of BM/MD and all the evidence was for individual signs and symptoms. Therefore expert clinical consensus was used to define how signs and symptoms might cluster together. It is therefore not possible to make recommendations as specific as you have suggested.

Stakeholder	Document	Page No	Line No	Comments	Developer's response
				years) more commonly present with the triad than younger patients (58 versus 36 percent) [Bijlsma MW 2016]. *The most common clinical features include a severe headache (84 percent), fever greater than 38°C (74 percent), stiff neck (74 percent), a Glasgow Coma scale <14 (71 percent), and nausea (62 percent) [1,2,4]. In a 2004 prospective study of 696 cases of community-acquired bacterial meningitis, almost all patients (95 percent) presented with at least two of four symptoms (ie, headache, fever, stiff neck, and altered mental status) [Tunkel AR 2017].* *The absence of all of these findings essentially excludes the presence of bacterial meningitis [Weisfelt M 2006].* *In addition to the classic findings, less common manifestations are seizures (23 percent), aphasia or hemi- or monoparesis (22 percent), coma (13 percent), cranial nerve palsy (9 percent), rash (8 percent), and papilledema (4 percent) [Erdem H 2017; Tunkel AR 2017; Aronin SI 1998; Attia J 1999]. Concomitant infections may include sinusitis or otitis (34 percent), pneumonia (9 percent), and endocarditis (1 percent) [Erdem H 2017]."* This evidence could be operationalised with recommendations such as: • Does the patient have two or more of the following four symptoms: headache, fever, stiff neck, altered mental status?	

Meningitis (bacterial) and meningococcal disease: recognition, diagnosis and management

Consultation on draft guideline - Stakeholder comments table
01 September 2023 - 12 October 2023

Stakeholder	Document	Page No	Line No	Comments	Developer's response
				○ If yes and bacterial meningitis is suspected, administer antibiotic (if no contra-indications). Almost all patients (95%) with community-acquired bacterial meningitis are expected to present with at least two of these four symptoms. ○ If none of the four symptoms are present, bacterial meningitis is unlikely and an alternative diagnosis should be considered. ○ If only one of the four symptoms is present, but there is a clinical suspicion of bacterial meningitis, seek urgent specialist advice. A diagnosis of bacterial meningitis should be considered when there are presenting symptoms referable to the central nervous system in a patient with fever and sudden onset of severe illness.	
NHS England	Guideline	005	027	Suggest to examine with adequate lighting available to detect faint rash/ rash in people with darker skin tones.	Thank you for your comment. The guideline has avoided going into all the detail on how to assess people and therefore this point has not been added.
NHS England	Guideline	007	001	Consider labelling Table1 as 'symptoms or signs reported from clinical studies of babies, children and young people with bacterial meningitis'. Some of the symptoms and signs are non-specific and do not necessarily indicate bacterial meningitis in every case.	Thank you for your comment. The table title has been updated to 'Symptoms and signs that may indicate bacterial meningitis in babies, children and young people'.
NHS England	Guideline	008	001	Consider labelling Table 2 as 'symptoms or signs reported from clinical studies of adults with bacterial meningitis'. Some of the symptoms and signs are non-specific and do not necessarily indicate bacterial meningitis in every case.	Thank you for your comment. Whilst the committee agree that some of the symptoms and signs are non-specific, based on the evidence and their clinical experience, they are all things that can be

Meningitis (bacterial) and meningococcal disease: recognition, diagnosis and management

Consultation on draft guideline - Stakeholder comments table
01 September 2023 - 12 October 2023

Stakeholder	Document	Page No	Line No	Comments	Developer's response
					present with bacterial meningitis. As such the table title has been changed to 'may indicate'.
NHS England	Guideline	011	007	Consider re-phrasing the title of Table 3 to symptoms and signs that 'may indicate meningococcal disease' rather than 'indicate meningococcal disease'. Some of the symptoms and signs are too non-specific (e.g., diarrhoea) to 'indicate meningococcal disease'. Alternatively consider labelling the table as 'symptoms or signs reported from clinical studies of patients with meningococcal disease'.	Thank you for your comment. The committee agree and have relabelled the table to state 'may indicate meningococcal disease'.
NHS England	Guideline	014	002	Does migraine merit explicit mention as a non-serious but important common differential diagnosis?	Thank you for your comment. The focus of this recommendation is other serious conditions. Migraine is not a serious condition in most cases and so has not been specifically mentioned.
NHS England	Guideline	015	013	Link to recommendation for antibiotics in severe allergy/anaphylaxis does not give good options for out of hospital treatment if parenteral antibiotics are required. Options are co-trimoxazole and chloramphenicol which would be difficult to administer parenterally if no IV access as cannot administer intramuscularly.	Thank you for your comment. The link to the recommendations for penicillin allergy has been removed as the committee agreed it was not helpful. A new recommendation has been added to clarify that in the case of severe antibiotic allergy, no antibiotics should be given outside of hospital.
NHS England	Guideline	017	008	blood gas and LP should be done before antibiotics - only when safe to do so and this has been highlighted again in page 55 line 3 - this must be highlighted.	Thank you for your comment. Where performing a lumbar puncture is mentioned in recommendations it has been clarified that this should only be when safe to do so.
NHS England	Guideline	018	005	Should red blood cell count also be specified to allow check for contamination of the CSF sample?	Thank you for your comment. This recommendation is about blood tests to perform when someone is suspected of having bacterial meningitis. Recommendations on cerebrospinal fluid

Meningitis (bacterial) and meningococcal disease: recognition, diagnosis and management

Consultation on draft guideline - Stakeholder comments table
01 September 2023 - 12 October 2023

Stakeholder	Document	Page No	Line No	Comments	Developer's response
					recommendations occur later in this section and have been amended to include red cell count.
NHS England	Guideline	019	006	Significant delay – please specify is this 30 minutes? One hour? It is open to interpretation. Specific guidance will be useful.	Thank you for your comment. The committee did not recommend a specific timeframe for performing lumbar puncture in case this was interpreted as a hard cutoff. The key timeframe is to give antibiotics within 1 hour of arrival in hospital.
NHS England	Guideline	020	009	Measure blood glucose by the same method as CSF glucose is being measured to enable accurate calculation of the CSF: blood glucose ratio.	Thank you for your comment. This would be too much detail about measuring blood glucose to include in a guideline about meningitis and meningococcal disease.
NHS England	Guideline	020	009 & 018	Could the clinical significance/interpretation of CSF glucose testing be clarified here for convenience?	Thank you for your comment. The reason for measuring blood glucose is already stated in the recommendation.
NHS England	Guideline	020	015	Should red blood cell count also be specified to allow check for contamination of the CSF sample?	Thank you for your comment. The recommendation has been amended to 'red and white cell count' to also include red cells.
NHS England	Guideline	021	008	It would be valuable to provide a statement about the extent expected impact of prior antibiotic exposure on pathogen recovery and the role of PCR in this situation.	Thank you for your comment. The expected impact of prior antibiotic exposure will be different for different antibiotics and different organisms. Therefore it is not possible to add this detail to the recommendations.
NHS England	Guideline	023	003	Add Start Smart then Focus – focus antibiotic treatment to narrow spectrum cover after the results of culture and sensitivity are available in consultation with guidance from Microbiologist and Infectious Diseases specialist.	Thank you for your comment. The committee noted that in practice ceftriaxone is usually given for most pathogens as it is important to start antibiotics as soon as possible. It is rare to be able to narrow down the spectrum cover after this. However a cross reference has been added to the NICE

Meningitis (bacterial) and meningococcal disease: recognition, diagnosis and management

Consultation on draft guideline - Stakeholder comments table
01 September 2023 - 12 October 2023

Stakeholder	Document	Page No	Line No	Comments	Developer's response
					guidance on anti-microbial stewardship in light of the issue you raise.
NHS England	Guideline	023	004	Could a statement be added about the dose and dose interval for ceftriaxone? There is variation in clinical practice for adult patients.	Thank you for your comment. The BNF and BNFC provide dose information for the use of ceftriaxone in this indication. Consequently doses are not normally included in NICE recommendations. However, because the BNF/BNFC specify a dose range in this instance, the recommendation has been amended to clarify that the maximum dose should be used.
NHS England	Guideline	023	004	Why recommend ceftriaxone in preference to cefotaxime if they are equivalent? Why not offer a choice? Some organisations may prefer to use cefotaxime so if clinical trial data indicate non-inferiority, why limit this flexibility if there is no clear clinical superiority for one agent?	Thank you for your comment. As specified in the rationale and impact section, the committee recommended intravenous ceftriaxone when the causative organism is unknown, based on their knowledge and experience. Ceftriaxone is a broad-spectrum antibiotic that can be used to treat the most common infective organisms. This treatment is in line with current practice and the BNF and the BNFC. There are also practical and cost benefits with ceftriaxone, as it only needs to be given once a day.
NHS England	Guideline	023	006	A recommendation to perform two sets of blood cultures, to fill the tubes to at least 8mL and to transfer to the laboratory promptly for incubation (within no longer than 4 hours) would be welcome to highlight the importance of good blood culture practice for maximising yield and informing appropriate patient management.	Thank you for your comment. Making recommendations about good blood culture practice is not an issue which is specific to meningitis and therefore is outside the scope of this guideline.

Meningitis (bacterial) and meningococcal disease: recognition, diagnosis and management

Consultation on draft guideline - Stakeholder comments table
01 September 2023 - 12 October 2023

Stakeholder	Document	Page No	Line No	Comments	Developer's response
NHS England	Guideline	024	014	Any guidance on choice of antibiotic for pregnant patients with penicillin allergy, considering risk of Listeria? Is co-trimoxazole still recommended as an adjunct (to ceftriaxone or chloramphenicol) for pregnant patients?	Thank you for your comment. The recommendation has been amended to clarify that advice from an infection specialist would be needed for people who are pregnant, as this specialist would be best placed to advise on antibiotic treatment in this instance.
NHS England	Guideline	026	017	For group B strep – for neonates does this also need to link to neonatal NICE guidance.	Thank you for your comment. The recommendations about antibiotics are not intended to apply to neonates. There is already a cross reference after recommendation 1.6.4 which directs the reader to other NICE guidance which includes recommendations relevant to neonates. Following stakeholder feedback, recommendations about neonates have been removed from this guideline and included in the Neonatal Infection guideline instead so that all the guidance relevant to this population is in one place.
NHS England	Guideline	032	001	Does this section on corticosteroids need to be clearer that this is not for newborn babies <28 days age.	Thank you for your comment. Following stakeholder feedback, recommendations about neonates have been removed from this guideline and included in the Neonatal Infection guideline instead so that all the guidance relevant to this population is in one place.
NHS England	Guideline	032	006	Dexamethasone dose and duration?	Thank you for your comment. The dose and duration are included as part of the BNF and BNFC and therefore are not included in the recommendations.
NHS England	Guideline	033	007	Section 1.10 - We would recommend that we include the following in terms of IPC management ''Nurse in a single room	Thank you for your comment. The review questions investigated by this guideline update did not include

Meningitis (bacterial) and meningococcal disease: recognition, diagnosis and management

Consultation on draft guideline - Stakeholder comments table
01 September 2023 - 12 October 2023

Stakeholder	Document	Page No	Line No	Comments	Developer's response
				with on-suite using fluid resistant surgical facemask (FRSM) for routine care and FFP3 or Hood for AGPs until patient has been established on appropriate antimicrobial treatment''.	the interventions you mention in your comment and the evidence on these has not been appraised. As such the committee are not able to make recommendations in these areas.
NHS England	Guideline	034	005	Suggest include a section on complications and recognition of complications, e.g., subdural empyema.	Thank you for your comment. This guideline updated investigated review questions on long-term complications of bacterial meningitis and meningococcal disease. The recommendations informed by these reviews are in section 1.12. No evidence about subdural empyema was identified and as such it has not been included in the recommendations.
NHS England	Guideline	037	074	It would be nice to have a discharge checklist for clinicians to print off as an appendix with all these recommendations in.	Thank you for your comment. Production of a discharge checklist will be a matter for local implementation.
NHS England	Guideline	044	002	definition of senior - now with shape of training - it may more likely be ST3 and above.	Thank you for your comment. The text has been changed to ST3 or above.
NHS England	Guideline	045	012	There is a recommendation for research into the duration of antibiotic treatment for meningitis caused by Gram-negative bacteria. However, there are no such recommendations around research into the duration of treatment for other (or unknown) aetiologies. This is despite the recognition in the text that there was no evidence on which to guide these recommendations. Suggest this research recommendation is expanded across all causes of bacterial meningitis.	Thank you for your comment. The committee decided to prioritise only 5 key areas for research and focused the research recommendations on where they agreed there is the greatest need. Expanding this research question out to all causes of bacterial meningitis would need different research protocols for each cause.
NHS England	Guideline	045	012	There are no recommendations around research into alternative agents to 3rd generation cephalosporins for treatment of bacterial	Thank you for your comment. The committee decided to prioritise only 5 key areas for research

Meningitis (bacterial) and meningococcal disease: recognition, diagnosis and management

Consultation on draft guideline - Stakeholder comments table
01 September 2023 - 12 October 2023

Stakeholder	Document	Page No	Line No	Comments	Developer's response
				meningitis. Despite the lack of available evidence described within the guideline on this subject. This is especially important for patients with severe penicillin allergy. It also means that the entire antibiotic course must be given intravenously where there is no evidence to support this practice and there are many potential benefits in being able to switch patients to oral therapy. Suggest expanding the research recommendations to cover this area.	and focused the research recommendations on where they agreed there is the greatest need. Third generation cephalosporins as a treatment of bacterial meningitis was not prioritised as a research recommendation.
NHS England	Guideline	051	020	Did the committee review evidence that ceftriaxone is commonly available outside hospital settings?	Thank you for your comment. This statement is based on the expertise of the committee rather than the evidence. The rationale and impact text has been amended to clarify that when antibiotics need to be given outside of hospital, ceftriaxone is the preferred option because it is a more active agent. However, it is less commonly available outside of hospital. Therefore, benzylpenicillin is also recommended because it is commonly available and practical to use outside of hospital.
NHS England	Guideline	053	018	*It is important not to rule out bacterial meningitis based on a normal CRP, PCT or white blood cell count alone, because these are non-specific tests that can indicate a problem without making it clear what the problem is.* This statement does not make sense. If the test results are normal, it is their lack of sensitivity that presents a risk and hence the reason for not prematurely ruling out bacterial meningitis based on test results alone. Lack of specificity is a problem if the results are abnormal but may be abnormal for a reason other than bacterial meningitis.	Thank you for your comment. This text has been removed.

Meningitis (bacterial) and meningococcal disease: recognition, diagnosis and management

Consultation on draft guideline - Stakeholder comments table
01 September 2023 - 12 October 2023

Stakeholder	Document	Page No	Line No	Comments	Developer's response
NHS England	Guideline	058	024	Agree with the statement about the overuse of aciclovir in bacterial meningitis. Could the guidelines contain specific information on what clinical criteria indicate that HSV encephalitis should be strongly suspected. This would allow incorporation of this information in local guidelines and assist in practically reducing unnecessary antiviral use.	Thank you for your comment. Making recommendations about the presentation of herpes simplex encephalitis is outside the scope of this guideline.
NHS England	Guideline	061	017	If ceftriaxone is preferred over benzylpenicillin for meningococcal disease, should the out-of-hospital recommendation be amended to reflect this (page 015, line 08)? Should benzylpenicillin be removed?	Thank you for your comment. Benzylpenicillin is more practical to administer in the community and the committee considered that it was likely to be commonly available in emergency situations. Therefore it has been included as an option, even though ceftriaxone is the preferred option because it is the more active agent.
NHS England	Guideline	General	General	Please extend our gratitude to the committee and NICE colleagues for the considerable resource and expertise invested into producing this excellent guideline, that will undoubtedly improve the quality of care and clinical outcomes for patients with bacterial meningitis and meningococcal disease.	Thank you for your comment.
NHS England	Guideline	General	General	A statement about the role or lack of role of intraventricular or intrathecal antibiotics for the treatment of meningitis would be welcome. If this was out of scope, or if evidence was reviewed but was inconclusive, could this be stated?	Thank you for your comment. No evidence was found for intraventricular or intrathecal administration of antibiotics and so the committee did not make recommendations in these areas. We will pass your comment to the NICE surveillance team which monitor key events relevant to the guideline.

Meningitis (bacterial) and meningococcal disease: recognition, diagnosis and management

Consultation on draft guideline - Stakeholder comments table
01 September 2023 - 12 October 2023

Stakeholder	Document	Page No	Line No	Comments	Developer's response
NHS England	Guideline	General	General	Where corticosteroids are indicated, could a statement be added about the dexamethasone salt and dose? This is unlicensed and there is variation in clinical practice.	Thank you for your comment. Dose of dexamethasone was not part of the review question and therefore no recommendations have been made for this. The BNF and BNFC provide dose information and consequently doses are not normally included in NICE recommendations.
NHS England	Guideline	General	General	We strongly suggest the document makes reference to making reasonable adjustments. This is a legal requirement as stated in the Equality Act 2010. Adjustments aim to remove barriers, do things in a different way, or to provide something additional to enable a person to receive the assessment and treatment they need. Possible examples include; allocating a clinician by gender, taking blood samples by thumb prick rather than needle, providing a quiet space to see the patient away from excess noise and activity. We recommend including reference to the Reasonable Adjustment Digital Flag (RADF) and the RADF Information Standard which mandates all providers and commissioners of health services and publicly funded social care to identify, record, flag, share, meet and review Reasonable Adjustments, including details of their underlying conditions. DAPB4019: Reasonable Adjustment Digital Flag - NHS Digital	Thank you for your comment. Making reasonable adjustments as required by the Equality Act is a statutory requirement and so this requirement would not be repeated in each individual NICE guideline.
NHS England	Guideline	General	General	We recommend including reference to the importance of Communication: Using simple, clear language, avoiding medical terms and 'jargon' wherever possible. Some people may be non-	Thank you for your comment. We agree that people need to be communicated with in an appropriate way and given information in an appropriate format.

Meningitis (bacterial) and meningococcal disease: recognition, diagnosis and management

Consultation on draft guideline - Stakeholder comments table
01 September 2023 - 12 October 2023

Stakeholder	Document	Page No	Line No	Comments	Developer's response
				verbal and unable to describe verbally how they feel. Pictures may be a useful way of communicating with some people, but not all.	Further detail on communication and treating people as individuals is covered in the NICE guideline on Patient experience in adult NHS services: improving the experience of care for people using adult NHS services, and so this information is not repeated in all other NICE guidelines. This guidance is hyperlinked from section 1.3. In relation to this the committee also updated the signs and symptoms tables for headache and neck stiffness to include people with communication difficulties.
NHS England	Guideline	General	General	Please note recent LeDeR research: kcl.ac.uk/ioppn/assets/fans-dept/leder-main-report-hyperlinked.pdf	Thank you for providing us with this information.
NHS England	Guideline	General	General	Suggest include doses of drugs as this will save time when looking for guidance in an emergency setting. This reduces the number of pages the clinician will need to access and reduce cognitive load.	Thank you for your comment. The BNF and BNFC provide dose information and consequently doses are not normally included in NICE recommendations.
NHS England	Guideline	General	General	Safety netting – suggest give written information – easy read/ accessible version.	Thank you for your comment. A cross reference to recommendation 1.3.2 has been added to the section on safety-netting, as this already covers the information you suggest.
NHS England	General	General	General	I think that they should state at the start that the guideline does not apply to newborn babies on neonatal units and refer back to neonatal sepsis guidelines. The section on Abx is not correct for newborn/preterm infants (refers to ceftriaxone and cefotaxime	Thank you for your comment. The recommendations about antibiotics are not intended to apply to neonates. There is already a cross reference after recommendation 1.6.4 which directs

Meningitis (bacterial) and meningococcal disease: recognition, diagnosis and management

Consultation on draft guideline - Stakeholder comments table
01 September 2023 - 12 October 2023

Stakeholder	Document	Page No	Line No	Comments	Developer's response
				and we would use ben pen and gent for group B strep meningitis and there is potential for this to cause confusion). In general, the whole guideline is quite difficult to navigate for neonatologists to find the recommendations that do apply and differentiate from those that don't. I hope this isn't going to be a NICE trend whereby they start to produce disease related guidelines that cover all age groups as it means more work for clinicians to sift through to find the recommendations that are relevant to their specialty and then ensure those that are relevant are being met.	the reader to other NICE guidance which includes recommendations relevant to neonates. Following stakeholder feedback, recommendations about neonates have been removed from this guideline and included in the Neonatal Infection guideline instead so that all the guidance relevant to this population is in one place.
NHS England	General	General	General	No changes to best or current clinical practice that would have any impact on primary/community care.	Thank you for your comment.
NHS Grampian	Guideline	018 - 019	017 - 002	Simplifying the criteria for neuroimaging prior to LP down to three items is welcomed.	Thank you for your comment and support for the recommendation.
Paediatric Critical Care Society	Guideline	007	Table 1	We are concerned that assessing for pale skin in patients with brown, black or tanned skin may impact on equality and suggest also using clinical assessment with temperature of skin e.g. cool peripheries. Inconsolability is also a behaviour that could be described to ensure greater understanding and reduce risk of missed diagnosis.	Thank you for your comment. The committee thought that it is important to treat everyone equally and that all people should be checked for a rash. They agree that it can be difficult to see on people with brown, black or tanned skin and have made that comment in the notes section of the table. No evidence was identified for skin temperature as a sign and based on the committee's experience and expertise it was not added to the recommendations. The symptom for 'Altered behaviour' has been

Stakeholder	Document	Page No	Line No	Comments	Developer's response
					updated to 'Unusual behaviour'. The notes have been updated to state 'For example, the person may be agitated, aggressive or subdued' following a suggestion from another stakeholder. Where possible we have tried to match terms with the NICE guideline on Fever in under 5s. Inconsolable is not consistently used and the committee thought that 'inconsolable' would be covered by the term 'agitated'.
Paediatric Critical Care Society	Guideline	013	013	It could be challenging to implement safe and timely safety netting arrangements using 111/999 given the rapid nature of the disease and disadvantage those with poor access to GP services. Using advancing technology such as apps/ e-consultations and national sepsis initiatives would increase speed to assessment for re-presentation.	Thank you for your comment. The committee thought that this would be current practice for meningitis. The rationale and impact section note that safety netting helps mitigate the potential harms and costs of missed infections, and harms and costs from other serious conditions with similar symptoms and signs.
Paediatric Critical Care Society	Guideline	017	003	The recommendation is a senior clinical decision maker (ST4 and above) assesses initially. This is concerning for babies and children as the breadth of clinical experience may mean all symptoms and signs are not noticed as it is more nuanced in this group. Splitting assessment of babies, children away from young adults and adults to an expert level could minimise time to treatment.	Thank you for your comment. The definition of senior clinical decision maker for people under 18 has been kept as ST4 to ensure consistency with what has been recommended in the Sepsis guideline. This definition has also been amended to clarify that the clinician needs to have core competencies in the care of acutely ill children. However the committee did not think it was practical to split the assessment of babies and children as you suggest.
Paediatric Critical Care Society	Guideline	017	017	A bacterial throat swab would be challenging in a child; splitting the recommendations into age-appropriate groups to decrease time to antibiotics would be more user-friendly.	Thank you for your comment. The committee thought that in the circumstances you describe, getting a throat swab could be challenging.

Meningitis (bacterial) and meningococcal disease: recognition, diagnosis and management

Consultation on draft guideline - Stakeholder comments table
01 September 2023 - 12 October 2023

Stakeholder	Document	Page No	Line No	Comments	Developer's response
					However they were of the view that this is a routine standard of care and should still be done.
Paediatric Critical Care Society	Guideline	018 & 019	018 onwards	Features of raised intracranial pressure can be more subtle in babies and children. There is concern that emphasis on lumbar puncture prior to antibiotics in babies and children would cause delay to treatment or result in harm. Coagulation tests could be done to ensure these are satisfactory to decrease risk of harm.	Thank you for your comment. A recommendation has been added to clarify that if neuroimaging is required, antibiotics should be given prior to imaging.
Paediatric Critical Care Society	Guideline	031	General	These comments could be misleading as it is not specified if this includes the fluid management in the critically ill phase, which may be 2/3 or 80% of maintenance. There is no comment on type of fluid e.g balanced crystalloid solution. This might lead to a barrier in implementation due to lack of clarity.	Thank you for your comment. This guideline has not gone into the detail of intravenous fluid therapy as recommendations related to this are covered by the NICE guidelines on intravenous fluid therapy in adults (https://www.nice.org.uk/guidance/cg174) and intravenous fluid therapy in children and young people (https://www.nice.org.uk/guidance/ng29). Both of these are linked to at the end of the recommendations on fluid restriction.
Paediatric Critical Care Society	Guideline	031	013	The guideline states not to use other osmotic agents routinely in the management – this is misleading and again could a lack of clarity or understanding in situations where it could be appropriate e.g acute management of raised intracranial pressure.	Thank you for your comment. The recommendation for not routinely using other osmotic agents reflects that in most cases they should not be used in the management of bacterial meningitis. However the committee thought there might be some exceptional cases where this is needed. Your comment on raised intracranial pressure monitoring is covered by recommendation 1.9.7 which recommends getting specialist advice on intracranial pressure monitoring, if there are features of raised intracranial pressure or hydrocephalus.

Meningitis (bacterial) and meningococcal disease: recognition, diagnosis and management

Consultation on draft guideline - Stakeholder comments table
01 September 2023 - 12 October 2023

Stakeholder	Document	Page No	Line No	Comments	Developer's response
Paediatric Critical Care Society	Guideline	031	020	The guideline does not comment on other non-invasive methods of intracranial monitoring e.g. EEG monitoring/ PRX use.	Thank you for your comment. The guideline did not look at a review question on intracranial monitoring and so the committee are not able to make recommendations about methods of intracranial monitoring.
Paediatric Critical Care Society	Guideline	035	006	We agree with the need for psychosocial and family (including financial advice) support as well as also rehabilitation. Follow up should include multidisciplinary clinics (including plastics/ skin grafting). This may be costly to implement.	Thank you for this comment. Multidisciplinary clinics are not explicitly recommended in the guideline. Whilst the committee recognised that psychosocial and family support recommendations could be expensive to implement at the individual level, these recommendations will not represent a change in practice for all units and that the overall population covered by the recommendations is relatively small. Therefore, the committee believed that these recommendations would not present a significant resource impact to the NHS.
RCPCH	Guideline	004	019	Recommendation:1.1.1-When considering a diagnosis of bacterial meningitis or meningococcal disease, be aware that these: can occur at the same time, particularly in people with a rash Our comment: Rash is a part of clinical presentation of sever meningococcal infection rather than separated entities.	Thank you for your comment. The committee's view was that 'rash' is a symptom for both bacterial meningitis and meningococcal disease. The recommendation has been updated to make it clear that this bullet point is to highlight that 'meningitis and sepsis can occur at the same time, particularly in people with a rash'.
RCPCH	Guideline	005	020 - 021	1.1.5:haemorrhagic, non-blanching rash with lesions larger than 2 mm (purpura). Our comment even petechial lesions	Thank you for your comment. The committee thought that petechial rash would only be a marker for strongly suspecting meningococcal disease when it was rapidly progressive/spreading or combined with the signs and symptoms of bacterial meningitis. Therefore petechial rash has not been

Meningitis (bacterial) and meningococcal disease: recognition, diagnosis and management

Consultation on draft guideline - Stakeholder comments table
01 September 2023 - 12 October 2023

Stakeholder	Document	Page No	Line No	Comments	Developer's response
					added to the first bullet in the recommendation, but has been added to the 2nd and 3rd bullet points.
RCPCH	Guideline	007	001	Fever: our comment not all cases presented with fever in neonates and premature babies may be subtle or hypothermia..	Thank you for your comment. Following stakeholder feedback, recommendations about neonates have been removed from this guideline and included in the Neonatal Infection guideline instead so that all the guidance relevant to this population is in one place.
RCPCH	Guideline	018	017 - 018	Neuroimaging before lumbar puncture - Our comment: we support these recommendations as time factor is critical for commencing antibiotics and the outcome of patients with bacterial meningitis and meningococcal infection regarding mortality and cost factor.	Thank you for your comment.
RCPCH	Guideline	019	005 - 006	Lumbar puncture - Our comment: when performing lumbar puncture in order to avoid conning the professional must withdraw the stylet of the needle very carefully and slowly if he notices the CSF come under high pressure he must immediately stop and return the stylet back to the original position and cancelled the procedure. The other point, we recommend to perform lumbar puncture in emergency department or unit as mentioned above, the time factor is so important for the outcome of patients. We know the patient in our hospitals admit to emergency department for 24 hours then he may improve and discharged, passed or referred to inpatient wards so if a patient with meningitis postponed performing lumbar puncture until he referred to inpatient, that is mean a long delay in diagnosis, treatment with poor outcome.	Thank you for your comment. This is a guideline about meningitis and meningococcal disease and it would not be appropriate to include this level of detail about how to perform a lumbar puncture.
Scottish Antimicrobial	Guideline	014	002	1.1.17 - Suggest reference Group A Streptococcal infection here specifically. It is not uncommon for clinicians to focus on fever	Thank you for your comment. Group A Streptococcal infection would come under 'other

Meningitis (bacterial) and meningococcal disease: recognition, diagnosis and management

Consultation on draft guideline - Stakeholder comments table
01 September 2023 - 12 October 2023

Stakeholder	Document	Page No	Line No	Comments	Developer's response
Prescribing Group, Healthcare Improvement Scotland.				and headache in adolescents/ young adults specifically and not to examine the throat. Sore throat may be a late development in GAS infection therefore may be missed unless the throat is examined. This may lead to unnecessary lumbar puncture	forms of sepsis', which is already included in the recommendation.
Scottish Antimicrobial Prescribing Group, Healthcare Improvement Scotland.	Guideline	018	018	1.4.8 • Suggest also including papilloedema and GCS <= 12 as per BIA guidance and normal clinical practice LP – rules on anticoagulation should be highlighted (NOACS and WARFARIN) including when to reinstitute anticoagulation (see The UK joint specialist societies guideline on the diagnosis and management of acute meningitis and meningococcal sepsis in immunocompetent adults - Journal of Infection) This is important and practical.	Thank you for your comment. Looking for papilloedema could cause a delay to lumbar puncture. In the committee's view, papilloedema is relatively uncommon and in isolation, doesn't add anything to the assessment. Therefore it has not been added to the recommendation. GCS of 9 or less has been added to the recommendation. Providing details about effective anticoagulation for lumbar puncture is outside the scope of a guideline on meningitis and meningococcal disease.
Scottish Antimicrobial Prescribing Group, Healthcare Improvement Scotland.	Guideline	024	011	1.6.5 The guidance might be made a bit clearer with respect to use of cefotaxime when ceftriaxone is contra-indicated. I understand this only refers to contraindication due to incompatibility with calcium rather than any other contraindication e.g. allergy. If allergy to ceftriaxone then cefotaxime should also be avoided	Thank you for your comment. The contraindication for ceftriaxone is specific to pre-term babies under 41 weeks corrected gestational age (as specified in the brackets in the recommendation. A cross reference has been added to this section of the guideline to clarify that recommendations about people with antibiotic allergy are made in a different section of the guideline.
Scottish Antimicrobial Prescribing Group, Healthcare	Guideline	024	016	1.6.7 - Reference to Herpes encephalitis in neonate - the diagnosis is being missed in neonates and should be considered more. See UKPAS guidance Antimicrobial-Paediatric-Summary-UKPAS.pdf (uk-pas.co.uk)	Thank you for your comment. Neonates were not included in the evidence reviews relevant to this recommendation. Whilst not explicitly covering neonatal encephalitis, guidance on the recognition of early neonatal sepsis is available in the NICE guideline on Neonatal infection. Specific guidance

Meningitis (bacterial) and meningococcal disease: recognition, diagnosis and management

Consultation on draft guideline - Stakeholder comments table
01 September 2023 - 12 October 2023

Stakeholder	Document	Page No	Line No	Comments	Developer's response
Improvement Scotland.					on the recognition and management of neonatal herpes is not currently produced by NICE.
Scottish Antimicrobial Prescribing Group, Healthcare Improvement Scotland.	Guideline	026	027	1.6.13 – include additional sentence (in bold): • give ceftriaxone – ***Assuming sensitive organism – Meropenem is an alternative if Gram negative organism is Ceftriaxone resistant***	Thank you for your comment. Meropenem has been added as an option after discussion with an infection specialist.
Scottish Antimicrobial Prescribing Group, Healthcare Improvement Scotland.	Guideline	028	003	1.6.16 Often not practical to get advice acutely from infection specialist if outside hospital – should not delay administration	Thank you for your comment. The committee agreed that it would be difficult to get advice from an infection specialist if outside hospital. The cross reference to the recommendations on penicillin allergy has been removed from section 1.2 and replaced with a recommendation that in the case of serious antibiotic allergy, no antibiotics should be given outside hospital.
Scottish Antimicrobial Prescribing Group, Healthcare Improvement Scotland.	Guideline	032	004	1.9.1 Include 'over 3 months of age'	Thank you for your comment. The recommendation has been updated to state 'For people over 3 months….'. The committee did not want to completely rule out the use of dexamethasone in those under 3 months old. They were aware that a person just under 3 months may benefit from its use and they were not aware of any evidence that supports or refutes the use of dexamethasone in children between 28 days and 3 months. Therefore they have also added a recommendation to get infection specialist advice on using dexamethasone in children between 28 days and 3 months old with

Meningitis (bacterial) and meningococcal disease: recognition, diagnosis and management

Consultation on draft guideline - Stakeholder comments table
01 September 2023 - 12 October 2023

Stakeholder	Document	Page No	Line No	Comments	Developer's response
					strongly suspected or confirmed bacterial meningitis. A research recommendation has also been made for people under 3 months of age.
Scottish Antimicrobial Prescribing Group, Healthcare Improvement Scotland.	Guideline	032	006	1.9.2 - include additional sentence (in bold): Stop dexamethasone if the causative organism is not pneumococcal. ***Unless there are neurological signs in which case discuss with an infection specialist***. If no causative organism is found, get advice from an infection specialist on whether or not to continue dexamethasone."	Thank you for your comment. The committee thought there was no evidence to suggest that people with neurological signs would need a different approach to those without neurological signs. Therefore, they agreed that in their experience there was no need to treat this group differently.
Scottish Antimicrobial Prescribing Group, Healthcare Improvement Scotland.	Guideline	032	006	1.9.2 Patients with neurological complications of non-pneumococcal BM were under-represented in the clinical trials. It is not possible to generalise about use of steroids in non-Pneumococcal infection when neurological signs are present and such patients should be carefully assessed for corticosteroids and ideally discussed with an infection specialist.	Thank you for your comment. The committee thought there was no evidence to suggest that people with neurological signs would need a different approach to those without neurological signs. Therefore, they agreed that in their experience there was no need to treat this group differently.
Scottish Antimicrobial Prescribing Group, Healthcare Improvement Scotland.	Guideline	General	General	This is an excellent and useful document. Particularly good to see that allergy risk has been stratified allowing Ceftriaxone in non-severe penicillin allergy	Thank you for your comment and support for the recommendation.
UK Health Security Agency - Meningococcal Reference Unit	Guideline	017	020	Consider including '*Positive meningococcal cultures should be submitted to the appropriate meningococcal reference laboratory to help guide case/contact/outbreak management'.*	Thank you for your comment. The committee were of the view that doing this would be part of standard practice and therefore did not need to be recommended in the guideline.

Meningitis (bacterial) and meningococcal disease: recognition, diagnosis and management

Consultation on draft guideline - Stakeholder comments table
01 September 2023 - 12 October 2023

Stakeholder	Document	Page No	Line No	Comments	Developer's response
UK Health Security Agency - Meningococcal Reference Unit	Guideline	022	014	Consider including '*Positive meningococcal cultures should be submitted to the appropriate meningococcal reference laboratory to guide case/contact/outbreak management*'.	Thank you for your comment. The committee were of the view that doing this would be part of standard practice and therefore did not need to be recommended in the guideline.
UK Health Security Agency - Meningococcal Reference Unit	Guideline	022	024	It is unclear why serum (specifically) is saved. For example, it is less sensitive than EDTA blood for diagnostic PCRs?	Thank you for your comment. This recommendation has been deleted.
UK Health Security Agency - Meningococcal Reference Unit	Guideline	022	024	Consider inserting: *Request that EDTA blood is saved for use in possible further tests including PCR and Sequence based meningococcal characterisation (in absence of culture) to guide case/contact/outbreak management*.	Thank you for your comment. This recommendation has been deleted.
UK Health Security Agency - Meningococcal Reference Unit	Guideline	053	001	Consider adding '…provide information about the strain of *Neisseria meningitidis* **to guide case/contact/outbreak management'.**	Thank you for your comment. The text in this paragraph has been changed to reflect the point you have made.
UK Health Security Agency - Meningococcal Reference Unit	Guideline	053	003	Consider changing '*for long term monitoring purposes*' to '***to provide important information about the infecting strain to guide case/contact/outbreak management***'.	Thank you for your comment. This change has been made.
UK Health Security Agency - Meningococcal Reference Unit	Guideline	057	002	Consider changing '*for long term monitoring purposes*' to '***to provide important information about the infecting strain to guide case/contact/outbreak management***'.	Thank you for your comment. This change has been made.
UK Health Security Agency - Meningococcal Reference Unit	Guideline	058	003	Consider changing to '*Blood tests, **throat swabs,** and lumbar puncture*…'	Thank you for your comment. The recommendations are only for blood tests and lumbar puncture to be completed within one hour.

Meningitis (bacterial) and meningococcal disease: recognition, diagnosis and management

Consultation on draft guideline - Stakeholder comments table
01 September 2023 - 12 October 2023

Stakeholder	Document	Page No	Line No	Comments	Developer's response
					Therefore your suggested change has not been made.
UK Health Security Agency Immunisation Division	Guideline	004	009	In defining bacterial meningitis and meningococcal disease use the correct term septicaemia 'Recommendations on bacterial meningitis also cover meningococcal meningitis without meningococcal septicaemia. Recommendations on meningococcal disease cover meningococcal septicaemia with or without meningococcal meningitis.'	Thank you for your comment. The term 'Sepsis' is used to match the NICE guideline on Sepsis: recognition, diagnosis and early management (https://www.nice.org.uk/guidance/ng51). The committee also agreed that 'sepsis' is the current terminology and septicaemia is an old term.
UK Health Security Agency Immunisation Division	Guideline	005	018	Rec 1.1.5 consider mentioning that rash usually develops late in the disease progression & should not wait for this to arise. State this more strongly than in 1.1.6	Thank you for your comment. The committee thought that the rash can occur any time and not only develop late in the disease. There is a recommendation advising healthcare professionals not to rule out meningococcal disease just because a person does not have a rash.
UK Health Security Agency Immunisation Division	Guideline	010	001	1.1.11 consider asking family members about recent and **rapid** changes in symptoms	Thank you for your comment. The focus of this recommendation is recent changes so your suggested change has not been made.
UK Health Security Agency Immunisation Division	Guideline	010	004	1.1.12 would it be helpful to indicate that there may be a need to actively ask about these risk factors	Thank you for your comment. A bullet point has been added to the earlier recommendation that advises using family member and carer reports of symptoms when completing an assessment of signs, symptoms and risk factors. Asking about the presence of these risk factors would be necessary to implement this recommendation and therefore committee did not think it was necessary to specify this.
UK Health Security Agency	Guideline	012	003	1.1.14 would it be helpful to indicate that there may be a need to actively ask about these risk factors	Thank you for your comment. A bullet point has been added to the earlier recommendation that

Meningitis (bacterial) and meningococcal disease: recognition, diagnosis and management

Consultation on draft guideline - Stakeholder comments table
01 September 2023 - 12 October 2023

Stakeholder	Document	Page No	Line No	Comments	Developer's response
Immunisation Division					advises using family member and carer reports of symptoms when completing an assessment of signs, symptoms and risk factors. Asking about the presence of these risk factors would be necessary to implement this recommendation and therefore committee did not think it was necessary to specify this.
UK Health Security Agency Immunisation Division	Guideline	013	014	1.1.16 If you send a person home after clinical assessment for bacterial meningitis and**/or** meningococcal disease	Thank you for your comment. The NICE style is to avoid using 'and/or' in recommendations.
UK Health Security Agency Immunisation Division	Guideline	013	016	1.1.16 safety netting arrangements should be the default here ideally with written information – we have seen instances of people being sent home sometimes on more than one occasion and subsequently rapidly deteriorating	Thank you for your comment. The wording of the recommendation has been amended to clarify that safety-netting should happen. A cross reference to recommendation 1.3.2 has also been added which advises explaining 'which symptoms and signs to look out for, and what changes should prompt them to return to hospital' and advises directing people to online sources of information. There is also cross referral to the NICE guidelines on Patient experience in adult NHS services and Babies, children and young people's experience of healthcare. Both of these cover recommendations on communication including providing written and verbal information.
UK Health Security Agency Immunisation Division	Guideline	017	005	1.4.1 make this a more realistic recommendation 'antibiotics start as soon as possible and ideally within 1 hour …'	Thank you for your comment. The decision to recommend a 1 hour time frame for starting antibiotics in hospital was based on evidence indicating that early administration of antibiotics

Stakeholder	Document	Page No	Line No	Comments	Developer's response
					reduces mortality compared with later administration. Also that suspected bacterial meningitis is a medical emergency and there are potentially serious implications of a delay to treatment (including death). In the committee's experience, 1 hour within arrival in hospital is widely regarded as the golden hour for people with life threatening conditions requiring emergency care. This is already documented in the Rationale and Impact text of section 1.6 of the guideline and the Committee's discussion of the evidence section for Evidence Review C1. After consideration of stakeholder comments in this area, the committee decided to retain the existing time frame of giving antibiotics within 1 hour of arrival in hospital due to the reasons described above and that 1 hour should be enough time to stabilise the patient and take blood samples (for blood culture) and perform lumbar puncture. In addition this is a definitive time frame which will be auditable. These recommendations are in line with current guidance which recommendations antibiotics 'without delay'. The committee have amended the guideline to acknowledge that local pathways may need to be developed to streamline processes so that blood tests and lumbar puncture can be performed

Meningitis (bacterial) and meningococcal disease: recognition, diagnosis and management

Consultation on draft guideline - Stakeholder comments table
01 September 2023 - 12 October 2023

Stakeholder	Document	Page No	Line No	Comments	Developer's response
					quickly, enabling administration of antibiotics within 1 hour.
UK Health Security Agency Immunisation Division	Guideline	017	020	Consider including '*Positive meningococcal cultures should be submitted to the meningococcal reference laboratory to help guide case/contact/outbreak management'.*	Thank you for your comment. The committee were of the view that doing this would be part of standard practice and therefore did not need to be recommended in the guideline.
UK Health Security Agency Immunisation Division	Guideline	022	005	1.5.1 make this a more realistic recommendation 'antibiotics start as soon as possible and ideally within 1 hour …'	The decision to recommend a 1 hour time frame for starting antibiotics in hospital was based on suspected meningococcal disease being a medical emergency and there being potentially serious implications of a delay to treatment (including death). In the committee's experience, 1 hour within arrival in hospital is widely regarded as the golden hour for people with life threatening conditions requiring emergency care. This is already documented in the Rationale and Impact text of section 1.6 of the guideline and the Committee's discussion of the evidence section for Evidence Review C2. After consideration of stakeholder comments in this area, the committee decided to retain the existing time frame of giving antibiotics within 1 hour of arrival in hospital due to the reasons described above and that 1 hour should be enough time to stabilise the patient and take blood samples (for blood culture). In addition this is a definitive time frame which will be auditable. These

Stakeholder	Document	Page No	Line No	Comments	Developer's response
					recommendations are in line with current guidance which recommendations antibiotics 'without delay'. The committee have amended the guideline to acknowledge that local pathways may need to be developed to streamline processes so that blood tests can be performed quickly, enabling administration of antibiotics within 1 hour.
UK Health Security Agency Immunisation Division	Guideline	022	014	Consider including 'Positive meningococcal cultures should be submitted to the meningococcal reference laboratory to guide case/contact/outbreak management'.	Thank you for your comment. The committee were of the view that doing this would be part of standard practice and therefore did not need to be recommended in the guideline.
UK Health Security Agency Immunisation Division	Guideline	024	008	1.6.5 Consider highlighting that cases of meningococcal meningitis and other meningococcal disease should be notified as soon as suspected by a clinician to the proper officer in the UKHSA Health Protection Team so that appropriate public health assessment and actions can be undertaken see Guidance for public health management of meningococcal disease in the UK (publishing.service.gov.uk)	Thank you for your comment. A cross reference to this legislation has been added to the guideline.
UK Health Security Agency Immunisation Division	Guideline	024	008	1.6.5 Consider highlighting that Guidance for public health management of meningococcal disease in the UK (publishing.service.gov.uk) provides advice on chemoprophylaxis of IMD close contacts	Thank you for your comment. A cross reference to this legislation has been added to the guideline.
UK Health Security Agency Immunisation Division	Guideline	058	003	Consider changing to '*Blood tests, **throat swabs,** and lumbar puncture*…'	Thank you for your comment. The recommendations are only for blood tests and lumbar puncture to be completed within one hour. Therefore your suggested change has not been made.

Meningitis (bacterial) and meningococcal disease: recognition, diagnosis and management

Consultation on draft guideline - Stakeholder comments table
01 September 2023 - 12 October 2023

Stakeholder	Document	Page No	Line No	Comments	Developer's response
University College London	Guideline	015	004	1.2.3-1.2.4 Many (?the majority) of ambulance crews are staffed by technicians rather than paramedics who are not trained to give antibiotics. From my (informal) discussions with GPs, many do not carry ceftriaxone. Thankfully, the incidence of meningococcal disease in the UK is now low https://www.gov.uk/government/publications/meningococcal-disease-laboratory-confirmed-cases-in-england-in-2021-to-2022/invasive-meningococcal-disease-in-england-annual-laboratory-confirmed-reports-for-epidemiological-year-2021-to-2022. Only 205 cases were reported to UKHSA during 2021-22 with a mortality rate of 6%. There has also been a continuing decline over the last 20 years. Is it justified, therefore, to mandate its administration and, crucially, the lack of evidence to support this recommendation as demonstrated in the Evidence Reviews [C1] and [C2]? Out-of-hospital antibiotics for bacterial sepsis also shows no benefit (Alam, Lancet Resp Med doi: 10.1016/S2213-2600(17)30469-1). Would it be better to suggest "If invasive meningococcal disease is highly suspected and where combined transfer and handover times to an emergency department is >1 hour, consider giving ceftriaxone if trained and equipped to administer antibiotics?" (or such-like)	Thank you for your comment. The recommendations in section 1.2 have been amended to make it clearer that the priority when someone is suspected of having bacterial meningitis or meningococcal disease is to transfer them to hospital as an emergency. Whilst the evidence reviewed did not suggest a benefit of pre-hospital antibiotics for meningococcal disease, the rapid progression and seriousness of this condition prompted the committee to recommend pre-hospital antibiotics for those people where meningococcal disease is strongly suspected. In circumstances where antibiotics do need to be administered outside of hospital, the committee recommended either ceftriaxone or benzylpenicillin. Ceftriaxone is the preferred option because it is a more active agent. However, it is less commonly available outside of hospital. Therefore, benzylpenicillin is also recommended because it is commonly available and practical to use outside of hospital. Alam was not included in the evidence for this update because it did not meet the population criteria (included patients with sepsis that was not restricted to meningococcal disease)
University College London	Guideline	017	005	1.4.1 "Start antibiotics within 1 hour of arriving in hospital" - Evidence Reviews [C1] and [C2] do not support this recommendation. AoMRC recommendations suggest a maximum window based on NEWS2 score ranging from 1 hour	Thank you for your comment. The committee noted that the timeframes given in the AoMRC recommendations are for sepsis. This recommendation is for when bacterial meningitis is

Stakeholder	Document	Page No	Line No	Comments	Developer's response
				for high-risk (NEWS ≥7) to 6 hours for low-risk (NEWS2 1-4). These are maxima; antibiotics can be started earlier if the diagnosis of bacterial sepsis is obvious. In the case of meningitis, the red flag criteria (rash, meningism etc could be used). A logistical problem with '1 hour of arriving in hospital' is that this depends on triage – patients with milder (or non-specific) symptoms may be kept waiting in the ED waiting room for hours before being seen. Consider changing to 'time from diagnosis'.	strongly suspected and therefore do not need to be the same as the AoMRC recommendations. The decision to recommend a 1 hour time frame for starting antibiotics in hospital was based on evidence indicating that early administration of antibiotics reduces mortality compared with later administration. Also that suspected bacterial meningitis is a medical emergency and there are potentially serious implications of a delay to treatment (including death). In the committee's experience, 1 hour within arrival in hospital is widely regarded as the golden hour for people with life threatening conditions requiring emergency care. This is already documented in the Rationale and Impact text of section 1.6 of the guideline and the Committee's discussion of the evidence section for Evidence Review C1. After consideration of stakeholder comments in this area, the committee decided to retain the existing time frame of giving antibiotics within 1 hour of arrival in hospital due to the reasons described above and that 1 hour should be enough time to stabilise the patient and take blood samples (for blood culture) and perform lumbar puncture. In addition this is a definitive time frame which will be auditable. These recommendations are in line with

Stakeholder	Document	Page No	Line No	Comments	Developer's response
					current guidance which recommendations antibiotics 'without delay'. The committee have amended the guideline to acknowledge that local pathways may need to be developed to streamline processes so that blood tests and lumbar puncture can be performed quickly, enabling administration of antibiotics within 1 hour.
University College London	Guideline	017	012	1.4.2 Diagnostics – I was brought up to sample from petechiae/purpura (inject small amount of saline, aspirate and send for MC&S). The literature suggests this provides a higher yield than blood cultures, even post-antibiotics. It's quick, simple and relatively painless. Any reason why this is not incorporated??	Thank you for your comment. The test you mention was not included in the review questions covered by the guideline and therefore the evidence on it has not been appraised. Consequently the committee are not able to make any recommendations in this area.
University College London	Guideline	022	005	1.5.1 – identical query to Point 3 above (re: 1.4.1). No evidence to support this and does not align to AoMRC recommendations.	Thank you for your comment. The committee noted that meningococcal disease is at the more severe end of sepsis 'spectrum'. Therefore the timeframe of 1 hour for starting antibiotics recommended in this guideline is consistent with the 1 hour for high-risk recommended by the AoMRC. The decision to recommend a 1 hour time frame for starting antibiotics in hospital was based on suspected meningococcal disease being a medical emergency and there being potentially serious implications of a delay to treatment (including death). In the committee's experience, 1 hour within arrival in hospital is widely regarded as the golden

Stakeholder	Document	Page No	Line No	Comments	Developer's response
					hour for people with life threatening conditions requiring emergency care. This is already documented in the Rationale and Impact text of section 1.6 of the guideline and the Committee's discussion of the evidence section for Evidence Review C2. After consideration of stakeholder comments in this area, the committee decided to retain the existing time frame of giving antibiotics within 1 hour of arrival in hospital due to the reasons described above and that 1 hour should be enough time to stabilise the patient and take blood samples (for blood culture). In addition this is a definitive time frame which will be auditable. These recommendations are in line with current guidance which recommendations antibiotics 'without delay'. The committee have amended the guideline to acknowledge that local pathways may need to be developed to streamline processes so that blood tests can be performed quickly, enabling administration of antibiotics within 1 hour.
University College London	Guideline	024	010	1.6.5 (and repeated) The phrasing confused me .. advises to give cefuroxime if ceftriaxone contraindicated. But this only applies to preterm babies. Only later did I realise this was not referring to cephalosporin allergy when I got to the severe penicillin allergy/anaphylaxis section (1.6.16) 4 pages later.	Thank you for your comment. A cross reference has been added to this section of the guideline to clarify that recommendations about people with antibiotic allergy are made in a different section of the guideline.

Meningitis (bacterial) and meningococcal disease: recognition, diagnosis and management

Consultation on draft guideline - Stakeholder comments table
01 September 2023 - 12 October 2023

Stakeholder	Document	Page No	Line No	Comments	Developer's response
University College London	Guideline	025	003	Very confusing recommendations .. so 10 days *minimum* for Pneumococcus, 7 for Haemophilus, 14 for Group B strep, 21 days for Gram-negative bacteria, 21 days for listeria, 5 days for Meningococcus. Why this huge variation? Why should 5-7 days be OK for meningococcus and haemophilus (which are Gram negative bacteria) but 21 days for '(unspecified) Gram negative bacteria'? The evidence reviews show no decent evidence for most of these recommendations (except meningococcus) and even haemophilus in one RCT showed 5 days as good as 10 yet the committee still went for 7 minimum? Also, the evidence base is mainly on babies/small children that are being extrapolated to adults thus questions about neurological development do not apply. Wouldn't it be better to be pragmatic – e.g. if the patient has made a good, full recovery after 5 days consider stopping. If not, re-look for a cause eg cerebral abscess and consider continuing or modifying regimen..	Thank you for your comment. As documented in the rationale and impact section, there was very little evidence on duration of antibiotics. Given this the committee recommended treatment lengths based on current practice and their experience. They did not think it was appropriate to recommend significant changes to current practice given the lack of evidence.
University College London	Guideline	030	004	1.7.2 – Recommends stopping antibiotic for meningococcal disease at 5 days .. or 7 if not recovered by 5 days. I find this rather odd – meningococcus is generally v sensitive to ceftriaxone in the UK at present, and susceptibilities will be known after 2 days to confirm such. So rather than just giving another empirical 2 days, shouldn't the cause for failure to recover after 5 days be investigated rather than simply giving 2 more days of a/b?	Thank you for your comment. The recommendation has been amended to state that if the person has not recovered after 5 days, advice should be sought from an infection specialist.
University College London	Guideline	032	006	1.9.2 – recommends only continue steroids for Pneumococcus. But hasn't benefit also been shown for hearing loss in Haemophilus? (see Corticosteroids for acute bacterial meningitis.*Cochrane Database Syst Rev.* 2013; 9CD004405)	Thank you for your comment. The recommendation has been amended to include Haemophilus influenzae type b.

Meningitis (bacterial) and meningococcal disease: recognition, diagnosis and management

Consultation on draft guideline - Stakeholder comments table
01 September 2023 - 12 October 2023

Stakeholder	Document	Page No	Line No	Comments	Developer's response
				Also see https://www.thelancet.com/journals/lancet/article/PIIS0140-6736%2821%2902662-3/fulltext	
University College London	Guideline	General	General	Overall, a clear document but there are some points that need challenging in terms of evidence base or practicality/implementation. Importantly, the guidelines should also align with current revision of NG51 sepsis guidelines that are adopting the AoMRC recommendations on initial antibiotic use. Clearly, there should not be any unnecessary delay in treating meningococcus or meningococcal disease but this applies for any patient with bacterial sepsis. Why should meningococcus be treated differently, especially as the evidence base in terms of treatment timings/delays and outcomes does not indicate any difference between this organism and other similar?	Thank you for your comment. The committee noted that the timeframes given in the AoMRC recommendations are for sepsis. This guideline is about bacterial meningitis and meningococcal disease and therefore does not need to make the same recommendations about antibiotic use as the AoMRC recommendations. The decision to recommend a 1 hour time frame for starting antibiotics in hospital was based on evidence indicating that early administration of antibiotics reduces mortality compared with later administration. Also that suspected bacterial meningitis is a medical emergency and there are potentially serious implications of a delay to treatment (including death). In the committee's experience, 1 hour within arrival in hospital is widely regarded as the golden hour for people with life threatening conditions requiring emergency care. This is already documented in the Rationale and Impact text of section 1.6 of the guideline and the Committee's discussion of the evidence section for Evidence Review C1.
University College London	Guideline	General	General	You asked "Given the expansion of the population covered by this guideline NICE is considering splitting the final published guideline by age group. This would result in some duplication of recommendations, but it is thought that it could improve the	Thank you for your comment. Following stakeholder feedback, recommendations about neonates have been removed from this guideline and included in the Neonatal Infection guideline instead so that all

Meningitis (bacterial) and meningococcal disease: recognition, diagnosis and management

Consultation on draft guideline - Stakeholder comments table
01 September 2023 - 12 October 2023

Stakeholder	Document	Page No	Line No	Comments	Developer's response
				usability of the guideline. Do you agree with this approach and if so, can you suggest appropriate age groups?" My. Response: yes … I would divide into neonates, children, teenagers and adults. And the recommendations can be tailored accordingly . e.g. see point 8 above.	the guidance relevant to this population is in one place.
University College London Hospital NHS Foundation Trust	Guideline	004	019	This is confusing wording. It is unclear if it means that more than one type of bacterial meningitis can co-exist, which would be vanishingly rare. We suggest 'can occur at the same time as other infections' if that is what is meant.	Thank you for your comment. The wording of the recommendation has been amended to state 'meningitis and sepsis can occur at the same time, particularly in people with a rash'.
University College London Hospital NHS Foundation Trust	Guideline	006	007	Points 1.14 and 1.16 on page 5 already highlight the possible absence of red flag symptoms or rash. This statement is confusing and we suggest it is removed.	Thank you for your comment. The recommendations have been revised to prevent any confusion.
University College London Hospital NHS Foundation Trust	Guideline	007 - 009	Table 1 & 2	Many of these symptoms are extremely non-specific and largely representative of being unwell with any bacterial infection, or sepsis. 'Ill appearance' for example feels unhelpfully general and should surely be listed lower than, for example, photophobia. There would also be better ways of presenting this information, particularly prioritising by how important, and/or specific, the symptoms and signs are.	Thank you for your comment. The committee agree that the symptoms are non-specific and can be difficult to distinguish from other infections. They have highlighted this in the first recommendation of the guideline. There is no consistent terminology used to describe all symptoms and the committee came to a view on what they thought would be most helpful to readers. They decided that the term 'Ill appearance' would help healthcare professionals identify people at risk of bacterial meningitis or meningococcal disease. The committee noted the evidence was not available to create a priority order for these

Meningitis (bacterial) and meningococcal disease: recognition, diagnosis and management

Consultation on draft guideline - Stakeholder comments table
01 September 2023 - 12 October 2023

Stakeholder	Document	Page No	Line No	Comments	Developer's response
					symptoms. Therefore the categories of symptoms have been put in alphabetical order to avoid implying any kind of prioritisation.
University College London Hospital NHS Foundation Trust	Guideline	011 – 012	Table 3	Again, this table is unwieldy and contains lot of non-specific signs. It duplicates large amounts of tables 1&2. We feel this could be excluded or reduced to highlight any specific features of meningococcal disease.	Thank you for your comment. The committee thought it was better to have separate sections for both conditions. This would ensure that if a healthcare professional is interested in noting all the symptoms and signs for one of the conditions (e.g. meningococcal disease) they are listed together in one table.
University College London Hospital NHS Foundation Trust	Guideline	012	003	Could this be summarised in a table alongside risk factors for meningitis (with separate column for those only applicable to meningitis) as many overlap?	Thank you for your comment. The committee thought it was better to have separate sections for both conditions. This would ensure that if a healthcare professional is interested in noting all the symptoms and signs for one of the conditions (e.g. meningococcal disease) they are listed together in one table.
University College London Hospital NHS Foundation Trust	Guideline	022	001 - 028	Section 1.5 duplicates almost exactly the investigations for bacterial meningitis (section 1.4). We suggest sections 1.4 and 1.5 are combined.	Thank you for your comment. The structure throughout the guideline is to have separate sections on bacterial meningitis and meningococcal disease so it is easier for the reader to find the relevant recommendations.
University College London Hospital NHS Foundation Trust	Guideline	024	011	This is unclear. We suggest changing to 'if ceftriaxone is contraindicated due to gestational age under 41 weeks'. Cefotaxime is not a safe substitution if, for example, ceftriaxone is contraindicated due to allergy. The same point applies to page 26 lines 1, 9 and 20, and to page 27 lines 1 and 16.	Thank you for your comment. A cross reference has been added to this section of the guideline to clarify that recommendations about people with antibiotic allergy are made in a different section of the guideline.
University College London	Guideline	032	001	We suggest that this section should come after section 1.7 on antibiotics, and before the section of fluid restriction, given this is	Thank you for your comment. This change has been made.

Meningitis (bacterial) and meningococcal disease: recognition, diagnosis and management

Consultation on draft guideline - Stakeholder comments table
01 September 2023 - 12 October 2023

Stakeholder	Document	Page No	Line No	Comments	Developer's response
Hospital NHS Foundation Trust				a recommended intervention that should occur alongside antibiotic therapy, and the section on fluid restriction includes only negative recommendations.	
University College London Hospital NHS Foundation Trust	Guideline	General	001 - 074	Overall, the document is very long and somewhat unwieldy and repetitive. We are not sure that it would boost a clinician's ability to diagnose meningitis acutely, particularly due to the inclusion of many non-specific symptoms, signs and risk factors. There is also no summary algorithm, which would be useful.	Thank you for your comment. Changes have been made to the structure of the guideline to try and improve its readability.