NATIONAL INSTITUTE FOR HEALTH AND CARE EXCELLENCE

HEALTH AND SOCIAL CARE DIRECTORATE

QUALITY STANDARD CONSULTATION

SUMMARY REPORT

1 Quality standard title

Sepsis

Date of quality standards advisory committee post-consultation meeting:
04 May 2017

2 Introduction

The draft quality standard for sepsis was made available on the NICE website for a 4-week public consultation period between 10 March and 07 April 2017. Registered stakeholders were notified by email and invited to submit consultation comments on the draft quality standard. General feedback on the quality standard and comments on individual quality statements were accepted.

Comments were received from 33 organisations, which included service providers, national organisations, professional bodies and others.

This report provides the quality standards advisory committee with a high-level summary of the consultation comments, prepared by the NICE quality standards team. It provides a basis for discussion by the committee as part of the final meeting where the committee will consider consultation comments. Where appropriate the quality standard will be refined with input from the committee.

Consultation comments that may result in changes to the quality standard have been highlighted within this report. Comments suggesting changes that are outside of the process have not been included in this summary. The types of comments typically

not included are those relating to source guidance recommendations and suggestions for non-accredited source guidance, requests to broaden statements out of scope, requests to include thresholds, targets, large volumes of supporting information, general comments on the role and purpose of quality standards and requests to change NICE templates. However, the committee should read this summary alongside the full set of consultation comments, which are provided in appendices 1, 2 and 3.

3 Questions for consultation

Stakeholders were invited to respond to the following general questions:

1. Does this draft quality standard accurately reflect the key areas for quality improvement?

2. Are local systems and structures in place to collect data for the proposed quality measures? If not, how feasible would it be to be for these to be put in place?

3. Do you have an example from practice of implementing the NICE guideline(s) that underpins this quality standard? If so, please submit your example to the NICE local practice collection on the NICE website. Examples of using NICE quality standards can also be submitted.

4. Do you think each of the statements in this draft quality standard would be achievable by local services given the net resources needed to deliver them? Please describe any resource requirements that you think would be necessary for any statement. Please describe any potential cost savings or opportunities for disinvestment.

Stakeholders were also invited to respond to the following statement specific questions:

5. For draft quality statement 1: Given that the definition of suspected sepsis is broad, can we be more specific about which people should be assessed?

6. For draft quality statement 3: Is it clear from draft statement 3 that the full course of antibiotics should be delivered within 1 hour?

4 General comments

The following is a summary of general (non-statement-specific) comments on the quality standard.

- Stakeholders welcomed the development of this quality standard and the contribution it can make to greater awareness of sepsis. However, they also felt there could be specific aspects of the quality standard which raise awareness amongst healthcare professionals and the public.
- The NICE guidance on sepsis is complex which has also carried through to the draft quality standard. In particular secondary care services have found it difficult to implement NG51 and tools have been developed to aid in its implementation. These tools should be referenced explicitly in the quality standard. Conversely some stakeholders felt that tools that have been highlighted in the draft quality standard, such as the National Early Warning Score (NEWS), should not be referenced as they are not applicable to all settings and populations.
- Agreement over the prioritisation of early recognition and timely treatment, due to current poor outcomes for people with sepsis. However, the full care bundle for sepsis should be delivered in a timely manner and not just the areas highlighted within the draft quality standard.
- It may be of benefit to split populations who are at an increased risk of sepsis, such as children and older people, given their different physiological parameters and complex management.
- The draft quality standard does not recognise the contribution made by ambulance services in the early identification and treatment of sepsis, as the quality improvement areas largely focus on clinical presentation in acute settings.
- The quality standard should explicitly make reference to the NICE guidance and quality standard on antimicrobial stewardship.

Consultation comments on data collection

- It will be challenging to collect data on the draft quality statements. It is possible in secondary care services that have linked electronic patient records and electronic prescribing systems, but in many trusts which are only partially electronic, data collection will be resource intensive.
- It will be challenging to collect this data in ambulatory care services as they are reliant on data links to secondary care systems.

Consultation comments on resource impact

- Resource impact will depend on provision of local services. Many larger acute trusts are likely to have the resources in place, but some smaller regional trusts may find it difficult to implement the full quality standard.
- The need to review people with sepsis and treat them with antibiotics and IV fluids all within 1 hour is challenging.

5 Summary of consultation feedback by draft statement

5.1 Draft statement 1

People with suspected sepsis are assessed to stratify risk of severe illness or death using a structured set of observations.

Consultation comments

Stakeholders made the following comments in relation to draft statement 1:

- This statement will be difficult to implement in a time critical manner and therefore stakeholders suggested the use of NEWS to help implementation. They felt that NEWS should be used to stratify risk for adults in an emergency setting, and that it was common practice in secondary care. However, stakeholders highlighted that while NEWS was preferential to ensure measurement, it is not applicable to all setting or populations. NEWS is not validated in primary care and cannot be used to stratify risk in children. A stakeholder therefore felt that it was appropriate to

leave the statement with structured set of observations that could be agreed locally.

- Using NEWS is not specific to sepsis, it is used to identify any acutely unwell people.
- Separate the populations into children and adults, given the different physiological parameters that children may have.
- Not all of the structured observations can be recorded outside of an emergency department. This may be due to people not presenting face to face or those in primary care not having access to physiological tests.
- Additional observations should be recorded to stratify risk such as:
  - fluid balance
  - pneumonia
  - peritonitis
  - meningitis
  - blood sugar

Consultation question 5

Stakeholders made the following comments in relation to consultation question 5:

- As well as being difficult to do, this population should not be defined any further, as by excluding people at this stage you are likely to miss sepsis.
- Where a population could be defined this could be done using NEWS or other tools, it could also focus on people:
  - who have been assessed for infection
  - with abnormal vital signs
  - with onset of confusion
  - who have had a sudden deterioration in daily living
  - who have had clinician and/or parental concern.

5.2 Draft statement 2

People with suspected sepsis in acute hospital settings and at least 1 criteria indicating high risk of severe illness or death are reviewed by a senior clinical decision-maker within 1 hour of risk being identified.

Consultation comments

Stakeholders made the following comments in relation to draft statement 2:

- This draft quality statement will have significant resource impact, due to potentially large numbers of people being identified as high risk, and the level of clinician who is then required to review.
- The risk factors used will identify too many people and alternatively NEWS could be used to highlight those at highest risk.
- The "senior clinical decision maker" definition may be incorrect. For antibiotic prescribing and review stakeholders suggested the following:
  - F1/F2 and CT1/2 medics
  - advanced nurse practitioners with specialist training in sepsis or critical care

  In addition "senior" may not be the most appropriate word, "competent" could be used.
- While for children it may be that a paediatric qualified doctor of ST4 level or equivalent is required, they will not be available in all acute trusts and certainly not within 1 hour.
- This draft quality statement could focus on senior review of people taking antibiotics, to reduce resource impact, with the outcome of reducing the use of broad spectrum antibiotics.
- An additional review would be required by a consultant level clinician in people who are not responding to treatment.
- The timescale of "within 1 hour of risk being identified" is not clear. Sepsis may be identified pre-hospital and if 1 hour starts from admission it could lead to delays in treatment.

5.3 Draft statement 3

People with suspected sepsis in acute hospital settings and at least 1 criteria indicating high risk of severe illness or death have antibiotic treatment within 1 hour of risk being identified.

Consultation comments

Stakeholders made the following comments in relation to draft statement 3:

- This draft statement may hinder efforts to improve antimicrobial stewardship, due to potentially large numbers of people being identified as high risk and the subjective nature of some of these risk factors. As a result of implementing this statement services may administer broad spectrum antibiotics.
- The risk factors used will identify too many people and alternatively NEWS could be used to highlight those at highest risk.
- Only appropriate antibiotics should be prescribed, this draft quality statement should reference what these are. This would prevent the use of broad spectrum antibiotics.
- The draft quality statement should include the taking of blood cultures before the administration of antibiotics and for their use to be reviewed at 48 hours, to enable inappropriate use to be stopped.
- This may be difficult to measure as it relies heavily upon electronic prescribing data.
- It should be clear that antibiotic treatment should only take place after the senior review in draft statement 2, as the senior clinician would triage people and whether they require antibiotics.
- The skills may not be available within primary care to deliver intravenous antibiotics.
- The timescale of “within 1 hour of risk being identified” is not clear. Sepsis may be identified pre-hospital and if 1 hour starts from admission it could lead to delays in treatment.

Consultation question 6

Stakeholders made the following comments in relation to consultation question 6:

- It was not clear that the full course of antibiotics should be delivered within 1 hour. In addition stakeholders felt that that it is not feasible or desirable to deliver the full course within an hour as not all antibiotics can or should be delivered within 1 hour. It may be feasible to provide the full dose within 1 hour which should be differentiated from the full course.
- Stakeholders took this statement to mean that antibiotics start within an hour.

5.4 Draft statement 4

People with suspected sepsis in acute hospital settings, at least 1 criteria indicating high risk of severe illness or death, and with lactate over 2 mmol/litre, have an intravenous fluid bolus within 1 hour of risk being identified.

Consultation comments

Stakeholders made the following comments in relation to draft statement 4:

- It may not be appropriate to base the provision of IV fluid bolus on lactate over 2 mmol/litre. Aggressive fluid therapy can be harmful and lead to poorer outcomes.
- The statement should focus on people with hypotension and tachycardia or use a higher lactate threshold such as 4mmol/litre.
- The type and volume of IV fluid should be defined.
- It may not be possible to record lactate in certain services, and where it can it would not be possible within 1 hour.
- Lactate is not a reliable measure in children.
- The statement will not contribute to improving outcomes in septic shock or heart failure.
- The timescale of “within 1 hour of risk being identified” is not clear. Sepsis may be identified pre-hospital and if 1 hour starts from admission it could lead to delays in treatment.

5.5 Draft statement 5

People who have been seen by a healthcare professional and assessed as at low risk of sepsis are given information about symptoms to monitor and how to access medical care.

Consultation comments

Stakeholders made the following comments in relation to draft statement 5:

- While safety netting is required and is a welcome inclusion it should be a basic principle of care for all clinical conditions and therefore may not be specific to sepsis.
- Any information leaflets should be nationally standardised to ensure everyone is receiving the appropriate information.
- Who is classed as low risk of sepsis, this could be all presentations in emergency care. A definition is required, such as people who have a confirmed infection but not sepsis.
- This draft quality statement should be specific in that it applies to all settings not just acute care. Additionally a stakeholder suggested not everyone will be “seen” as some may have been assessed remotely such as using 111.

6 Suggestions for additional statements

The following is a summary of stakeholder suggestions for additional statements.

- The ‘Sepsis Six’ could be used as a pathway which helps to implement the NICE guidance.
- Acute care settings could have a sepsis “champion”, such as a lead nurse, to lead best practice treatment for sepsis.
- Providers should run training workshops to improve the recognition of sepsis among healthcare professionals.
- The guidance and draft quality standard do not address post-sepsis syndrome and follow up of people with sepsis, which needs to be better understood.
- The draft quality standard could focus on sepsis in those most at risk, such as neutropenic sepsis in people receiving cancer treatment and sepsis in pregnancy.
- For people with suspected sepsis it is important to take blood cultures before antibiotics are given. This would prevent broad spectrum antibiotics being administered.
- A separate statement on reviewing antibiotics use could ensure that antibiotics are stopped when they are not necessary.
- Important to identify and treat the source of infection as without interventions such as surgical drainage sepsis may not effectively be resolved.
- The use of phenotype and genotype testing in order to improve the precision in managing sepsis.

Appendix 1: Quality standard consultation comments table – registered stakeholders

ID	Stakeholder	Statement number	Comments[1]
001	All-Party Parliamentary Group on Sepsis	General	The All-Parliamentary Group (APPG) on Sepsis welcomes this draft Quality Standard and the important step this takes towards wider awareness of sepsis and the importance of diagnosing and treating this condition appropriately.
002	All-Party Parliamentary Group on Sepsis	General	The Group welcomes the focus on healthcare professional awareness. The group believes that in order for any changes to be implemented there needs to be further awareness around sepsis, both in healthcare settings and in the wider public. This awareness needs to be for carers of both adults and children.
003	Association of Anaesthetists of Great Britain & Ireland	General	No comments to make on guideline
004	Becton Dickenson (BD)	General	Becton Dickenson (BD) welcomes this draft Quality Standard and the wider awareness that this will bring. BD is committed to supporting the widest understanding and awareness of this condition. BD believes that the delivery of rapid diagnosis through broad public and Healthcare Professional awareness with resulting targeted treatment is critical to delivering the NHS's key objectives to accurately diagnose and effectively treat sepsis.
005	Becton Dickenson (BD)	General	BD welcomes the focus on healthcare professional awareness. BD believes that in order for any changes to be implemented there needs to be further public awareness around sepsis, and better awareness in the healthcare environment. This awareness needs to be for professionals supporting children and adults.
006	Becton Dickenson (BD)	General	BD welcomes the recognition of the critical timeframes that people need to be managed effectively when suspected with sepsis. Public Health England's UK Standards for Microbiology Investigations guidance 2014 defines this critical window and the guideline should reference this resource. It should also reference EI National clinical guideline #6 (sepsis management, November 2014) published by the Department of Health Ireland (National Clinical Safety committee).
007	Becton Dickenson (BD)	General	BD would welcome a reference to 'Red Flag' sepsis, the tool introduced by the UK Sepsis Trust in 2015. This tool supports the identification and management for people potentially within the highest risk criteria.
008	British Infection Association	General	The draft quality standard is based on 2016 NICE Sepsis guidelines. These guidelines have generated a significant debate among stakeholders nationally. This is particularly true in secondary care settings, where there is a widely held view that the guidelines are overly complex, that the evidence to support their complexity is limited, and that this complexity presents significant barriers to operationalization without clear evidence of benefit. Particularly problematic are the amber criteria for adults in secondary care; the paediatric secondary care guidelines; and failure to include

[1]PLEASE NOTE: Comments received in the course of consultations carried out by NICE are published in the interests of openness and transparency, and to promote understanding of how quality standards are developed. The comments are published as a record of the submissions that NICE has received, and are not endorsed by NICE, its staff or its advisory committees.

ID	Stakeholder	Statement number	Comments[1]
			neutropaenic sepsis/febrile neutropaenia in the high risk pathway. As a result, in a recent national survey carried out the Patient Safety Collaborative National Sepsis Cluster through the AHSNs, only a minority of Trusts (24% for adults, 17% for paediatrics) reported that they and their organisations are following / plan to follow the NICE guidance as published. There is reasonable evidence that early antimicrobials are associated with better outcomes in severe infections, so quality standards around early antibiotic delivery for the sickest group of patients seem appropriate. The evidence in less sick patients and for other parts of the bundle of care is much more limited, and needs to be balanced against the risks of unnecessary antibiotic use and antimicrobial resistance.
009	Great North Children's Hospital Newcastle upon Tyne Foundation Hospitals Trust	General	We believe that current protocols, particularly those including physiological parameters triggering escalation require robust underpinning with data in paediatrics. Evidence based algorithms need to aid but not replacing clinical judgment. The new NICE guidelines would benefit from validation and adjustment.
010	Great North Children's Hospital Newcastle upon Tyne Foundation Hospitals Trust	General	Following NICE guidance may lead to over triggering of sepsis alerts in children with subsequent increased use of invasive tests and IV antibiotics, potentially leading to poor antibiotic stewardship and the increased risk of antibiotic resistance. In our prospective study 72% of febrile children triggered at least one red flag.
011	Great North Children's Hospital Newcastle upon Tyne Foundation Hospitals Trust	General	In our prospective study we found that Amber criteria may be over sensitive and not discriminatory in paediatric practice. In our study 28% of febrile children (those who had not triggered red flags), triggered at least one amber flag. (100% of febrile children presenting to our paediatric emergency department triggered at least one red or amber flag according to NICE guidance)
012	Meningitis Now	General	Meningitis Now supports all statements in this QS, particularly Statement 5 and the importance of giving clear information and encouragement to seek further medical help if needed.
013	MSD	General	MSD supports the principles of good antimicrobial stewardship (AMS) and believe this quality standard will help to inform best practice in support of this initiative. We appreciate being given the opportunity to comment on the development of this quality standard.
014	National Sepsis Cluster, National Patient Safety Collaborative All Academic Health & Science Networks' Sepsis	General	ADULTS NEWS ≥5 should be included in the high risk category, it has more evidence than the whole of the NICE guidance, is already used in most acute trusts and has just been ratified for use across all UK ambulances and GP practices. We badly need a single, simple method of operationally defining those with sepsis.

ID	Stakeholder	Statement number	Comments[1]
	leads and Clinical leads for sepsis from each acute trust in England.		The guidance is not implementable in its current form for both adult or paediatric patients, in any setting. The guidance feels like a consensus statement and has ignored the large scale evidence from NEWS and qSOFA. The NICE Sepsis / UKST red flags form a mandatory part of Standards 1-4, most Trusts are not following these standards (National Sepsis cluster survey). What do we do?! Inada-Kim M, Mackenzie P, Nstebu E, et al. The National Patient Safety Collaborative Sepsis Cluster Guidance Survey. 2017. The AHSN Network http://www.norf.org.uk/resources/Documents/Sepsis/Patient%20Safety%20Collaborative%20Sepsis%20Guidance%20Survey%20Full%20Report%20January%202017%20(3)[4402].pdf With respect, what are the trusts that the members of the NICE CG51 guidance committee and quality standards group actually using to operationally define sepsis? We are told it is NEWS ≥ 5 and bespoke locally derived paediatric guidance. There is a paucity of good quality evidence around early antibiotic therapy in sepsis, they are merely best practice recommendations. The draft quality standard is based on 2016 NICE Sepsis guidelines. These guidelines have generated a significant debate among stakeholders nationally. This is particularly true in secondary care settings, where there is a widely held view that the guidelines are overly complex, that the evidence to support their complexity is limited, and that this complexity presents significant barriers to operationalization without clear evidence of benefit. Particularly problematic are the amber criteria for adults in secondary care; the paediatric secondary care guidelines; and failure to include neutropaenic sepsis/febrile neutropaenia in the high risk pathway. As a result, in a recent national survey carried out the Patient Safety Collaborative National Sepsis Cluster through the AHSNs, only a minority of Trusts (24% for adults, 17% for paediatrics) reported that they and their organisations are following / plan to follow the NICE guidance as published.

ID	Stakeholder	Statement number	Comments[1]
			Through the Oxford AHSN we have developed and adopted a simplified regional pathway based on the NICE high risk criteria and bundle of care and the UKST tools that addresses many of these concerns. We are aware that other regions and Trusts are doing the same. There is reasonable evidence that early antimicrobials are associated with better outcomes in severe infections, so quality standards around early antibiotic delivery for the sickest group of patients seem appropriate. The evidence in less sick patients, and for other parts of the bundle of care, is much more limited. PAEDS The Paed guidance overtriggers red flag sepsis/ high risk sepsis in children presenting with fever (206/285 febrile children presenting to an ED from a national sepsis cluster acute trust with only 2 of these actually having sepsis) We have seen an increase in GP referrals to our paeds unit from GP's trying to implement this guidance. None of the children referred have had sepsis. The GPs in the region are not generally using the NICE/UKST community adult or paed guidance. The ones that are trying to adhere to these guidelines are sending inappropriate patients in, who are though "triggering" Red flags are not really septic. UHS Paediatric team : Our data from 2 large audits across Wessex (227 paediatric patients in the first study and 703 patients in the second study using the revised criteria post draft consultation) illustrates that using a single observation parameter in an unwell child, significantly overtriggers for high risk sepsis. We have demonstrated that using combined criteria reduces the over-trigger rate by at least 50% - in the second study of 703 patients, 136 triggered as high risk using the NICE guidance and 67 patients were triggered as high risk using combined criteria on the TVW Paediatric Sepsis Screening Tool, and of the entire cohort only 3 patients had blood culture positive proven bacterial sepsis, all identified by both tools. The NICE sepsis flowchart is also a large, complex and unwieldy document which makes it time-consuming to use in the initial, rapid triage assessment of patients presenting acutely. It is not being used by acute Trusts across the Thames Valley and Wessex for this reason as well as the high over-trigger rate and we are in discussion with local GP practices regarding implementation of guidance in primary care which reflects the combined parameters used in our acute trusts as they are facing the same challenges with

ID	Stakeholder	Statement number	Comments[1]
			the NICE documentation. Whilst there is good evidence based direction of travel within adults (NEWS), there is a danger paediatrics will be left behind with a non-existent PEWS and NICE guidance that is over sensitive without being specific. The current issues that arise with the implementation of the NICE guidelines in paediatrics are: • The guidelines are not underpinned by evidence and are complex to follow. • Following NICE guidance is likely to lead to over triggering of sepsis alerts with subsequent increased use of invasive tests and IV antibiotics potentially leading to poor antibiotic stewardship and increased risk of antibiotic resistance. • Amber criteria are problematic as all children in our audit triggered amber or red flags. • We believe a single pathway for deterioration (Paediatric Early Warning System PEWS) which includes a consideration of sepsis is better • Parental concern does not feature in the NICE sepsis pathway and we believe this is an important factor in recognition of sepsis. • Neutropenic sepsis is not included We have adopted an adapted simplified pathway for paediatric sepsis Within Newcastle upon Tyne Hospitals and some regional partners. We do not believe that each of the statements in the draft quality standards would be achievable given the current resources. Quality statement 1 GPs in our region do not have access to oxygen saturation monitors that accurately measure oxygen saturations in under 2 year old children and blood pressure measurement in children under 5 years would be difficult and require not only specialist equipment but experience in using equipment and understanding of falsely reassuring measurements. Quality statement 2 In our hospital and more so in the regional district general hospitals, we would struggle to have sufficient ST4 doctors and above to review all the children who have triggered at least 1 red flag according to NICE guidelines (70% of all febrile children). This is potentially 30% of all admissions to ED (30% ED admissions are for fever) and the majority of these children would trigger red flags. In our experience Advanced Nurse Practitioners

ID	Stakeholder	Statement number	Comments[1]
			(ANP) have as much experience as junior doctors in the recognition of deteriorating and septic children and while they have been included under 'senior review' for adult patients they have not been included in paediatric draft guidelines. We currently use ANPs in the timely senior review and assessment of sick and septic children in our hospital. Quality Statement 3 and 4 Delivery of antibiotics and IV fluids within 1 hour. We support this quality standard, however achieving this goal is far more complex in children than adults because of the difficulty in getting IV access in sick paediatric patients. Placing IV cannulas in small children requires a minimum of 2-3 trained staff. We would support delivering antibiotics and fluids within 1 hour of placing an IV cannula. Quality statement 5 is achievable, we have developed regionally accepted information that will be used from primary to secondary and tertiary care on discharge for safety netting. Sharing resources with other regions such as this from a central resource bank of training and service modules could save time and money. Question 5 Can we be more specific about which children should be assessed? Sepsis is defined as "life threatening organ dysfunction caused by a dysregulated host response to infection". Septic shock a subset of sepsis in which "particularly profound circulatory, cellular and metabolic abnormalities are associated with a greater risk of mortality than with sepsis alone". This definition is a description which is not specific to the recognition of paediatric sepsis. . To compound this there is no nationally agreed paediatric early warning score and no consensus in normal range of observations for each age range. Early recognition of sepsis is difficult but there is an opportunity to reduce morbidity and mortality. The issue is the huge numbers of children with fever to screen to identify the few with sepsis. There is evidence that a systems approach can help, more validation is required and especially around the threshold for investigation and treatment. We would support the inclusion of parental concern within the pathway as a good indicator for concern. (Lane RD1, Funai T2, Reeder R2, Larsen GY2Pediatrics. 2016 Sep 7. pii: e20154153. Epub ahead of print) We believe that using a paediatric early warning system to screen for all deteriorating children and considering sepsis in each case is a better than the sepsis pathway. We have serious concerns that the NICE pathway is oversensitive and will lead to an increase in workload, invasive testing and unnecessary antibiotic use. We believe that current protocols, particularly those including physiological parameters triggering escalation require robust underpinning with data. The new NICE guidelines would benefit from validation and adjustment prior to

ID	Stakeholder	Statement number	Comments[1]
			defining quality standards in paediatrics. We call for a national database to enable shared learning and evidence based algorithms aiding but not replacing clinical judgment.
015	NHS England	General	NICE NG51 – Recommendation 1.5.2 Assess all people with suspected sepsis outside acute hospital settings with any moderate to high risk criteria to: · make a definitive diagnosis of their condition · decide whether they can be treated safely outside hospital Does this include provision of POCT for lactate? In ambulance settings? At the moment this is not uniform
016	NHS England	General	Suggest include provision for POCT for lactate to ensure the following can be done rapidly. For adults, children and young people aged 12 years and over with suspected sepsis who meet 2 or more moderate to high risk criteria, have lactate of less than 2 mmol/litre,
017	NHS England	General	NICE NG51 – Recommendation 1.3.6 Measure oxygen saturation in community settings if equipment is available and taking a measurement does not cause a delay in assessment or treatment. Suggest make the equipment available an aim. Suggest add diagnostics appropriate to setting as key factor Note absence of lactate testing listed here but it is listed in the other documentation. Suggest inclusion and CCGs to make available the relevant diagnostics.
018	NHS England	General	Ensuring antibiotics are prescribed can help to prevent antimicrobial resistance and improve clinical outcomes. Ensure appropriate antibiotics
019	NHS England	General	NICE NG51 Recommendation 1.7.4 For patients in hospital who have suspected infections, take microbiological samples before prescribing an antimicrobial and review the prescription when the results are available. For people with suspected sepsis take blood cultures before antibiotics are given. Specify appropriate specimens – such as blood culture/ wound inoculation swab Ensure sufficient Blood culture kits are available for use – could be audited

ID	Stakeholder	Statement number	Comments[1]
			Suggest time to review antibiotics after results minimum is included and cessation of inappropriate antibiotics included
020	NHS England	General	NICE NG51 Recommendation 1.7.6 and 1.7.7 For all people with suspected sepsis where the source of infection is clear use existing local antimicrobial guidance. Why not have national agreed guidance on what to give as in 1.7.5?
021	NHS England	General	However, the review found that the correct dose of antibiotics was prescribed in 98% of cases. This means 2% got incorrect antibiotics – suggest add appropriate antibiotic as measure to reduce this 2% further
022	NHS England	General	The review also identified that the source of infection was documented in 46% of people at triage, but in 78% of people at a senior review. For cases where the source was not recorded there was evidence for diagnosis of source in 49% of cases at triage and 23% of cases at senior review. Focus on reduction sepsis in HCAI in addition to community derived cases? .
023	NHS England	General	NICE NG51 Recommendation 1.11.10 · arrangements for follow-up, including specific critical care follow up if relevant Suggest systematic approach to follow up analysis – this is a major source for concern for patients recovering from sepsis.# 30 4.6.4 Resource impact assessment This area was not included in the resource impact report for NG51. It was not identified as an area that would have a significant resource impact (>£1m in England each year). Follow up care may have huge impact on resource (recovery, litigation, ongoing needs for assistance)– why has this not been factored?
024	NHS England	General	Procalcitonin testing Stakeholders suggested that further research is needed for the use of procalcitonin testing for the diagnosis and monitoring of sepsis after NICE diagnostics guidance DG18 found that there was not enough evidence to recommend that these tests are used in the NHS. NICE has already recommended further research and data collection to show the impact of adding procalcitonin testing to standard clinical practice in the NHS as part of the guidance.

ID	Stakeholder	Statement number	Comments[1]
			Phenotype and genotype testing A stakeholder suggested the use of phenotype and genotype testing in order to improve the precision in managing sepsis. This not currently covered by NICE guidance. Why are diagnostics not considered within scope when they are detailed as imperative measure for lactate and sampling for blood culture microbiological analysis? Whys is determining the causative agent of sepsis not considered within the scope of NICE guidance? Why is national register not appropriate? This was useful for MRSA.
025	NHS England	General	Document states no equality issues have been identified at this stage/ No specific equality issues or health inequalities were identified , however 4.1.1 states sepsis as particularly in high risk populations such as women who are pregnant. Sepsis affects the elderly and young with disproportionate effect than other age groups. Both these groups have increased requirement for effective communication and may have learning or hearing disabilities. Table 1 – stratification of adults by age – as elderly higher risk Patients living within communities in which vaccination is not effectively utilised will be at greater risk of sepsis from vaccine preventable infections Patients that are IVDU or living chaotic lifestyles or are homeless may be at increased risk of sepsis. The prison population may be at increased risk.
026	NHS England	General	Draft quality statement requires that a history is taken of the person with suspected sepsis. The QSAC felt it was important to be aware that some groups may have difficulty in giving a detailed history (people with English as a second language or people with communication problems) and therefore extra care should be given to ensure a good history is taken to inform any treatment.
027	NHS England	General	The QSAC felt that it was important that to ensure that a detailed medical history was given and that information was understood by all people, access to an interpreter or advocate should be provided if needed. Access to interpreter not reality available during sepsis pathway and the rapid time of progression. In practice provision of baseline NEWS scoring data would provide greater level of routine physiological score for comparator for admissions, linked to GP records or care home records for patients. Sepsis has a rapid progression in some cases and the provision of interpreters may delay resource from urgently needed intervention and good care.

ID	Stakeholder	Statement number	Comments[1]
			Consideration for hearing loss may also assist in communication rather than reliance on advocates etc. Routine hearing requirements could also be included in available records to enable better recognition of patients requiring assistance. Catheterisation – greater use of catheter passports could assist in patients with catheter related UTI and sepsis. Clarification as to the requirement for catheters, necessity and review within records could assist. Clarification as to requirement for, review and reduction in use of cannulas in patients within records may also be beneficial.
028	Regional Sepsis Stakeholder Group of the Oxford AHSN Patient Safety Collaborative.	General	The draft quality standard is based on 2016 NICE Sepsis guidelines. These guidelines have generated a significant debate among stakeholders nationally. This is particularly true in secondary care settings, where there is a widely held view that the guidelines are overly complex, that the evidence to support their complexity is limited, and that this complexity presents significant barriers to operationalization without clear evidence of benefit. Particularly problematic are the amber criteria for adults in secondary care; the paediatric secondary care guidelines; and failure to include neutropaenic sepsis/febrile neutropaenia in the high risk pathway. As a result, in a recent national survey carried out the Patient Safety Collaborative National Sepsis Cluster through the AHSNs, only a minority of Trusts (24% for adults, 17% for paediatrics) reported that they and their organisations are following / plan to follow the NICE guidance as published. Through the Oxford AHSN we have developed and adopted a simplified regional pathway based on the NICE high risk criteria and bundle of care, and the UK Sepsis Trust tools, that addresses many of these concerns. We are aware that other regions and Trusts are doing the same. There is reasonable evidence that early antimicrobials are associated with better outcomes in severe infections, so quality standards around early antibiotic delivery for the sickest group of patients seem appropriate. The evidence in less sick patients and for other parts of the bundle of care is much more limited, and needs to be balanced against the risks of unnecessary antibiotic use and antimicrobial resistance.
029	Royal College of General Practitioners	General	The quality standard documents are intended for the implementation of NICE guidance not the creation of new guidance, as they do not re-examine the evidence-base. This document goes beyond the scope of the existing NICE sepsis guidance, particularly with reference to Early Warning Scores which do not to be mentioned in the aforementioned guidance. This leaves the reader with the impression that the evidence-based for their use during the compilation of the guidance did not exist or was not strong enough for their inclusion at that time. Their inclusion within the QS now is “without visible/transparent evidence”. This is particularly relevant to General Practice where there is no evidence-base for early warning scores as a predictive tool for severe illness. NEWS was designed to be used in hospital, and not in primary care. It may be

ID	Stakeholder	Statement number	Comments[1]
			harmful to use these types of scores with high false negative or positive rates, affecting service delivery elsewhere or being used adversely against experienced doctors' judgements. Any tool should undergo high quality testing as NICE itself has recommended in NG51/4. In many ways the GPs job is to identify people who need to be in hospital quickly. This may be because of, or not because of, sepsis. Sepsis is not the only serious condition that requires to be excluded in this clinical scenario. Sepsis does not need to be diagnosed by GPs in order to correctly call for urgent assistance. It, along with multiple other conditions, needs to be considered. This section needs to be rewritten for generalist use and should not infer that scoring systems are useful in primary care without high quality data to support this. Given the paucity of evidence for sepsis identification in the Out-of-Hospital setting, particularly General Practice it is difficult to be categoric regarding what represent quality in these fields. The NICE guidance has relied largely on the limited evidence-base within the hospital setting and "expert" opinion. The guideline development committee had united GP presentation. The impression is that the plans/guidance/suggestions for General Practice were strongly influenced by Secondary Care colleagues who may have little appreciation of what is deemed "normal" in general practice and that their extrapolation of hospital practice and evidence into the community is without validation and does not meet the criteria appropriate for "expert" knowledge. We recognise that this has been done with good intention but as the comments made on the draft NICE guidance and these quality standards will show they are outside the bounds of what is appropriate and/or practical. These QS don't take into account the reality that most people and children are seen out of hospital so the acute hospital setting doesn't apply. Parents are now being encouraged to self manage young children and seek advice from pharmacists, GPs are being encouraged to set up clinical hubs for out of hours, many don't have paediatric training. So there needs to be an emphasis on upskilling pharmacists, paramedics and hubs that could give antibiotics. Point of care tests for the community would be helpful. This Qs doesn't understand the context of the shifting assessment of patients and should be looking more closely at the community setting with the change in service delivery here and pressure on ambulance service and hubs and out of hours. At first glance only one of the five Quality standards appears to have relevant to General Practice, it is only on further reading of all five that one discovers the relevance of Quality Standards Three and Five. This is likely to cause them to be overlooked. The QS carefully excludes primary care. The only statement that might be concerned with primary care is the first one, but it's structured to reflect only hospital care. It reads in such a way that it is entirely circular.
030	Royal College of Paediatrics and Child Health	General	The breakdown is making it overly complicated for managing sepsis in children. Currently they are neonate, under 5, 5-12 and then over 12 –it needs to be simplified.
031	Royal College of Physicians	General	The RCP is grateful for the opportunity to comment on this draft QS. We have liaised with the Society of Acute Medicine and wish to endorse their submission.

ID	Stakeholder	Statement number	Comments[1]
			We would also strongly recommend that NICE reference the RCP led National Early Warning Score (NEWS) - Standardising the assessment of acute-illness severity in the NHS within this QS – see further details below.
032	The British Society for Antimicrobial Chemotherapy (BSAC)	General	In my capacity as lead for the Healthier Together project (www.what0-18.nhs.uk) and working in partnership with the Wessex paediatric critical care network, we have developed a sepsis screening tool for use in primary care. This is based on the clinical criteria and physiological parameters proposed in the NICE sepsis guidelines but using the 2+1 approach from the Wessex sepsis screening tool (in use in all the hospitals in Wessex). This has been ratified by GPs in Wessex in order to maintain a consistency between management in primary care and front of house secondary care. We have shown though a prospective audit conducted in the paediatric ED at Southampton Children's Hospital that the single red flag trigger approach proposed in the NICE guidelines would result in a large number of children "triggering" the tool in primary care and being referred to secondary care for review (the NICE tool was twice as likely to "trigger" a middle grade review than the Wessex sepsis screening tool, with no increase in sensitivity for picking up cases of sepsis". The discrepancy between the 2 tools was resulted almost entirely from children with bronchiolitis triggering the NICE criteria due to their increased respiratory rate. I think that a sepsis tool is absolutely required but if deemed impractical by primary care, will not be implemented. In addition, the impact on secondary care would also be significant, with senior clinicians (ST6 and above) being regularly called to ED to review children triggering a single physiological parameter. I would suggest further evaluation of the recognition aspects of the tool and the impact on flow of patients, both from primary to secondary care, as well as from ED to paediatric wards. An evaluation of the unnecessary anxiety caused to parents and healthcare professionals would also be required during this evaluation.
033	The Royal College of Anaesthetists	General	Last paragraph, second sentence should start with "Septic shock" rather than "Sepsis Shock".
034	The Royal College of Anaesthetists	General	Stakeholders highlighted the need for healthcare professionals to be able to promptly identify sepsis, including those who work in primary, secondary and community care. Therefore training should be provided to improve the recognition of sepsis among healthcare professionals. However training and educations are outside the remit of quality standards as it is expected all healthcare professionals involve in patient centred care will be appropriately trained. This statement seems complacent, given that ability to recognise sepsis is key to improving treatment – suggest training and education should be included in the quality standards and provided to all healthcare professionals who

ID	Stakeholder	Statement number	Comments[1]
			may come into contact with patients with developing sepsis, including non-clinical staff who can expedite or delay access to healthcare professionals.
035	The Royal College of Anaesthetists	General	Throughout the document the explanatory notes around 'criteria indicating high risk of severe illness or death from sepsis', 'suspected sepsis' and 'senior clinical decision maker' are repeated in most statement sections. To reduce the repetition within the document could these just be either at the beginning or the end with reference to the location of these explanatory notes under each statement heading instead?
036	The Royal College of Anaesthetists	General	(1) In conclusion the Royal College of Anaesthetists supports prompt recognition and treatment of sepsis and other life threatening conditions however we have reservations that a system that rewards the administration of antibiotics and fluid to avoid censure or to achieve a CQUIN payment may lead to unintentional harms. Increased use of antibiotics when we are faced with the growth of resistant organisms. No mandate to obtain cultures and stop unnecessary antibiotics. No mandate for early consideration of source control which has a secure evidence base No attempt to record instances of misdiagnoses for example elderly patients with heart failure may exhibit every sign of sepsis but will not benefit from and could be harmed by treatment with antibiotics and fluids. Suspicion of sepsis is seen most frequently in older people who may be at greater risk of C.difficile infection if prescribed antibiotics unnecessarily. Welker JA, et al. Antibiotic timing and errors in diagnosing pneumonia. Arch Intern Med 2008; 168:351–356 (Core quality measure requiring a reduction in time to first antibiotic dose for community-acquired pneumonia from 8 to 4 h was achieved at expense of a significant decrease in diagnostic accuracy) Heffner AC, et al. Etiology of illness in patients with severe sepsis admitted to the hospital from the emergency department. Clin Infect Dis; 2010 50:814–20 (18% of patients identified as 'septic' in an emergency department were subsequently found to have a sepsis mimic) Contou et al. Septic shock with no diagnosis at 24 hours: a pragmatic multicenter prospective cohort study. Critical Care 2016; 20:360 (26% of patients admitted to a French ICU with suspected septic shock had no infection identified 24 hours after its onset and almost half were eventually diagnosed with a septic shock mimicker. Outcome did not differ between patients with early-confirmed septic shock and other patients). Klein Klouwenberg PMC, et al. Likelihood of infection in patients with presumed sepsis at the time of intensive care unit admission: a cohort study. Crit Care 2015; 19:319 (13% of 2579 patients admitted to two Dutch ICUs with a presumptive diagnosis of sepsis had a post-hoc infection likelihood of 'none', and an additional 30% of only 'possible). Fitzpatrick JM et al. Gram-negative bacteraemia; a multi-centre prospective evaluation of empiric antibiotic therapy and outcome in English acute hospitals. Clin Microbiol Infect. 2016; 22:244–51.

ID	Stakeholder	Statement number	Comments[1]
			Puskarich MA, et al. Association between timing of antibiotic administration and mortality from septic shock in patients treated with a quantitative resuscitation protocol. Crit Care Med. 2011; 39:2066–71. Kaasch AJ, et al. Delay in the administration of appropriate antimicrobial therapy in Staphylococcus aureus bloodstream infection: a prospective multicenter hospital-based cohort study. Infection. 2013; 41:979–85. Ryoo SM, et al. Prognostic value of timing of antibiotic administration in patients with septic shock treated with early quantitative resuscitation. Am J Med Sci. 2015; 349:328-33. de Groot B, et al. The association between time to antibiotics and relevant clinical outcomes in emergency department patients with various stages of sepsis: a prospective multi-center study. Crit Care 2015; 19:194. Hranjec T, et al. Aggressive versus conservative initiation of antimicrobial treatment in critically ill surgical patients with suspected intensive-care-unit-acquired infection: a quasi-experimental, before and after observational cohort study. Lancet Infect Dis 2012; 12:774–80. Bloos F, et al. Impact of compliance with infection management guidelines on outcome in patients with severe sepsis: a prospective observational multi-center study. Crit Care 2014; 18:R42. Shankar-Hari M, et al. Developing a New Definition and Assessing New Clinical Criteria for Septic Shock: For the Third International Consensus Definitions for Sepsis and Septic Shock (Sepsis-3). JAMA. 2016; 315:775–87.
037	Great North Children's Hospital Newcastle upon Tyne Foundation Hospitals Trust	Question 1	The draft quality standard reflects key areas for quality improvement. In paediatrics there is little evidence that time to antibiotics or time to IV fluids has any effect on overall outcome. There is some evidence that delivering a whole bundle of care can decrease mortality so all aspects of care should be delivered in a timely manner.
038	North West Ambulance Service NHS Trust	Question 1	The Quality Standard in its current format does not accurately reflect key areas for quality improvement for the ambulance service. It's not just about calculating a NEWS score for risk. North West Ambulance Service use a sepsis screening tool based on clinical presentation which includes risk of infection, NEWS score, high risk criteria and indicators for red flag sepsis. This quality standard doesn't cover all populations and only covers patients that are recognised as sepsis within the acute setting and ignores the contribution to early identification and treatment of sepsis by the emergency ambulance service.
039	Public Health England	Question 1	It does not outline what the key areas are for quality improvement We think the link to the guidance (NG51) should be moved up to the top.
040	The Royal College of Anaesthetists	Question 1	Standard does not reflect difficulties in ensuring potential cases of sepsis are identified by patients and the community and treated with the same urgency as, e.g. a suspected heart attack. For people with suspected sepsis to be assessed awareness of sepsis needs to be improved, amongst the public and at those points in healthcare where delays can potentially happen if the urgency is not recognised, e.g. 111 services, GP receptionists, community pharmacists and care homes. Awareness includes signs and symptoms and categories of patients at greatest risk,

ID	Stakeholder	Statement number	Comments[1]
041	Alder Hey Children's NHS Foundation Trust	Question 2	Not initially but being developed
042	Cardiff and Vale University Local Health Board	Question 2	Data collection for all aspects of the Standards may well be challenging. In hospitals with full e-observations systems in place, a full dataset may be possible for Statements 1 to 4.
043	Great North Children's Hospital Newcastle upon Tyne Foundation Hospitals Trust	Question 2	No there are not systems in place to collect data for the proposed quality measures. Hospitals that do not have electronic records, electronic paediatric early warning scores, electronic observations and electronic prescribing will find it very time consuming and difficult to collect sufficient data for the proposed quality standards. Newcastle upon Tyne Foundation Trust Hospitals and most of the Hospitals represented in the Paediatric Resilience Collaborative covering the North East and North Cumbria sector currently only have partially electronic records, do not have electronic observations scores and only have electronic prescribing in some areas. It is not feasible to put these complex systems in place within four months before the implementation of these quality standards.
044	NHS England	Question 2	Question 2 Local data collection is in place for Statements 1 and 3. For standard 5 in primary care both EMIS and SystmOne have the functionality to record if safety-netting written info has been given to patients. Statement 4 will be the hardest to measure, at least until hospital trusts have moved to electronic recording of IV fluid administration
045	North West Ambulance Service NHS Trust	Question 2	When reviewing some of the questions it was unclear if the measure would apply to acute hospitals only, statement 1 was the only one which referred to the ambulance service, yet other standards are relevant to our pre hospital setting and therefore we would suggested that this was revisited to make it clear. From an ambulance service perspective we do have issues with the data collection suggestions made in the statements that could prove difficult for us to measure. NWAS are unable to determine whether their patients have confirmed sepsis without receiving outcome data from acute trusts. This would be a logistical challenge as within the NWAS footprint there are 35 settings that we would need to liaise with to ensure information data sharing agreements were in place to allow us to start to look at collecting that data. The datasets can only be linked if the incident number from the NWAS patient report form is recorded by the acute; however this is not currently collected by all hospitals. Our patient report form is currently paper based this also means that when the incident numbers are recorded it is subject to manual errors and cannot always be clearly read by the acute settings. Any record of suspected sepsis and medical assessments will be recorded on the paper PRF as well meaning that we are reliant on manual resource to carry out audits which will require funding.
046	Public Health England	Question 2	This will vary depending on the provider. It is feasible to put quality measures in place Provide a spreadsheet with example calculations

ID	Stakeholder	Statement number	Comments[1]
047	Royal Pharmaceutical Society	Question 2	Local systems are not available in all hospitals to capture this data. Where electronic patient management systems are linked to electronic prescribing systems this may be feasible but otherwise some elements would need to be measured using paper-based systems which is time consuming and would require resources to support this.
048	Scottish Antimicrobial Prescribing Group	Question 2	Local systems are not available in all hospitals to capture this data. Where electronic patient management systems are linked to electronic prescribing systems this may be feasible but otherwise some elements would need to be measured using paper-based systems which is time consuming and would require resources to support this.
049	UK Clinical Pharmacy Association (UKCPA)	Question 2	Local data collection will not be readily available in all trusts so may be difficult for some to collect (especially for prescribing data and whether the antibiotics were given within 1 hour).
050	Cardiff and Vale University Local Health Board	Question 3	We are in the process of rolling out our new sepsis screening tool which will be compliant with NICE guidance for adult patients over 16. Other patient groups will follow in due course, as clinicians assess and implement tools based on the available evidence and guidance.
051	Great North Children's Hospital Newcastle upon Tyne Foundation Hospitals Trust	Question 3	We conducted a prospective cohort study over two months (May- June 2016) to describe current practice and model the new sepsis guideline-based practice based on these parameters. 285 consecutive patients presenting to a tertiary centre emergency department with fever >/=38·5 0C were included; 174 male (61·1%), age range 0 - 15·2 years (median 2·1 years), comorbidity present in 45 (13·8%). Sepsis was defined as SIRS criteria plus proven infection. 21 patients (7·4%) had full sepsis screens (blood tests, chest X-ray, lumbar puncture and intravenous (IV) antibiotics). Diagnoses included, two sepsis , seven viral meningitis, three urinary tract infection, one lower respiratory tract infection (LRTI), three viral illness, two fever post-immunisation, one skin infection and two fever unknown origin (FUO). No sepsis occurred in the 264 patients (92·6%) not screened. 206 (72·3%) would have been eligible for sepsis screens according to new NICE guidelines ("red flags"), a ten-fold increase. 27 (9·5%) children received IV antibiotics and one intramuscular (IM) (21 for possible sepsis, two tonsillitis, four LRTI and one FUO). All survived. Median length of stay for the 21 patients screened for sepsis was 2 days (range 1-10). Modelling the NICE sepsis guidelines to actual data, demonstrates a potential tenfold increase in investigation and treatment of sepsis, equivalent to an estimated increase of 2220 bed days /year (6.1 beds/year), resulting in unnecessary harm, poor antibiotic stewardship, and a major burden on the health system particularly over winter.
052	NHS England	Question 3	Question 3 :n/a – we are not a provider organisation
053	North West Ambulance Service NHS Trust	Question 3	North West Ambulance Service are currently rolling out a sepsis screening tool across the NWAS footprint for all clinicians to use, this is supported by an indicator audit and quality improvement project work which incorporates data sharing to support the outcomes of the Sepsis CQUIN.
054	Royal Pharmaceutical Society	Question 3	The quality standard should reflect current best practice in management of sepsis which is to give IV antibiotics following the local antimicrobial policy. This would ensure that the specific locally agreed treatment which may include more than one antibiotic is given by the correct route for optimum benefit.

ID	Stakeholder	Statement number	Comments[1]
055	Alder Hey Children's NHS Foundation Trust	Question 4	Potentially deliverable **if resources available** but not without investment. Significant investment in staff and prescribing and information systems needed to report. Potential expansion of medical staffing numbers to be able to meet increased work in Emergency Department and on inpatient wards.
056	Cardiff and Vale University Local Health Board	Question 4	The major resource implications will be for education in terms of staff time and supporting materials. Aspects of clinical practice, such as task prioritisation, will clearly need to be modified. It would likely take a few years to embed such change into acute hospital culture.
057	Great North Children's Hospital Newcastle upon Tyne Foundation Hospitals Trust	Question 4	We do not believe that each of the statements in the draft quality standards would be achievable given the current resources. GPs in our region do not have access to oxygen saturation monitors that accurately measure saturations in children under 2 years old.
058	NHS England	Question 4	Question 4 :At present provider trusts that are delivering the CQUIN standards will have financial resources to cover delivery of these Quality Standards. There are costs involved in putting all of these standards into place in a way that ensures they are systematic and sustainable. Educational and safety-netting materials are being developed nationally using a collaborative approach and will be made available free of charge to localities. Many localities have found sepsis nurses are key to achieving implementation and continuing good practice regarding prompt recognition and treatment of sepsis. I believe that some trusts such as Royal Liverpool have described a health economic benefit through reduction in LOS and ITU usage by patients with sepsis diagnoses after implementing sepsis nurses.
059	North West Ambulance Service NHS Trust	Question 4	The Quality Standard is achievable with on-going work and development in those areas. Statement 1 – The assessment of Sepsis is an area of work that is on-going priority for NWAS Statement 2 – Not applicable for Ambulance Service Statement 3 – "Primary care and ambulance services should ensure that systems are in place to give antibiotics to these people in locations where transfer time to secondary care is more than 1 hour". Whilst this is an area that supported by research is possible that it could be taken at the point where an ambulance service identifies sepsis/red flag sepsis to facilitate early delivery of safe and appropriate antibiotic therapy. The following areas have been highlighted as a concern with the statement in its current form; Paramedics are permitted to administer a range of Prescription Only Medicines under Schedule 17 of the Human Medicines Regulations. The only antibiotic listed within the legal exemptions is Benzylpenicillin. Any other parenteral antibiotic would require a PGD to be written and approved in order for Paramedics to possess and administer any other type of IV antibiotic. Ambulance Trusts cover the population catchment areas of several Acute Hospital Trusts. It is proposed that an agreement be set up to decide on a single pre hospital IV antibiotic for patients meeting all the criteria specified. The choice would need to take into consideration the range of doses for paediatrics and adults and the preparation of the drug in a non-clinical and non-sterile environment. It would also need consideration of alternative options when manufacturing problems and / or supply problems occur and limited storage conditions on ambulances i.e. temperature control.

ID	Stakeholder	Statement number	Comments[1]
			Statement 4 – Again to reiterate statement 3, this could be achieved with research, lactate testing could be achieved by emergency ambulance clinician leading to earlier administration of fluid bolus (without point of care lactate testing this is already being undertaken by North West Ambulance Service Paramedics). Statement 5 – Sepsis self-care advice is something that can be developed and achieved for the ambulance service.
060	Public Health England	Question 4	It depends on the setting. Acute hospitals will already have systems in place. Some smaller private organisations might not have the resources
061	Advisory Committee on Antimicrobial Prescribing, Resistance and Healthcare Associated Infection.	Draft statement 1	"People with suspected sepsis are assessed to stratify risk of severe illness or death using a structured set of observations" Treatment for an identified source of infection should follow local antibiotic formulary guidance and not a very broad antibiotic treatment. Source control is essential in the management plan. Widespread use of broad spectrum agents is likely to have a deleterious effect on the emergence of antimicrobial resistance. Antimicrobial stewardship needs to be supported. The structured set of observations will identify more patients than actually require treatment. The structured set of observations does not include signs of pneumonia or peritonitis.
062	All-Party Parliamentary Group on Sepsis	Draft statement 1	The Group welcomes the references to NEWS.
063	British Infection Association	Draft statement 1	"People with suspected sepsis are assessed to stratify risk of severe illness or death using a structured set of observations" Not controversial, but also not limited to patients with suspected sepsis. Guidance should focus more on a generic approach to recognition of acutely ill and deteriorating patients. Process measure (a) is presumably included as patients with sepsis are a convenient sample, though it is subject to bias if patients not screened are less likely to receive a diagnosis / code of sepsis. Can the 'stratified set of observations' listed accurately stratify risk of death in sepsis? Is there a clear evidence basis to use those listed, in particular outside the hospital setting. As the UK red flag criteria which are used here have some evidence behind their use within a hospital are they established for use in the community? In addition they are very difficult to implement rapidly. In fact the criteria listed here would be difficult to use in an acute setting in a rapid-assessment. The observations listed in this standard are not according to the most recent evidence basis (qSOFA). Our comment as an organisation previously was that these recent publications in JAMA needed incorporation into the quality standard and in this draft that has not occurred. In a recent UK audit of 416 patients almost half with an abnormal qSOFA ended up on ITU or died within 14d compared to only 10% with NICE sepsis (5% of medical admissions in that hospital). In another hospital 30% of medical admissions were found to have NICE-defined sepsis.

ID	Stakeholder	Statement number	Comments[1]
			Is there research evidence on which to base this statement for situations outside hospital? There is a significant risk that NEWS based scoring will over diagnose sepsis in non-hospital populations. This has the potential to cause significant harm (over treatment, unnecessary admission). We need to support research into what variables we should pay attention to in low prevalence settings. In hospital mortality also has issues as an indicator as many people have 'expected deaths' in hospital, and these are likely to skew the figures. Despite the evidence supporting early antibiotic use, deaths in sepsis may also be attributable to host factors (age, co-morbidities, immunosuppression) and microbiological factors rather than antibiotic or fluid use. On the positive side we are pleased you have removed the NICE moderate risk factors for sepsis from this standard. A minority of our members feel comfortable with the assessment criteria in this standard. Initial NEWS score of 3 (or above) (page 5) is likely to be too low (NEWS 5 or above is expected to be used by NHS England) and is likely therefore to result in unnecessary treatment with broad spectrum antibiotics and the associated impact on stewardship If the source of infection is apparent eg. UTI / chest infection treatment should be initiated according to the local antibiotic guidance for that condition rather than all admissions receiving very broad antibiotic treatment. Source control needs also to be considered. Would it be worth separating guidelines for adults from those for children to make the guidelines more concise and readable? We would support this standard if modified to use the qSOFA &/or NEWS 5 or above within hospital or a more specific/easy to use assessment method and to incorporate references to source-specific infections or where to find further information about them. For assessment in the community further evidence is required. This standard should be aligned with or form the basis of the sepsis screening measure in the national CQUIN rather than any separate data collection mechanism.
064	Cardiff and Vale University Local Health Board	Draft statement 1	All-Wales practice is that NEWS is used in all acute healthcare settings with agreed escalation trigger points. Use of updated screening tools to encourage staff to think "could it be sepsis" and escalate appropriately to facilitate timely response and intervention.

ID	Stakeholder	Statement number	Comments[1]
065	Cardiff and Vale University Local Health Board	Draft statement 1	The potential "up-front" resource implications will be difficult to quantify as there is insufficient evidence to assess the impact on Primary Care and Emergency Units. Ultimately, however, the ambition is that by preventing deterioration there will be resource savings "down the line", i.e. post-ICU and post-hospital discharge as indicated in section 4.2.4
066	Faculty of Intensive Care Medicine & Intensive Care Society	Draft statement 1	NEWS>=5 is a validated standard for the identification of patients at risk. To try and identify a patient at risk of 'life threatening sepsis' with a NEWS 3 is not appropriate and will over burden those screening these patients with little/no gain
067	Faculty of Intensive Care Medicine & Intensive Care Society	Draft statement 1	There is no need to record an extra mandatory set of obs; clinicians will have already asked for a NEWS and it is all in the NEWS. In addition the over emphasis on skin changes and integrity comes at the risk of ignoring important abdominal/chest signs which are some of the most common causes of sepsis
068	Faculty of Intensive Care Medicine & Intensive Care Society	Draft statement 1	Yes we can be more specific about which people are assessed, those with a NEWS>=5 or qSOFA >=2
069	Great North Children's Hospital Newcastle upon Tyne Foundation Hospitals Trust	Draft statement 1	Parental concern does not feature in the assessment to stratify severity of illness, we believe this is an important factor in the recognition of paediatric sepsis and particularly in complex children with neurodisability who may not trigger any other criteria. These children may be normally hypothermic and become normothermic when unwell.
070	Great North Children's Hospital Newcastle upon Tyne Foundation Hospitals Trust	Draft statement 1	We believe a single pathway for deterioration (Paediatric Early Warning System PEWS) which includes consideration of sepsis is better
071	Great North Children's Hospital Newcastle upon Tyne Foundation Hospitals Trust	Draft statement 1	GP's do not all have access to the equipment and technical expertise required to get accurate blood pressure measurement in children under 5 years.
072	Great North Children's Hospital Newcastle upon Tyne Foundation Hospitals Trust	Draft statement 1	There is no nationally agreed paediatric early warning score and no consensus in normal range of observations for each age range in children, making assessment difficult and inconsistent between providers.
073	Great North Children's Hospital	Draft statement 1	Early recognition of sepsis is difficult in children and the large number of febrile children presenting to acute medical care present a significant workload for screening alone compared to adults but there is an opportunity to reduce

ID	Stakeholder	Statement number	Comments[1]
	Newcastle upon Tyne Foundation Hospitals Trust		morbidity and mortality. There is evidence that a systems approach can help, more validation is required and especially around the threshold for investigation and treatment. We would support the inclusion of parental concern within the pathway as a good indicator for concern.
074	Integrated Care 24 Ltd	Draft statement 1	This is feasible and deliverable in face-to-face assessment however a significant amount of work in OOH (out of hours) is based on telephone triage and standard 1 would not be feasible or deliverable in this scenario.
075	Integrated Care 24 Ltd	Draft statement 1	Work from IC24 completed with the UK Sepsis Trust produced age-specific algorithms for identifying suspected sepsis by telephone triage alone and the plan was that these should be available as a prompt during telephone triage in OOH when a patient presents with fever and suspected infection.
076	Integrated Care 24 Ltd	Draft statement 1	We agree with the need for a structured set of observations but OOH IT systems need to be configured to collect all relevant observations. The aim would be to have a 'pop-up' box with the sepsis markers displayed on the screen: the clinician has to click 'ok' to remove the sepsis box from their screen. There was strong clinician support for using technology to support decision making and prompting the clinical indices to be recorded. This would also facilitate audit.
077	Integrated Care 24 Ltd	Draft statement 1	Inclusion of normal physiological variables (range) for adults, children and babies as we clinicians will not be able to remember all of these in assessment guidelines.
078	Integrated Care 24 Ltd	Draft statement 1	We suggest that a blood sugar forms part of the standard set of observations (page 6 of the consultation document). Consideration should be made for use of near-patient testing for measurement of C reactive protein (CRP).
079	Integrated Care 24 Ltd	Draft statement 1	The emphasis on commissioners commissioning services which stratify risk which we read as placing an emphasis on them defining processes and then funding accordingly which given current fiscal restraint is a challenge.
080	Integrated Care 24 Ltd	Draft statement 1	The answer must be driven by evidence (demographics, conditions etc). Of course, however a patient is stratified (high, medium, low risk vs a numerical score vs other) any individual can suffer sepsis and as such an awareness of red flag symptoms and signs (within a face to face assessment) must remain the priority. This involves clinician education and awareness.
081	Integrated Care 24 Ltd	Draft statement 1	We are not entirely sure that risk stratification will help improve sepsis identification. If one considers sepsis (in order to risk stratify) one should be considering anyway to assess (and then exclude or include). If one doesn't consider the diagnosis, neither risk stratification nor an appropriate assessment will occur. Our emphasis would be on assessment of any patient who presents unwell as being potentially septic. A thorough assessment should then occur, ideally with a weighted risk score based on the well-established symptoms/signs (with lower scores for the more subjective items).
082	Integrated Care 24 Ltd	Draft statement 1	A number of our clinicians opined that as a matter of course for anyone with symptoms either unexplained or symptoms of infection should have sepsis markers done and recorded. If anyone is outside of normal parameters and a no other diagnosis can be found and the patient has potential risk factors then this should be considered and further investigations sought.

ID	Stakeholder	Statement number	Comments[1]
083	National Sepsis Cluster, National Patient Safety Collaborative All Academic Health & Science Networks' Sepsis leads and Clinical leads for sepsis from each acute trust in England.	Draft statement 1	People with suspected sepsis are assessed to stratify risk of severe illness or death using a structured set of observations ADULTS Agreed in principle, however NEWS ≥5 has much more evidence than NEWS≥3 + Red flag sepsis or high risk criteria sepsis. The amber/green are a bit confused, mixing historical elements with observations and risk factors all lacking in evidence. Churpek MM, Snyder A, Han X, et al. qSOFA, SIRS, and Early Warning Scores for Detecting Clinical Deterioration in Infected Patients Outside the ICU. Am J Respir Crit Care Med. 2016 Sep 20 Corfield AR, Lees F, Zealley I, et al. Utility of a single early warning score in patients with sepsis in the emergency department. Emerg Med J. 2014 Jun;31(6):482-7 By creating a two stage tool, confusion will ensue reducing the usability of guidance. See National sepsis survey comments on complexity. The only strongly evidenced structured set of observations is NEWS- why not state this? qSOFA ≥2 is contained within NEWS ≥5, adding another 5 million patients' worth of data to the evidence for use of NEWS. 100% of patients triggering qSOFA, had NEWS ≥ 5 (UCLH communication) Hence the author from below recommending NEWS ≥ 5 at his own trust. Singer M, Deutschman CS, Seymour CW, et al. The Third International Consensus Definitions for Sepsis and Septic Shock (Sepsis-3). JAMA. 2016 Feb 23;315(8):801-10. doi: 10.1001/jama.2016.0287. There is reasonable evidence for association of aggregate early warning scores (EWS, e.g. NEWS) with outcome in sepsis, and aggregate NEWS and would be easier to audit across departments and organisations. Use of NEWS would better align sepsis with the national move to standardise recognition and assessment of all sick or deteriorating patients. This standard is not clear and not based on current best available evidence. Current best available evidence is that an aggregate NEWS score of 5 or more is the most sensitive and specific indicator of sepsis in adult patients with infection. This is a better predictor of patients who are likely to do badly, compared to single abnormal observations

ID	Stakeholder	Statement number	Comments[1]
			(red flags). In addition there is no evidence that patients with sepsis and ashen, mottled skin, non-blanching rash etc are being missed. Including these indicators has over-complicated the guideline whilst trying to address a rare problem. We would propose that this quality standard be modified to read " …evidence that patients who have sepsis have had an EWS recorded within 1 hour of arrival to hospital or deterioration". Another option is "…evidence that patients with aggregate NEWS score of 5 or above have been screened for sepsis". This standard should be aligned with or form the basis of the sepsis screening measure in the national CQUIN rather than any separate data collection mechanism. Including or using qSOFA would also be reasonable - qSOFA is not included in NICE guidance despite evidence for it being a useful predictor of poor outcome in sepsis. In is surprising that criteria with limited evidence such as red or amber flags have been included in the NICE sepsis guidelines and quality standard at the expense of other criteria with more evidence. Not controversial, but also not limited to patients with suspected sepsis. Guidance should focus more generally on recognition of acutely ill and deteriorating patients, recognising that sepsis is just one of a number of potential causes of deterioration and that many of the tools for assessment are generic. A generic approach is much more likely to be adopted and sustained. Process measure (a) is presumably included as patients with sepsis are a convenient sample, though it is subject to bias if patients not screened are less likely to receive a diagnosis / code of sepsis. PAEDS UHS (University Hospitals Southampton)/ Wessex Paediatric data - Using a standardised set of age-specific observations in the paediatric population is a good way to assess patients for possible sepsis. There are, however, several difficulties in using observations only which could lead to confounding factors influencing a purely observation based stratification of risk. In view of this, in the Thames Valley and Wessex we have been using a modified Paediatric Sepsis Screening Tool that combines age-specific observations with clinical factors at the outset to try to select out the patients at true risk of bacterial sepsis from the initial assessment with good results. In using this combined assessment from the outset in a study of 703 patients at UHS, we have demonstrated a smaller number of patients being identified as high risk for sepsis and thus requiring immediate senior review than the published NICE guidelines for the same group. Using the combined criteria, no patients were 'missed' and the trigger rate was

ID	Stakeholder	Statement number	Comments[1]
			approximately 50% lower. As there is no regional or national agreement on PEWS scoring and no Nationally adopted single scoring system, we do not feel that using a pure PEWS score would afford the most accurate results. The draft quality standard reflects key areas for quality improvement. In paediatrics there is little evidence that time to antibiotics or time to IV fluids has any effect on overall outcome. There is some evidence that delivering a whole bundle of care can decrease mortality so in theory all aspects of care should be delivered in a timely manner. (High Reliability Paediatric Septic Shock Quality Improvement Initiative and Decreasing Mortality)
084	NHS England	Draft statement 1	Consider using an early…. The use of the phrase consider is not definitive enough for influencing change.
085	NHS England	Draft statement 1	Statement 1 People with suspected sepsis are assessed to stratify risk of severe illness or death using a structured set of observations. What set?
086	NHS England	Draft statement 1	Statement 1: as drafted this currently does not include measurement in primary and community care and in ambulance services
087	NHS England	Draft statement 1	Quality statement 1: Assessment page 4 Structure Evidence of local arrangements to ensure that a structured set of observations are used to stratify risk of severe illness or death from sepsis. This is not definitive enough and is listed throughout the document. Suggest a clear list of required observations is included such as: temperature heart rate respiratory rate level of consciousness oxygen saturation Capillary refill Blood pressure

ID	Stakeholder	Statement number	Comments[1]
			For suspicion of sepsis Lactate and blood measures etc……. How about – patients with blood culture sampling prior to antibiotics as measure? Services can consider using an early warning score (such as NEWS) to inform local arrangements and written clinical protocols. This is not definitive enough, areas may consider not to use it. Suggest: Services must use early warning score (such as NEWS)
088	NHS England	Draft statement 1	Service providers (such as primary, ambulatory and secondary care services) ensure that written protocols are in place (such as using an early warning score) for people with suspected sepsis to be assessed using a structured set of observations to stratify risk. Suggest alter to include written protocols, equipment and diagnostics are in place (such as lactate with specified list of what NICE recommends for use)…… Commissioners (such as clinical commissioning groups and NHS England) ensure that they commission services in which people presenting with symptoms that suggest sepsis are assessed to stratify risk using a structured set of observations. Suggest adding the recommended structured set of observations, equipment and diagnostics
089	NHS England	Draft statement 1	People should have access to an interpreter or advocate if needed (hearing support if required).
090	Regional Sepsis Stakeholder Group of the Oxford AHSN Patient Safety Collaborative.	Draft statement 1	"People with suspected sepsis are assessed to stratify risk of severe illness or death using a structured set of observations" Not controversial, but also not limited to patients with suspected sepsis. Guidance should focus more generally on recognition of acutely ill and deteriorating patients, recognising that sepsis is just one of a number of potential causes of deterioration and that many of the tools for assessment are generic. A generic approach is much more likely to be adopted and sustained. Process measure (a) is presumably included as patients with sepsis are a convenient sample, though it is subject to bias if patients not screened are less likely to receive a diagnosis / code of sepsis.

ID	Stakeholder	Statement number	Comments[1]
			Suggest quality marker should be that patient s are screened for sepsis i) on urgent care pathway ii) at deterioration as inpatients. Given overlap between severe sepsis and AKI occurs some stakeholders have suggested inclusion of fluid balance within the structured set of observations.
091	Royal College of Emergency Medicine	Draft statement 1	This does reflect a key area for improvement and having score of 3 will ensure earlier detection of potential cases. In Wales NEWS scoring is embedded into all Healthboards and has also been adopted by the Welsh ambulance service (WAST) which allows the WAST to recognise and prealert patients with sepsis to the ED before their arrival. It is difficult to be more specific regarding who should be assessed as sepsis presents in many different ways particularly in the young and elderly Are local systems in place to collect data for proposed quality measures: I suspect that the IT systems necessary to make collection of compliance data are not in place in many units. However certain ED IT systems are more than able to collect this data. Live NEWS scoring with links to automatically generated sepsis proformas planned for our unit in next upgrade of our IT system (EMIS). EMIS system is to be adopted by all Welsh ED's in next few years.
092	Royal College of General Practitioners	Draft statement 1	*There is little problem with page 6, until you get to the top of page 7 when it defines suspected sepsis is used to indicate people who might have sepsis and require face-to-face assessment and consideration of urgent intervention. This is a difficult definition in practice and one that can only be used in hindsight it therefore devalues the suggestions as to what should be done with them that are made on page 6 because one would only know that they needed to be done when either they were done or sepsis had been proven by other means.*
093	Royal College of General Practitioners	Draft statement 1	There is no valid to tool for the stratification of risk of severe illness or death using structured sets of observations that has been validated in a general practice population. This is an extrapolation of hospital evidence which was felt evidenced sufficiently to be included in the guidance. There is no primary care evidence linking any physiological symptom or weighted basket of physiological values to any given illness or outcome.
094	Royal College of General Practitioners	Draft statement 1	Neither of the measures being analysed in the proposed local data collection refer to General Practice or GP led urgent care settings.
095	Royal College of General Practitioners	Draft statement 1	*Service providers (such as primary, ambulatory and secondary care services) ensure that written protocols are in place (such as early warning score) for people with suspected sepsis to be assessed using a structured set of observations to stratify risk.* *This needs to be adjusted to reflect the absence of any evidence-based and therefore quantifiable risk that could be associated with such a structured set of observations.*

ID	Stakeholder	Statement number	Comments[1]
096	Royal College of General Practitioners	Draft statement 1	*Healthcare professionals (such as GPs, paramedics and healthcare professionals working in emergency departments) use a structured set of observations to stratify risk in people with suspected sepsis.* *See previous comments regarding lack of evidence.*
097	Royal College of General Practitioners	Draft statement 1	*Healthcare professionals (such as GPs, paramedics and healthcare professionals working in emergency departments) use a structured set of observations to stratify risk in people with suspected sepsis.* *It is unclear if it is the intention that the above recommendation only apply to clinicians working in an emergency department, it is certainly how the text in brackets can be read.*
098	Royal College of General Practitioners	Draft statement 1	*Commissioners, (such as clinical commissioning groups and NHS England) ensure that they commissioned services in which people presenting with symptoms that suggest sepsis are assessed to stratify risk using a structured set of observations.* *It is unclear from this as to which symptoms are those which should suggest sepsis, given that these are immensely variable and present to general practice on a very frequent basis the requirement to you any kind of structured set of observations would apply to an unmanageable number of patients. We cannot implement this comment even if it were appropriate.*
099	Royal College of General Practitioners	Draft statement 1	*People with symptoms that suggest sepsis are assessed to see whether they have a high risk of life-threatening illness from sepsis and if urgent treatment or more checks are needed.* *See comments above regarding the vagaries of symptoms that could be sepsis and the sheer volume of patients with those symptoms who present in General Practice where sepsis is not the cause or even suggested by further questioning. We cannot implement this comment in its current form and is not clear what this quality standard would add over and above our current commitment to managing sick patients in general.*
100	Royal College of Nursing	Draft statement 1	This statement needs to consider how this will be achieved in settings other than an acute hospital. Delays in primary care detection of sepsis have led to deaths. The emphasis on using NEWS as a national standardised tool for scoring should be more strongly emphasised as the vast majority of hospital trusts are using it and the screening process needs to be standardised.
101	Royal College of Nursing	Draft statement 1	Overall, it is considered that the quality standards seem to be lacking in specific identification of a Paediatric Early Warning Score (PEWS) for children as well as the Adult Early Warning Score (NEWS). Children have very different physiological parameters so it is essential these are captured and are age/weight related. Both should be referred to where relevant.
102	Royal College of Paediatrics and Child Health	Draft statement 1	Where has his data come from? Is it from studies involving children?

ID	Stakeholder	Statement number	Comments[1]
103	Royal College of Paediatrics and Child Health	Draft statement 1	Why not say: do BP in all children with suspected sepsis.
104	Royal College of Paediatrics and Child Health	Draft statement 1	Our reviewer questions the mere presence of a non-blanching rash as a criterion indicating a high risk of severe illness or death from sepsis. A spreading non-blanching rash on the other hand will be a better indicator. In clinical practice most non-blanching rashes even though treated as sepsis, do not turn out to be secondary to meningococcal sepsis.
105	Royal College of Physicians	Draft statement 1	This standard is not clear and is not based on current best available evidence. Current best available evidence is that an aggregate NEWS score of 5 or more is the most sensitive and specific indicator of sepsis in adult patients with infection. This is a better predictor of patients who are likely to do badly, compared to single abnormal observations (red flags). In addition there is no evidence that patients with sepsis and ashen, mottled skin, non-blanching rash etc are being missed. Including these indicators has over-complicated the guideline whilst trying to address a rare problem. We would propose that this quality standard be modified to read " …evidence that patients who have sepsis have had an EWS recorded within 1 hour of arrival to hospital or deterioration". Another option is "…evidence that patients with aggregate NEWS score of 5 or above have been screened for sepsis". This standard should be aligned with or form the basis of the sepsis screening measure in the national CQUIN rather than any separate data collection mechanism. Including or using qSOFA would also be reasonable - qSOFA is not included in NICE guidance despite evidence for it being a useful predictor of poor outcome in sepsis. It is surprising that criteria with limited evidence such as red or amber flags have been included in the NICE sepsis guidelines and quality standard at the expense of other criteria with more evidence.
106	Royal College of Physicians of Edinburgh	Draft statement 1	Observations should be combined with national early warning score systems (NEWS). NEWS is appropriate for any sick patient regardless of cause: the clinician can then decide whether the cause of the deterioration is likely related to infection. The College suggests specifying NEWS ≥5 (or lower, if specific cause for concern) rather than ≥3 as stated in 2nd paragraph on page 5. There is also significant evidence to support the view that diagnostic haste may lead to misdiagnosis which in turn could lead to harm from inappropriate treatment, including use of broad spectrum antibiotics and the associated impact on stewardship.

ID	Stakeholder	Statement number	Comments[1]
			p.6 states: “Structured set of observations Everyone with suspected sepsis should be examined for: • mottled or ashen appearance • cyanosis of the skin, lips or tongue • non-blanching rash of the skin • any breach of skin integrity (for example, cuts, burns or skin infections) • any rash indicating potential infection” The College suggests this list should include signs of other important causes of sepsis including peritonitis and pneumonia. p6 states: “Everyone with suspected sepsis should also have the following assessed: • temperature • heart rate • respiratory rate • level of consciousness • oxygen saturation.” The College notes that these are all assessed within NEWS - a different system for a single disease process is unnecessary.
107	St. Mary’s Hospital & Imperial College London	Draft statement 1	Our reviewers at St. Mary’s Hospital and Imperial College London support the wording and content of Statement 1. They agree that any child in an acute medical environment should receive (repeated) standardized assessments including recording of vital signs. At St. Mary’s these data are routinely collected for children in the emergency department as part of a comprehensive triage system; on the paediatric wards a bedside PEWS system is integrated in routine clinical care and enables nurses to escalate clinical care rapidly and in a timely fashion. Data on the impact of the clinical implementation of a bedside PEWS system will be published as part of the EPOCH trial. However, there is concern that the implementation of this Quality Standard would lead to the development of guidelines that link interventions to vital signs without improving the quality of care offered to patients or the identification of patients with sepsis. Irrespective of their utility or justification, implementation of NICE quality standards for sepsis management has medicolegal implications for judgement of standards of care. Therefore, standards must to be shown to be accurate

ID	Stakeholder	Statement number	Comments[1]
			and reasonable according to strong levels of evidence before they can be published. We are concerned that this is not the case. As part of an ongoing study (SEPSIS: study evaluating predictive signs in sepsis, a collaboration including several teaching and general hospitals), data are being collected on the presenting signs and symptoms of children with fever, and on their subsequent management. We can supply pilot data on a prospective cohort of children who presented to the emergency department at St. Mary's (ICED study, June 2014 – March 2015). This a specialised paediatric emergency department seeing some 30,000 children per year, and is supported by an on-site paediatric intensive care unit and specialist paediatric infectious diseases team. There is a relatively low incidence of significant comorbidity amongst the children in our population (<5%). The cohort consists of 5,233 children with a feverish illness (of 18,903 children): 250 children (5%) aged 12 and over, 1,282 children (25%) between 5 and 12 years, and 3,700 children (70%) aged under 5 years. A high number of children matched a high or moderate-to-high criterion (table 1); in our cohort, in the majority of children with high risk criteria, this was due to abnormal vital signs (table 2). In this cohort 1,945 children had positive warning signs (red/amber) according to the traffic light table of NICE CG160 (Management of feverish illness in children under 5 years) or fulfilled SIRS criteria. A minority had interventions performed with a median time to intervention exceeding one hour without any clear adverse outcome (figure 1). 1,396/1,945 (70%) children matched a high-risk criterion, and of these 143 (10%) children had a known lactate level: 62 children had a lactate level of ³ 2.0 mmol/L (6 had a lactate ³4 mmol/L) and 19 received a fluid bolus vs. 23 children with a lactate level <2.0 mmol/L who received a fluid bolus. Our population included 5 children with culture-proven sepsis; 1 died in the ED, and 5 were admitted to a general ward in hospital: all survived. Six further children with fever were admitted to PICU for various reasons (1 case of appendicitis, one case of intussusception and hypovolaemic shock, one case of encephalitis, one cases of pneumonia, one case of bronchiolitis, one case of status epilepticus) and survived. On review, clinical management appeared appropriate for all cases with immediate escalation of care. These findings suggest that a large number of febrile children fulfil the current criteria for defining high or moderate-to-high risk. Notably, these children activate sepsis pathways because of a raised heart rate and respiratory rate. In the full NICE sepsis guideline, the GWG describes their rationale for including the currently used thresholds for heart rate and respiratory rate. It is commendable that the guideline has moved away from the traditional APLS cut-offs, and therefore from the often used SIRS criteria for defining sepsis, and that the guideline uses updated thresholds based on the systematic review by Fleming et al.(1) However, based on our findings, these threshold values insufficiently take into account the relationship between heart rate, respiratory rate and body temperature. A number of recent prospective observational studies have attempted to adjust normal values of respiratory rate and

ID	Stakeholder	Statement number	Comments[1]
			heart rate for age and temperature,(2, 3) but these do not appear to have been taken into consideration. We realise that the diagnostic performance of these values might not be better than the APLS cut offs or the Fleming thresholds for ruling out sepsis.(4) The temperature adjusted and age specific values for respiratory rate appeared to have better predictive ability for lower respiratory tract infections.(3) Furthermore, the cut off chosen for the upper limit of the heart rate for children aged 12 years and over seems inconsistent with the thresholds chosen for the children aged 5 – 11 years. Rather than grouping the children with the adults, perhaps separate thresholds for children aged 12 to 16 years could be included. SPECIFIC COMMENTS and FEEDBACK In contrast to the NICE guideline CG160 on feverish illness in children, this current guideline explicitly links clinical risk criteria with instant medical interventions. We believe that if implemented in its current form, the guideline may lead to an unwarranted increase in intervention in a large number of patients, and an increase in workload that would hamper the ability of many EDs to properly direct urgent attention to those that actually need it the most. We suggest that this Quality Standard should not be implemented until there is more supporting evidence for its validity from pilot data in different clinical settings which clearly measure the impact of this guideline (and the statements in this Quality Standard). We strongly urge the guideline committee to support local pilot studies providing qualitative and quantitative insight into the effects of implementing this guideline in routine clinical care. Understanding how it influences clinical care pathways is needed to ensure successful implementation, compliance, and trust. These pilot data could also give a better understanding in specifying clinical risk criteria more precisely, in particular in relation to the definition and thresholds of vital signs. Although the NICE guideline on sepsis has not yet been formally implemented in our clinical areas, data on process measures a) and b), as well as outcomes a) and b) are being collected for children in our emergency department.
108	St. Mary's Hospital & Imperial College London	Draft statement 1	We fully support the wording and content of Statement 1. We agree that any child in an acute medical environment should receive (repeated) standardized assessments including recording of vital signs. At St. Mary's these data are routinely collected for children in the emergency department as part of a comprehensive triage system; on the paediatric wards a bedside PEWS system is integrated in routine clinical care and enables nurses to escalate clinical care rapidly and in a timely fashion. Data on the impact of the clinical implementation of a bedside PEWS system will be published as part of the EPOCH trial. However, there is concern that the implementation of this Quality Standard would lead to the development of guidelines that link interventions to vital signs without improving the quality of care offered to patients or the identification of patients with sepsis. Irrespective of their utility or justification, implementation of NICE quality standards for sepsis management has

ID	Stakeholder	Statement number	Comments[1]
			medicolegal implications for judgement of standards of care. Therefore, standards must to be shown to be accurate and reasonable according to strong levels of evidence before they can be published. We are concerned that this is not the case. As part of an ongoing study (SEPSIS: study evaluating predictive signs in sepsis, a collaboration including several teaching and general hospitals), data are being collected on the presenting signs and symptoms of children with fever, and on their subsequent management. We can supply pilot data on a prospective cohort of children who presented to the emergency department at St. Mary's (ICED study, June 2014 – March 2015). This a specialised paediatric emergency department seeing some 30,000 children per year, and is supported by an on-site paediatric intensive care unit and specialist paediatric infectious diseases team. There is a relatively low incidence of significant comorbidity amongst the children in our population (<5%). The cohort consists of 5,233 children with a feverish illness (of 18,903 children): 250 children (5%) aged 12 and over, 1,282 children (25%) between 5 and 12 years, and 3,700 children (70%) aged under 5 years. A high number of children matched a high or moderate-to-high criterion (table 1); in our cohort, in the majority of children with high risk criteria, this was due to abnormal vital signs (table 2). In this cohort 1,945 children had positive warning signs (red/amber) according to the traffic light table of NICE CG160 (Management of feverish illness in children under 5 years) or fulfilled SIRS criteria. A minority had interventions performed with a median time to intervention exceeding one hour without any clear adverse outcome (figure 1). 1,396/1,945 (70%) children matched a high-risk criterion, and of these 143 (10%) children had a known lactate level: 62 children had a lactate level of ³ 2.0 mmol/L (6 had a lactate ³4 mmol/L) and 19 received a fluid bolus vs. 23 children with a lactate level <2.0 mmol/L who received a fluid bolus. Our population included 5 children with culture-proven sepsis; 1 died in the ED, and 5 were admitted to a general ward in hospital: all survived. Six further children with fever were admitted to PICU for various reasons (1 case of appendicitis, one case of intussusception and hypovolaemic shock, one case of encephalitis, one cases of pneumonia, one case of bronchiolitis, one case of status epilepticus) and survived. On review, clinical management appeared appropriate for all cases with immediate escalation of care. These findings suggest that a large number of febrile children fulfil the current criteria for defining high or moderate-to-high risk. Notably, these children activate sepsis pathways because of a raised heart rate and respiratory rate. In the full NICE sepsis guideline, the GWG describes their rationale for including the currently used thresholds for heart rate and respiratory rate. It is commendable that the guideline has moved away from the traditional APLS cut-offs, and therefore from the often used SIRS criteria for defining sepsis, and that the guideline uses updated thresholds based on the systematic review by Fleming et al.(1) However, based on our findings, these threshold values insufficiently take into account the relationship between heart rate, respiratory rate and body temperature. A

ID	Stakeholder	Statement number	Comments[1]
			number of recent prospective observational studies have attempted to adjust normal values of respiratory rate and heart rate for age and temperature,(2, 3) but these do not appear to have been taken into consideration. We realise that the diagnostic performance of these values might not be better than the APLS cut offs or the Fleming thresholds for ruling out sepsis.(4) The temperature adjusted and age specific values for respiratory rate appeared to have better predictive ability for lower respiratory tract infections.(3) Furthermore, the cut off chosen for the upper limit of the heart rate for children aged 12 years and over seems inconsistent with the thresholds chosen for the children aged 5 – 11 years. Rather than grouping the children with the adults, perhaps separate thresholds for children aged 12 to 16 years could be included. SPECIFIC COMMENTS and FEEDBACK In contrast to the NICE guideline CG160 on feverish illness in children, this current guideline explicitly links clinical risk criteria with instant medical interventions. We believe that if implemented in its current form, the guideline may lead to an unwarranted increase in intervention in a large number of patients, and an increase in workload that would hamper the ability of many EDs to properly direct urgent attention to those that actually need it the most. We suggest that this Quality Standard should not be implemented until there is more supporting evidence for its validity from pilot data in different clinical settings which clearly measure the impact of this guideline (and the statements in this Quality Standard). We strongly urge the guideline committee to support local pilot studies providing qualitative and quantitative insight into the effects of implementing this guideline in routine clinical care. Understanding how it influences clinical care pathways is needed to ensure successful implementation, compliance, and trust. These pilot data could also give a better understanding in specifying clinical risk criteria more precisely, in particular in relation to the definition and thresholds of vital signs. Although the NICE guideline on sepsis has not yet been formally implemented in our clinical areas, data on process measures a) and b), as well as outcomes a) and b) are being collected for children in our emergency department.
109	The British Society for Antimicrobial Chemotherapy (BSAC)	Draft statement 1	May be more difficult to assess this in primary care – NICE needs to be clear what the structured set of observations should be.
110	The British Society for Antimicrobial Chemotherapy (BSAC)	Draft statement 1	It is unclear whether this statement also refers to primary care. If so, throught needs to go into the practical abilityto measure physiological parameters in primary care. The majority of GP practices do not have oxygen saturation probes that can accurately measure saturations in babies and young children. Could part of this standard include an explicit request that “organisations to which patients present acutely must possess the equipment required to measure physiological parameters, including oxygen saturations in young children”

ID	Stakeholder	Statement number	Comments[1]
111	The Royal College of Anaesthetists	Draft statement 1	Q5 - The nature of sepsis is such that it can affect the seemingly healthy and young. This makes it quite challenging to narrow down the definition, and while it is natural to focus on vulnerable patients or patient groups, it is almost impossible to predict with absolute certainty who will or will not be affected by sepsis.
112	The Royal College of Anaesthetists	Draft statement 1	Observations must be amalgamated with NEWS and criteria indicating high risk of death integrated into routine obs. Cannot be a separate system. NEWS is validated for any sick patient regardless of cause. The clinician can then decide whether the cause of the deterioration is likely related to infection. Perhaps specify NEWS ≥5 (or lower, if specific cause for concern) not ≥3 as stated in 2nd para on page 5 Numerator. Hospitals with electronic patient data systems will be able to add "patient screened for sepsis" to observation log. Unclear how this would work in hospitals still using paper based systems. Difficulties may arise in identifying people with 'suspected sepsis' from coding systems and hospital record management systems retrospectively. Where will the index time, to which this one hour time period refers to, be taken from? Denominator. Would be vital to record how many were initially treated for sepsis but on further consideration where found to have conditions which were not benefited by a broad spectrum antibiotic and fluid e.g. heart failure. This latter aspect could be ascertained in patients who are admitted to critical care using ICNARC data if initial and final diagnosis (if different) were added. It will be important to balance the benefit of rapid diagnosis and treatment of sepsis against any potential harm from misdiagnoses. There is much evidence in the literature to support the view that diagnostic haste may lead to misdiagnosis which in turn could lead to harm from inappropriate treatment. (1,2,3,4,5)
113	The Royal College of Anaesthetists	Draft statement 1	*Everyone with suspected sepsis should be examined for:* *· mottled or ashen appearance* *· cyanosis of the skin, lips or tongue* *· non-blanching rash of the skin* *· any breach of skin integrity (for example, cuts, burns or skin infections)* *· any rash indicating potential infection* *This list does not and should include signs of other important causes of sepsis including peritonitis, pneumonia and meningitis.*

ID	Stakeholder	Statement number	Comments[1]
114	The Royal College of Anaesthetists	Draft statement 1	· *temperature* · *heart rate* · *respiratory rate* · *level of consciousness* · *oxygen saturation.* *All of these are assessed within NEWS - it does not seem sensible to use a different system for a single disease process.*
115	The Royal College of Anaesthetists	Draft statement 1	Whilst a laudable aim this is simply not possible in the NHS at present on a 24/7 basis
116	The Royal College of Pathologists	Draft statement 1	The literature strongly suggests that diagnostic haste often leads to diagnostic error, and harm from inappropriate treatment, so a balance needs to be struck and a record kept of misdiagnosis and outcome, so we can audit and feedback. NEWS is validated for all sick patients regardless of cause, so any proposed additional observations should be combined with this. It will then be possible to ascertain whether the cause of the deterioration is caused by infection.
117	Alder Hey Children's NHS Foundation Trust	Question 5	Not easy to define this group. Important to allow some clinical judgement in who warrants full assessment
118	Cardiff and Vale University Local Health Board	Question 5	I think this is fine as written.
119	Great North Children's Hospital Newcastle upon Tyne Foundation Hospitals Trust	Question 5	Sepsis is defined as "life threatening organ dysfunction caused by a dysregulated host response to infection". Septic shock a subset of sepsis in which "particularly profound circulatory, cellular and metabolic abnormalities are associated with a greater risk of mortality than with sepsis alone". This definition of sepsis is descriptive and not specific to the recognition of paediatric sepsis.
120	Integrated Care 24 Ltd	Question 5	NG51 defines a risk stratification tool (which is age related and useful). The tool however is not ideal and isn't scored. It documents high-risk factors, like the child "appearing ill to the healthcare professional" …hence some significant subjectivity. Whether assessment can be boiled down in to fewer points, of less subjectivity and more conducive to scoring is unlikely (certainly without appropriate evidence based research).
121	NHS England	Question 5	Question 5 : Inclusions would relate to people being assessed for infections, recording of abnormal vital signs, new confusion, sudden deterioration in achievement of activities of daily living, and clinician or parental concern. There should be a low threshold for suspicion of sepsis in anyone with reduced immune capacity due to either a medical condition or due to drug treatment.

ID	Stakeholder	Statement number	Comments[1]
122	North West Ambulance Service NHS Trust	Question 5	Quality statement 1 does require further development on defining the patient group “people with suspected sepsis”. This can be done by using an evidence based screening tool which North West Ambulance Service is already doing to determine the level of severity of sepsis in pre hospital patients.
123	Public Health England	Question 5	We think the signs of sepsis and risks should be higher up along with the guidance link. Sepsis needs to be the first thing clinicians think about if someone presents with the symptoms.
124	Royal College of Paediatrics and Child Health	Question 5	Our reviewer feels that there is no need to be more specific. All unwell children should have certain observations done such as those used to contribute to a Paediatric Early Warning Score. Heart rate and respiratory rate as a minimum.
125	Royal College of Paediatrics and Child Health	Question 5	Re defining sepsis: Our reviewer agrees that there is no clear way to define sepsis. However, it would be helpful if the guideline stated “suspected sepsis” clearly as much as possible (in user friendly format).
126	The British Society for Antimicrobial Chemotherapy (BSAC)	Question 5	I agree that this needs to be clarified. At present, there is no clarify about which cohort of patients this ‘screening’ approach is applied to. In addition, the implications for primary care a huge if they are expected to check the physiological parameters of every acute presentation! This is not feasible in primary care and will not be implemented. In a hospital setting, one can suggest that every acute presentation is evaluated using this tool.
127	The Royal College of Anaesthetists	Question 5	A. Patients with a NEWS score ≥5 or lower if specific cause for concern including signs listed on page 6.
128	Advisory Committee on Antimicrobial Prescribing, Resistance and Healthcare Associated Infection.	Draft statement 2	People with suspected sepsis in acute hospital settings and at least 1 criteria indicating high risk of severe illness or death are reviewed by a senior clinical decision-maker within 1 hour of risk being identified. The number of patients identified in this way for senior review is excessive and not likely to be workable and will make treatment within 1 hour less likely. Review by a senior following the first dose would be more likely to allow reduction of broad spectrum antimicrobial prescribing. The use of antibiotics by ambulance staff will increase broad spectrum antimicrobial use and worsen resistance.
129	British Infection Association	Draft statement 2	People with suspected sepsis in acute hospital settings and at least 1 criteria indicating high risk of severe illness or death are reviewed by a senior clinical decision-maker within 1 hour of risk being identified. A senior clinical decision-maker is described in the document as ST3 or above or an ANP with prescribing skills We agree that a senior review is important but if a high number (e.g. using NEWS 3 or above) of medical admissions are defined by NICE criteria as septic this becomes very difficult to achieve. In a pragmatic approach many hospitals now have a critical care assessment for those with NEWS of 5 or above whether sepsis or other causes. This standard will have a significant impact on workflow and this needs to be considered. The evidence base for some of these risk factors is limited, and some may be difficult to audit retrospectively. There is

ID	Stakeholder	Statement number	Comments[1]
			reasonable evidence for association of aggregate early warning scores (EWS, e.g. NEWS) with outcome in sepsis, and aggregate EWS (e.g. NEWS or equivalent) would be easier to audit consistently across departments and organisations. Use of EWS would better align sepsis with the national move to standardise recognition and assessment of all sick or deteriorating patients. Insistence upon a specific grade without robust supporting evidence might be detrimental to overall care provision by not allowing local clinicians to triage need among their patients. The outcome for this standard is described in 1a as those receiving antibiotics within one hour however, this is less not more likely to be achieved by introducing a requirement for senior level review. And how is the presence or absence of a senior review to be assessed by such a standard? The review is important in assessment of need for critical care and in reducing the prescribing of broad-spectrum antibiotics after the first hour, once the source is identified. We would support a review by a senior clinician following a first dose (this need not be within an hour) to stop any antibiotics considered unnecessary. Emergency department overcrowding is currently responsible for significant delays in patients being seen. Patients who require review within 1 hour by critical care, ST3 or sepsis nurse should be patients who have NEWS of 5 or more, positive qSOFA or septic shock – persistently low BP or lactate greater than 4 mmol/L despite fluid resuscitation. Equating all ANPs to ST3 review is not appropriate. Senior review should be at least ST3 or advanced nurse practitioner from critical care team or a nurse from a sepsis team. The use of antibiotics by ambulance staff may be justified but it is almost certainly going to lead to greater and broader antibiotic use. At a time when most clinical junior staff who have access to bloods, ABG's, CXR and other opinions (such as ST1/2) are not deemed suitable prescribers this needs further thought and explanation as to why the review must be ST3+ in this first hour. If the reason is for a critical care assessment this should be based on a higher NEWS score (e.g. 5 or above) and need not be linked to sepsis but could apply to all those in hospital (with an alternative NEWS criteria perhaps for those in the community).
130	Cardiff and Vale University Local Health Board	Draft statement 2	While agreeing that review by a senior clinical decision maker is essential, particularly if patient care is either to be escalated or deemed inappropriate (e.g. end of life care, clinical frailty), there is a time imperative to deliver intravenous antibiotics in high risk ("Red Flag") sepsis and septic shock. The use of a sepsis screening tool should empower trainee doctors from FY1 upwards to prescribe (and administer where necessary) a first dose of empirical IV antibiotic in accordance with local guidance (often available in the form of "Microguide" or similar) without having to wait for a more senior colleague to attend. Good antimicrobial stewardship should ensure that antibiotic prescriptions are reviewed in a timely manner with appropriate changes make, including discontinuation.

ID	Stakeholder	Statement number	Comments[1]
131	Faculty of Intensive Care Medicine & Intensive Care Society	Draft statement 2	It is unclear still who this might be. It refers to an ANP who may have prescribing responsibilities, yet all F1/2 trainees and all CT1/2 trainees have prescribing responsibilities. For children under 5 years, not all hospitals will have access to a paediatric trained registrar or consultant in the ED
132	Great North Children's Hospital Newcastle upon Tyne Foundation Hospitals Trust	Draft statement 2	In our hospital and our regional district general hospitals, we would struggle to find sufficient doctors of ST4 and above to review the children who have triggered at least 1 red flag according to NICE guidelines. This is a particular problem at nights and weekends. (30% of all emergency department admissions are for fever, 70% of febrile children in our study triggered red flags). In our experience Advanced Nurse Practitioners (ANP) have as much experience as junior doctors in the recognition of deteriorating and septic children and have been included under 'senior review' for adult patients but not in paediatric draft guidelines. We currently use paediatric ANPs in the timely senior review and assessment of sick and septic children in our hospital to good effect.
133	Integrated Care 24 Ltd	Draft statement 2	We question how well-known the 1 hour standard is known amongst all clinicians? Most patients will be seen in hospital within the hour but possibly by default than by design.
134	National Sepsis Cluster, National Patient Safety Collaborative All Academic Health & Science Networks' Sepsis leads and Clinical leads for sepsis from each acute trust in England.	Draft statement 2	People with suspected sepsis in acute hospital settings and at least 1 criteria indicating high risk of severe illness or death are reviewed by a senior clinical decision-maker within 1 hour of risk being identified. What is the evidence base behind high risk criteria. The MET data proved it was not as useful as aggregate NEWS, what extra does it add- except for extra workload? Prytherch DR, Smith GB, Schmidt PE, st al. ViEWS-Towards a national early warning score for detecting adult inpatient deterioration. Resuscitation. 2010 Aug;81(8):932-7 Jarvis, S., Kovacs, C., Briggs, J., Meredith, P., Schmidt, P.E., Featherstone, P.I., Prytherch, D.R. and Smith, G.B., 2015. Aggregate National Early Warning Score (NEWS) values are more important than high scores for a single vital signs parameter for discriminating the risk of adverse outcomes. Resuscitation, 87, 75-80 Smith GB, Prytherch DR, Jarvis S, et al. A Comparison of the Ability of the Physiologic Components of Medical Emergency Team Criteria and the U.K. National Early Warning Score to Discriminate Patients at Risk of a Range of Adverse Clinical Outcomes. Crit Care Med. 2016 Dec;44(12):2171-2181. What studies back it up? There is no evidence around red flag sepsis being a marker of organ dysfunction or of being associated with a poor prognosis. They were just "taken" from the UKST (non evidenced based toolkits) which were taken from the NEWS extreme parameters. They have never been validated. They were we presume a "guess" at what organ dysfunction could be represented by.

ID	Stakeholder	Statement number	Comments[1]
			Dissected apart: Response to voice Systolic BP <90 Resp rate >25 Needs Oxygen to maintain sats>92% Lactate >2 Non-Blanching rash/mottled/cyanotic (why is this in here – there is no relationship between these and organ dysfunction) Recent chemotherapy Urine output <18 hours. <0.5 ml/kg/hour is not usable terminology in a snap assessment of a deteriorated patient in the community, emergency department or indeed on the wards. The only values that may be a marker of organ dysfunction are BP<90 and needs oxygen to maintain sats (though debatable) The historical and examination findings are not valid. The mandatory Senior review target adds yet another target, besides delivering appropriate care within one hour. If NICE guidance is followed, this becomes an unrealistic target in the ED and in inpatients – the denominator is just too high. Even using NEWS/qSOFA, this is ambitious but arguably more achievable. There is the potential to have a negative impact on the care of other patient groups by inappropriately focussing efforts towards a moderately unwell group. Ignoring the views of the country's healthcare professionals and the evidence base is not sensible. We are assuming that the definition of sepsis is patients with infection and any evidence of organ dysfunction. It would be unreasonable to expect all patients with sepsis to have review by at least an ST3 within 1 hour. ED waiting times cause significant delays from arrival, triage to being reviewed. It would seem reasonable to make this time 3 or 4 hours in line with ED waiting times and also in line with surviving sepsis campaign guidelines. I agree that senior review should be at least ST3 or advanced nurse practitioner from critical care team or nurse from a sepsis team. Advanced nurse practitioners are not as trained as junior doctors so equating all ANPs to ST3 review is not appropriate. We would recommend review by ANP or nurse with specialist training in sepsis or critical care. Patients who require review within 1 hour by critical care, ST3 or sepsis nurse would be patients who have septic shock – persistently low BP or lactate more than 4 despite fluid resuscitation.

ID	Stakeholder	Statement number	Comments[1]
			The evidence base for some of these risk factors is limited, and some may be difficult to audit retrospectively. There is reasonable evidence for association of aggregate early warning scores (EWS, e.g. NEWS) with outcome in sepsis, and aggregate EWS (e.g. NEWS or equivalent) would be easier to audit consistently across departments and organisations. Use of EWS would better align sepsis with the national move to standardise recognition and assessment of all sick or deteriorating patients. As written the guidance for adult patients about what constitutes a 'Senior Medical Decision Maker' is advisory not didactic about the grade of doctor that qualifies, which is welcome. The guidance for paediatrics is more didactic ("paediatric or emergency care qualified doctor of grade ST4 or above or equivalent"). However experience from some UK centres suggests it is important to empower other cadres of clinicians, including senior paediatric nurses, to review and if necessary de-escalate treatment/rule out sepsis. Insistence upon a specific grade without robust supporting evidence might be detrimental to overall care provision by not allowing local clinicians to triage need among their patients, and might inappropriately divert resources / clinicians away from equally or more pressing clinical emergencies. PAEDS UHS Paediatric comment: If children are identified as being truly high risk for sepsis on arrival in the acute setting, we agree that a prompt senior review is essential to ensure rapid and appropriate escalation (or de-escalation) of care and decision making around identification of the source of sepsis and treatment required. There are unique challenges with this in the paediatric population, in particular in the younger age ranges, surrounding cannulation, antibiotic dosing by weight and accurate assessment which require early senior input. Whilst there may not be studies supporting a senior review specifically within an hour, use of accurate sepsis screening to identify those in the high risk group using a combined set of criteria (rather than a single observation) should not inappropriately increase workload and should enable prompt and appropriate prioritisation of this small group of patients. Younger children have a small physiological reserve and so rapid identification, investigation, fluid resuscitation and antibiotic treatment would positively influence outcome from sepsis. Our Data from a cohort of 703 patients admitted acutely between October and December 2016 at UHS showed that using the NICE tool would prompt urgent senior assessment for high risk of sepsis in 136 patients (19% of all acute admissions), but using the combined criteria on the TVW screening tool in the same 703 patients, identified only 67 patients (9.5%) requiring urgent senior assessment. All patients identified using the TVW tool were identified using the NICE tool and of the entire cohort, only 3 patients had positive blood cultures and a discharge diagnosis consistent with bacterial sepsis, all of whom were identified by both screening tools. Thus, the importance of selecting the high risk group as accurately as possible means that workload would not be unnecessarily increased.

ID	Stakeholder	Statement number	Comments[1]
			Newcastle upon Tyne Foundation Trust Hospitals (NUTH) and the Hospitals represented in the Paediatric Resilience Collaborative covering the North East and North Cumbria (NENC) sector, do not have complete electronic records, paediatric early warning scores, observations and prescribing. This means that data collection will be time consuming and difficult. Currently in NUTH we only have partial electronic records, no electronic prescribing in ED and acute admissions and no electronic observations scores. Sunderland Hospital is one of the only fully electronic regional district hospitals. It is not feasible to put these complex systems in place within the 4 months before the implementation of these quality standards. We conducted a prospective cohort study over two months (May- June 2016) to describe current practice and model the new sepsis guideline-based practice based on these parameters. 285 consecutive patients presenting to a tertiary centre emergency department with fever >/=38·5 0C were included; 174 male (61·1%), age range 0 - 15·2 years (median 2·1 years), comorbidity present in 45 (13·8%). Sepsis was defined as SIRS criteria plus proven infection. 21 patients (7·4%) had full sepsis screens (blood tests, chest X-ray, lumbar puncture and intravenous (IV) antibiotics). Diagnoses included, two sepsis, seven viral meningitis, three urinary tract infection, one lower respiratory tract infection (LRTI), three viral illness, two fever post-immunisation, one skin infection and two fever unknown origin (FUO). No sepsis occurred in the 264 patients (92·6%) not screened. 206 (72·3%) would have been eligible for sepsis screens according to new NICE guidelines (“red flags”), a ten-fold increase. 27 (9·5%) children received IV antibiotics and one intramuscular (IM) (21 for possible sepsis, two tonsillitis, four LRTI and one FUO). All survived. Median length of stay for the 21 patients screened for sepsis was 2 days (range 1-10). Modelling the NICE sepsis guidelines to actual data, demonstrates a potential tenfold increase in investigation and treatment of sepsis, equivalent to an estimated increase of 2220 bed days/year (6.1 beds/year), resulting in unnecessary harm, poor antibiotic stewardship, and a major burden on the health system over winter. Current available diagnostics lack sensitivity and specificity to accurately identify children with bacterial sepsis which has led to the development of guidelines. We believe that current protocols, particularly those including physiological parameters triggering escalation require robust underpinning with data. The new NICE guidelines would benefit from validation and adjustment. We call for a national database to enable shared learning and evidence based algorithms aiding but not replacing clinical judgment.
135	NHS England	Draft statement 2	Statement 2 : where says ‘rates of antibiotic prescribing’ I would amend this add ‘in line with local antimicrobial policy’
136	NHS England	Draft statement 2	Statement 2 People with suspected sepsis in acute hospital settings and at least 1 criteria indicating high risk of severe illness or death are reviewed by a senior clinical decision-maker within 1 hour of risk being identified. Would it be more effective to up skill junior staff to take appropriate action?

ID	Stakeholder	Statement number	Comments[1]
137	NHS England	Draft statement 2	Statement 2 The use of the term “senior decision maker” has the potential to cause a lot of confusion and should not be used. In general, this term means “Consultant”. However, I understand that for this QS the term is defined as, “a doctor of CT3/ST3 or above”. Certainly within surgery, a doctor of this grade would not be considered a “senior decision maker” but I can understand why this may be for the management of sepsis not requiring surgery. For clarity, should the QS not simply state that the patient must be seen within 1 hour by a doctor of grade CT3/ST3 or above.
138	NHS England	Draft statement 2	Sepsis is a medical emergency and needs immediate senior review to identify the source of infection and ensure that people receive appropriate treatment. A senior decision-maker is also more likely to recognise if there is another potential cause for the person’s severe illness. Should this include effective training in place to up skill junior team members to be more able to undertake these decisions? a senior clinical decision-maker – clarification as to what training proves sufficient competency?
139	NHS England	Draft statement 2	Antibiotic review and cessation if inappropriate (based on results of diagnostics) has not been included
140	Nottingham University Hospitals NHS Trust	Draft statement 2	The definition of Senior clinical decision maker requires further clarity. Currently the wording is open to local interpretation of what consist a senior clinical decision maker. NICE guidelines require Consultant review if there is failure to improve, whereas this quality statement implies that it is about a medical review by a doctors who is capable of prescribing antibiotics. Ideally, there needs to be an urgent assessment by a clinical decision maker capable of prescribing antibiotics, and then rapid review by someone more senior.
141	Regional Sepsis Stakeholder Group of the Oxford AHSN Patient Safety Collaborative.	Draft statement 2	People with suspected sepsis in acute hospital settings and at least 1 criteria indicating high risk of severe illness or death are reviewed by a senior clinical decision-maker within 1 hour of risk being identified. The evidence base for some of these risk factors is limited, and some may be difficult to audit retrospectively. There is reasonable evidence for association of aggregate early warning scores (EWS, e.g. NEWS) with outcome in sepsis, and aggregate EWS (e.g. NEWS or equivalent) would be easier to audit consistently across departments and organisations. Use of EWS would better align sepsis with the national move to standardise recognition and assessment of all sick or deteriorating patients. As written the guidance for adult patients about what constitutes a ‘Senior Medical Decision Maker’ is advisory not didactic about the grade of doctor that qualifies, which is welcome. The guidance for paediatrics is more didactic (“paediatric or emergency care qualified doctor of grade ST4 or above or equivalent”). However experience from some UK centres suggests it is important to empower other cadres of clinicians, including senior paediatric nurses, to review and if necessary de-escalate treatment / rule out sepsis. This is particularly important as the specificity of NICE high risk criteria for paediatric sepsis is poor due to the very high

ID	Stakeholder	Statement number	Comments[1]
			presenting caseload of viral infections in children (see quality standard 3 below). Insistence upon a specific grade without robust supporting evidence might be detrimental to overall care provision by not allowing local clinicians to triage need among their patients, and might inappropriately divert finite resources / clinicians away from equally or more pressing clinical emergencies. We would not therefore support this quality standard as written.
142	Royal College of Emergency Medicine	Draft statement 2	This statement will be hard to meet as many units receiving children will not have access to ST4 paeds doctor / EM doctor on site and .many ED's do not have 24 hour cover with ST3/4 doctors. Even in units with ST4 EM doctors but no onsite paediatrics would fail to meet the standard for the <5 year age group. This would potentially be achievable for adults with increased resources for ANP development and their presence 24 hours a day
143	Royal College of Emergency Medicine	Draft statement 2	Senior clinical decision maker – the definition of this for children under 5 is different from the sepsis guideline. It should accommodate for the expertise in Emergency medicine as per NG 51.
144	Royal College of Emergency Medicine	Draft statement 2	NG51 and this quality standard advocate senior clinical decision maker "someone who is authorised to prescribe antibiotics such as a doctor of grade CT3/ST3". An ST3 is certainly authorised to prescribe antibiotics but so are more junior grades. If the goal is to administer antibiotics within an hour, then we need not specify someone so senior. Can the senior not be within 2 hours when a response to fluid, antibiotics and oxygen can be better assessed, and when all the additional investigations that NG51 recommend are available?
145	Royal College of Emergency Medicine	Draft statement 2	The resource impact for achieving ST3 review within an hour has been underestimated by the advisory committee. Whilst the goal is desirable, staffing, crowding and resource within EDs are such that achieving this standard will be very challenging. Many departments currently adopt an approach of starting initial therapy with subsequent review within a more achievable time frame.
146	Royal College of Paediatrics and Child Health	Draft statement 2	Re: Senior clinical decision makers. Whilst it would be good if there were always paediatric and ED ST4 doctors available within an hour, this is not practicable. Emergency Department "middle grades" overnight are often only ST3 equivalent. This would mean an extra load on the night paediatric registrar who is likely to be also covering a ward +/- neonatal unit. Our reviewer wonders if this is an opportunity to push the role of nurse consultant or paediatric prescribing Emergency Nurse Practitioner? The guideline says "A 'senior clinical decision maker' for children aged 5–11 years is a paediatric or emergency care doctor of grade ST4 or above or equivalent." Can you put the "or equivalent" in here?
147	Royal College of Paediatrics and Child Health	Draft statement 2	Our reviewer suggests that the age ranges change. Paediatricians do not normally see young people in the ED beyond their 16th birthday. They suggest that the first paragraph is for young people of 16 or above and the second paragraph is for 5 to 15 year olds. They recognise that the guideline has the same cut offs so might not be possible to

ID	Stakeholder	Statement number	Comments[1]
			change. They advise that Quality Standards (and guidelines) need to be kept realistic though – otherwise they get ignored.
148	Royal College of Paediatrics and Child Health	Draft statement 2	Our reviewer asks: Where has >12 being treated as adults come from?
149	Royal College of Paediatrics and Child Health	Draft statement 2	Our reviewer asks: Where is this data from, particularly in relation to children?
150	Royal College of Paediatrics and Child Health	Draft statement 2	Our reviewer asks: The difference in RR by age – where are these values taken from?
151	Royal College of Paediatrics and Child Health	Draft statement 2	Our reviewer feels that these are too low to be considered as sepsis and suggests using POP values instead.
152	Royal College of Paediatrics and Child Health	Draft statement 2	In regards to the under 5's, our reviewer feels this should include all senior ED doctors decision and not just those from a paediatric background.
153	Royal College of Physicians	Draft statement 2	We are assuming that the definition of sepsis is patients with infection and any evidence of organ dysfunction. It would be unreasonable to expect all patients with sepsis to have review by at least an ST3 within 1 hour. ED waiting times cause significant delays from arrival, triage, to being reviewed by a clinician. It would seem reasonable to make this time 3 or 4 hours in line with ED waiting times and also in line with surviving sepsis campaign guidelines. I agree that senior review should be at least ST3 or advanced nurse practitioner from critical care team or nurse from a sepsis team. Advanced nurse practitioners are not as trained as junior doctors so equating all ANPs to ST3 review is not appropriate. We would recommend review by ANP or nurse with specialist training in sepsis or critical care. Patients who require review within 1 hour by critical care, ST3 or sepsis nurse would be patients who have septic shock – persistently low BP or serum lactate greater than 4 mmol/l despite fluid resuscitation. The same comments about definition of sepsis apply –see statement 1 above.
154	Royal College of Physicians of Edinburgh	Draft statement 2	The College agrees that senior review is important but if a high number (e.g. using NEWS 3 or above) of medical admissions are defined by NICE criteria as septic this would be unsustainable. Many hospitals now take a practical approach and have a critical care assessment for those with NEWS of 5 or above for all causes. This standard would have a considerable impact on workflow and this must be taken into account.

ID	Stakeholder	Statement number	Comments[1]
155	Society for Acute Medicine	Draft statement 2	We are concerned that many older people with an acute infection develop delirium. We clearly accept that such patients need urgent attention but many will not have sepsis. We feel that NICE should consider resource provision for this recommendation, especially out-of-hours acre and in acute medical units and general medical wards.
156	Society for Acute Medicine	Draft statement 2	The definition of a senior clinical decision maker is vague. Out CMT3/ST3 and ANP colleagues are certainly more than capable of caring for patients with sepsis, but are they 'senior'. Is the term 'competent' more appropriate, and why are CMT 1 and 2 doctors excluded from the definition?
157	St. Mary's Hospital & Imperial College London	Draft statement 2	This statement potentially will drive an enormous shift in utilization of clinical resources when dealing with febrile children presenting to acute medical services. As supported by the above pilot data, a large proportion of children will need to be seen directly (at least within 1 hour) by a senior decision maker, diverting this person from other duties and responsibilities. It will force nurses to focus on administration of early antibiotics and fluids, delaying or delegating other clinical duties that may have equal urgency. It will result in fewer learning opportunities for junior doctors as children triggering sepsis tools will likely be fast tracked and bypass them. As a direct consequence, medical decision making and initiation of treatment for children with true sepsis, who require even more urgent assessment and interventions, might be delayed. The knock-on potential harm to other patient groups under the care of senior decision makers does not appear to have been considered within the scope of the guideline. The significant resource implications of implementing this Quality Standard demand a high level of confidence in the accuracy of the high-risk criteria that would activate the pathway for senior review. Following our concerns that the high-risk criteria are neither adequately evidenced nor accurate for the prediction of serious illness related to sepsis, we consider that Statement 2 lacks justification. One suggestion for improving Statement 2 could be to include a dual route for children triggering a sepsis pathway. Much like bedside PEWS, a sepsis trigger tool could empower the nurse either: 1) continue care for this child under closer observation with regular vital signs being measured and recorded while notifying a senior nursing colleague 2) escalate care to nurse-in-charge, 3) escalate care to senior decision maker immediately (ie: ST4 or above for paediatric patients). Together with all stakeholders, agreement could be reached for certain 'red flags' that would require direct escalation to the senior decision maker. It is clear from our pilot data that for most children in the emergency department with a raised heart rate or respiratory rate a careful watchful waiting approach would be justifiable. Pre-implementation data on outcome a) and b) are available and continue to being collected.
158	The British Society for Antimicrobial Chemotherapy (BSAC)	Draft statement 2	Heart rate ranges appear incorrect – 1 year >160, 1-2 years >150, 3-4 years >140, 5 years >130, 6-7 years >120, 8-11 years >115, >12 years 130. I suspect that different normal range references have been used for children and adults, resulting in a higher abnormal HR range in a 12 year old (or adult) than a 6 year old! Needs amending.

ID	Stakeholder	Statement number	Comments[1]
159	The Royal College of Anaesthetists	Draft statement 2	Locally taken to mean ST3 or above. Pressure of work can make compulsory review within 1 hour difficult to achieve in many hospitals out of hours when cover is by Foundation doctors or Hospital at Night staff. Other resources, such as high dependency/ intensive care beds and ICU outreach teams, which could be the back-up for the paucity of senior decision makers are already overstretched. Children under 5 presenting to some DGHs may not be seen by a paediatric qualified doctor in ED.
160	The Royal College of Anaesthetists	Draft statement 2	*objective evidence of new altered mental state* *respiratory rate of 25 breaths per minute or above, or new need for 40% oxygen or more to maintain oxygen saturation more than 92% (or more than 88% in known chronic obstructive pulmonary disease)* *heart rate of 130 beats per minute or above* *systolic blood pressure of 90 mmHg or less, or systolic blood pressure more than 40 mmHg below normal* *not passed urine in previous 18 hours (for catheterised patients, passed less than 0.5 ml/kg/hour)* *mottled or ashen appearance* *cyanosis of the skin, lips or tongue* *non-blanching rash of the skin.* *Many non-septic inpatients have urine output <0.5 ml/kg/hr.* *Common to have pyrexia and oliguria on Day 1 post-op related to response to surgery and ADH secretion or response to hypovolaemia.* *Where is the evidence this is life-threatening and needs review within 1 hour?* *Conversely, in an acutely unwell patient 18 hours anuria is too long.* *There are many other causes for tachycardia or hypotension which are readily correctable (e.g. pain relief, fluid bolus for those not taking enough fluid) and not related to a sepsis process. Immediate antibiotics are inappropriate in such patients.* *Again, we have a robust and validated system in NEWS for patient observations and we do not support using another system. Specific signs e.g. rash could be included into NEWS.* *It is important that patient deterioration from ALL causes is recognised and promptly dealt with.*
161	The Royal College of Pathologists	Draft statement 2	Review within 1 hour is often impractical out of hours and there is no robust evidence for it (see below) See comment above about the importance of continuing to use NEWS.

ID	Stakeholder	Statement number	Comments[1]
162	Advisory Committee on Antimicrobial Prescribing, Resistance and Healthcare Associated Infection.	Draft statement 3	People with suspected sepsis in acute hospital settings and at least 1 criteria indicating high risk of severe illness or death have antibiotic treatment within 1 hour of risk being identified. This statement provides no guidance on the choice of antibiotic and will result in greater use of broad spectrum agents increasing antimicrobial resistance. Antibiotic appropriate for the infection (according to local formulary) as well as source control are required. Oliguria and fever are extremely common in non-septic inpatients. Is it clear from draft statement 3 that the full course of antibiotics should be delivered within 1 hour? This likely refers to the start of antibiotic within one hour not completion of the course. The wide group identified by the above in most cases do not require antibiotic within one hour. Over use of antibiotics is thereby promoted. Blood cultures should be required with review of antibiotic treatment at 48 hours and if appropriate de-escalation or stop of antibiotic. Source control should be included. Administration in the community is more likely to be broad spectrum rather than directed treatment according to the source and the local formulary. The 1 hour criterion is not supported in the literature, rather treatment should be prompt and in consultation with a senior. This will increase antibiotic use unnecessarily increasing antimicrobial resistance and C difficile, particularly if commissioners are charged with enforcing this criterion.
163	Advisory Committee on Antimicrobial Prescribing, Resistance and Healthcare Associated Infection.	Draft statement 3	The number and proportion of patients with only 1 sign of sepsis will be large - particularly with either high respiratory rate or tachycardia. Therefore the number of patients qualifying for antibiotics within 1h will be equally large. A figure of 30% is quoted. There is no discussion about patients with localising signs of infection who would need directed antibiotic therapy rather than very broad spectrum empirical therapy. Indeed, these patients might be disadvantaged by non-directed therapy. Moving the administration of initial antibiotic dosing into the community might have been advantageous for meningococcal disease, but applying it more generally will lead to a large increase in patients arriving in hospital having had antibiotics before a proper clinical assessment. This runs the risk of administration of inappropriate therapy and also delayed diagnosis if cultures and other investigations are affected adversely by antibiotics.
164	Alder Hey Children's NHS Foundation Trust	Draft statement 3	As below, completion of antimicrobial treatment not possible in all age groups – e.g. ciprofloxacin used frequently in hospital inpatients and given as infusion over one hour. Hence to complete infusion would require starting instantly on concern of sepsis from parent or nursing staff. Suggest that the hour target should relate to the start of antimicrobial administration.
165	All-Party Parliamentary Group on Sepsis	Draft statement 3	The All-Party Parliamentary Group on Sepsis welcomes the recognition of the time scale needed to get antibiotics for those with suspected sepsis but is concerned that there is no reference to the time to take and receive the results from Blood Cultures. This fails to include recommendations mentioned in Public Health England's UK Standards for

ID	Stakeholder	Statement number	Comments[1]
			Microbiology Investigations (SMI), guidance 2014 and EI National clinical guideline #6 - sepsis management published in November 2014 from the National Clinical Safety committee of the Department of Health Ireland.
166	British Infection Association	Draft statement 3	People with suspected sepsis in acute hospital settings and at least 1 criteria indicating high risk of severe illness or death have antibiotic treatment within 1 hour of risk being identified. The word APPROPRIATE needs inclusion in this standard- People with suspected sepsis in acute hospital settings and at least 1 criteria indicating high risk of severe illness or death have appropriate antibiotic treatment within 1 hour of risk being identified. The quality statement needs to be made clearer with regards to what treatment should be given. One of the issues with statement 3, in common with previous NICE guidance on sepsis, is that although there is emphasis on when to give antibiotics, there is no emphasis on giving the correct antibiotic(s) or managing the source of infection. There is no point in giving a patient with potential sepsis IV antibiotics within one hour if the agent(s) given is/are inappropriate. What is to be given should then be further clarified e.g. the antibiotics should be given according to local antibiotic protocols to cover a specific infection (if site is known or clinically suspected) or board spectrum antibiotics, if the site of origin of sepsis is unknown/unclear. If there is a combination of antibiotics required according to local protocol, all agents in the regime should be given within the 1 hour time period. Is it clear from draft statement 3 that the full course of antibiotics should be delivered within 1 hour? The question regarding this standard does not make sense. We presume NICE means first dose? Whilst we agree that those with genuinely severe infections have better outcomes when antibiotics are provided quickly the very broad group defined as septic by this standard do not necessarily require antibiotics within one hour. The one hour target is justified on the basis of evidence only in those groups with high mortality. However this standard suggests giving within one hour to a much broader group of patients who may not benefit. “For people at high risk of severe illness or death from sepsis, the clinical benefits of providing antibiotics within an hour outweigh any risks associated with possible antimicrobial resistance.” This statement is not necessarily correct in the context of NICE defined sepsis and may lead to the inappropriate prescribing of broad-spectrum antibiotics in some areas. We are concerned regarding the inclusion of guidance regarding use of antimicrobials in the community. Our concern is that if paramedics have to give an agent it will be a single broad spectrum agent, in complete contrast to our

ID	Stakeholder	Statement number	Comments[1]
			antimicrobial stewardship guidelines. This standard should align with CQUIN measure for antibiotic administration and not be a separate data collection/audit requirement. We would propose measure is "appropriate antibiotics administered within 1 hour for patients with sepsis and NEWS of 5 or above or qSOFA positive". In the current format, use of red flags will almost certainly lead to antibiotic over prescription and a number of audits in UK hospitals have already highlighted this risk. This point is even more pertinent for the paediatric NICE guideline. The criteria for paediatrics are particularly difficult. As many children present to medical services with viral infection, the NICE guidelines do not offer a clear enough differentiation between viral and bacterial presentations. At least 2 prospective UK studies have demonstrated very poor specificity of the NICE high risk criteria for sepsis in children (unpublished data), and most Trusts in the UK have therefore elected not to adopt the NICE risk stratification tool for paediatric sepsis. A more generic approach to identification and management of the deteriorating child should be the priority for clinical practice. Whatever sepsis screening tool(s) are used, it is essential that a competent clinician is able to assess a patient flagged as having possible sepsis and override / de-escalate treatment if sepsis is not suspected after clinical review. The role, feasibility, choice and impact of pre-hospital antibiotics (± blood cultures) requires further investigation in prospective clinical trials before blanket recommendations can be made.
167	Cardiff and Vale University Local Health Board	Draft statement 3	See comments re: antibiotic prescriptions and stewardship in response to Quality Statement 2. Quality Statement 3 would benefit from incorporating NG51 1.7.4 to recommend taking of blood and other cultures prior to administering first dose of IV antibiotic. It should also specify that patients with suspected sepsis should receive INTRAVENOUS antibiotics – oral will not be appropriate due to uncertainties regarding absorption. Choice of antibiotic to be guided by local policies using Microguide or similar.
168	Faculty of Intensive Care Medicine & Intensive Care Society	Draft statement 3	Whilst it seems intuitive and prompt antibiotics should be given, the prospective evidence available for outcome and timing of antibiotics does not suggest it has to be given within 1 hour, but merely within the first few hours. There is no mention in this section of blood cultures being taken – why is this? Surely it is an important part of this package of treatment and there is no mention of source control, which has a strong evidence base
169	Great North Children's Hospital Newcastle upon Tyne Foundation Hospitals Trust	Draft statement 3	Delivery of antibiotics and intravenous (IV) fluids within 1 hour. We support this quality standard, however achieving this goal is more complex in children than adults because of the difficulty in getting intravenous access in sick children. Placing and securing IV cannulas in small children requires a minimum of 2 or 3 trained staff. Alternatives include the use of intra-osseous needles and intramuscular antibiotics and could provide pragmatic alternative routes in delivering timely treatment.

ID	Stakeholder	Statement number	Comments[1]
170	MSD	Draft statement 3	MSD believes that the current phraseology in this statement around the antibiotic dosing is ambiguous and would benefit from further clarity. It is our understanding that the NICE prioritisation meeting minutes for this quality standard defined this as delivering a whole dose of antibiotic treatment within 1 hour. We would suggest further defining this as the whole (full) and appropriate dose, as for a number of antibiotics there are different doses depending on the indication and for some drugs a loading dose is required to achieve the desired levels (target attainment) within the desired time frame. Moreover, combinations of drugs may be required to cover Gram-positive and Gram-negative pathogens (e.g. a glycopeptide in addition to a beta-lactam if MRSA is suspected).
171	MSD	Draft statement 3	From a patient safety perspective, MSD believes this quality statement presents an opportunity to establish and/or confirm commissioning policies facilitating prompt access to necessary antibiotics in this setting. MSD believes this is critical to differentiate this from other relatively restrictive general policies surrounding antibiotic prescribing.
172	National Sepsis Cluster, National Patient Safety Collaborative All Academic Health & Science Networks' Sepsis leads and Clinical leads for sepsis from each acute trust in England.	Draft statement 3	People with suspected sepsis in acute hospital settings and at least 1 criteria indicating high risk of severe illness or death have antibiotic treatment within 1 hour of risk being identified. ADULTS What is the evidence round 1 hour treatment? Kumar's study was flawed and over a 25 year period with outcomes data that showed there was no evidence that one hour treatment made a difference. I note the BTS and international sepsis consensus guidelines group has recommended 3 hours. We must guard against excessive amounts of antibiotic administration to achieve a target. IV antibiotics - Antibiotics administered within 1 hour should only be mandated for patients with organ dysfunction, NEWS of 5 or more or qSOFA positive. We would recommend that this is changed to "appropriate antibiotics administered…" This standard should align with CQUIN measure for antibiotic administration and not be a separate data collection/audit requirement. We would propose measure is "appropriate antibiotics administered within 1 hour for patients with sepsis and NEWS of 5 or above or qSOFA positive". In the current format, use of red and amber flags will almost certainly lead to antibiotic over prescription and a number of audits in UK hospitals have already highlighted this risk. Whatever sepsis screening tool(s) are used, it is essential that a competent clinician is able to assess a patient flagged as having possible sepsis and override / de-escalate treatment if sepsis is not suspected after clinical review. This seems compatible with the draft statement (since by definition a patient no longer has suspected sepsis if the

ID	Stakeholder	Statement number	Comments[1]
			clinician says it is not sepsis), but will need to be carefully communicated to avoid inappropriate prescribing. PAEDS If the correct group of patients has been accurately screened using the combined criteria, identified as high risk and is receiving prompt senior review then this should not inappropriately increase iv antibiotic usage. The key step is the prompt review by an appropriate senior to ensure judicious and appropriate antibiotic usage only. Further studies supporting the 1 hour target antibiotic administration time would be of use here.
173	NHS England	Draft statement 3	Statement 3 : where refers to antibiotic treatment 'within one hour of risk being identified' this needs clarification. Is it the point at which the NEWS score is recorded as poor, the point at which a staff member calls a senior clinician, or the point at which the senior clinician sees and assess the patient? ALSO it suggests that local prescribing data will show whether antibiotics were given promptly or not. This is NOT the case unless the provider trust is using an electronic prescribing system that also records timing of drug administration.
174	NHS England	Draft statement 3	Statement 3 People with suspected sepsis in acute hospital settings and at least 1 criteria indicating high risk of severe illness or death have antibiotic treatment within 1 hour of risk being identified. Suggest alter to appropriate antibiotic
175	NHS England	Draft statement 3	Evidence of local arrangements to ensure that people with suspected sepsis in acute hospital settings and at least 1 criteria indicating high risk of severe illness or death from sepsis have antibiotic treatment within 1 hour of risk being identified. Suggest include appropriate antibiotic for treatment of sepsis. Quality indicator could then be focussed on specific antibiotics for use for sepsis.
176	NHS England	Draft statement 3	Received antibiotics /to have antibiotics within 1 hour – does this mean received entire dose or initiated treatment? As above – suggest initiate appropriate antibiotics within 1 hour or entire dose of IV antibiotics given within 1 hour?
177	Nottingham University Hospitals NHS Trust	Draft statement 3	Unclear reason for splitting suspected and confirmed sepsis – surely in terms of giving antibiotics within 1hour, this is for every patient with High Risk Sepsis. Suggested revised statement "People with sepsis in acute hospital settings and at least 1 criteria indicating high risk of severe illness or death have EMERGENCY antibiotic treatment within 1 hour of risk being identified."
178	Regional Sepsis Stakeholder Group of the Oxford AHSN Patient Safety Collaborative.	Draft statement 3	People with suspected sepsis in acute hospital settings and at least 1 criteria indicating high risk of severe illness or death have antibiotic treatment within 1 hour of risk being identified. The risk associated with this recommendation is increased administration of inappropriate antibiotic therapy that might undermine antimicrobial stewardship efforts.

ID	Stakeholder	Statement number	Comments[1]
			Most of the physiological parameters in the NICE high risk criteria for adults are markers of reasonably severe illness, so in many cases it is probably reasonable to give empiric antibiotics if severe infection is suspected. However some, like altered mental state, might be open to more subjective interpretation despite the careful wording in the guideline. The criteria for paediatrics are particularly difficult. As many children present to medical services with viral infection, the NICE guidelines do not offer a clear enough differentiation between viral and bacterial presentations. At least 2 prospective UK studies have demonstrated very poor specificity of the NICE high risk criteria for sepsis in children (unpublished data), and most Trusts in the UK have therefore elected not to adopt the NICE risk stratification tool for paediatric sepsis. A more generic approach to identification and management of the deteriorating child should be the priority for clinical practice. Whatever sepsis screening tool(s) are used, it is essential that a competent clinician is able to assess a patient flagged as having possible sepsis and override / de-escalate treatment if sepsis is not suspected after clinical review. This seems compatible with the draft statement (since by definition a patient no longer has suspected sepsis if the clinician says it is not sepsis), but will need to be carefully communicated to avoid inappropriate prescribing. The role, feasibility, choice and impact of pre-hospital antibiotics (± blood cultures) requires further investigation in prospective clinical trials before blanket recommendations can be made. Is it clear from draft statement 3 that the full course of antibiotics should be delivered within 1 hour? Change to 'appropriate antibiotics' in statement of the quality standard. (I assume the question on this quality standard doesn't mean full 'course' but rather all appropriate antibiotics - where a combination indicated. Suggest addition of 'appropriate' antibiotics in quality standard as above.)
179	Royal College of General Practitioners	Draft statement 3	This QS largely refers to the provision of intravenous antibiotics within a one-hour target for patients with sepsis. The derivation for this target is a paper by Kumar which looked at septic shock mortality and the timing of intravenous antibiotics. The one hour target for sepsis antibiotics is an extrapolation from that paper to sepsis, it is not clear how important the timing of IV antibiotics is for this much larger group? Hospitals have significant advantages in determining causes of acute deterioration in patients which may not always be infective in origin. It is therefore unclear what the risk of the iatrogenic harm from the administration of broad-spectrum antibiotics to this group would be in the community. Similarly, it is unknown how many rural or isolated GPs there are who retain the skills for IV administration, or who has access to the appropriate broad-spectrum antibiotics. Isolation and transport delays are variable according to geography, time of day, availability of vehicles/crew and weather. It is unlikely that IV antibiotics administration skills would be provided on all ambulances and may well be

ID	Stakeholder	Statement number	Comments[1]
			concentrated with the paramedics whose vehicles cannot always transport a patient. It is quite conceivable that definitive patient care i.e. transportation to hospital where the full Sepsis Six can be delivered. GPs (and ambulance services) should be asked to carry out a risk assessment as to the feasibility and usefulness of being able to deliver IV antibiotics from their practice/service. Any assessment that required GPs to deliver this therapy would require support and funding as the antibiotics used will require a financial investment that may not actually be recouped through prescribing and would not meet the cost of disposable items.
180	Royal College of General Practitioners	Draft statement 3	These definitions of high risk of severe illness or death from sepsis are derived from hospital experience and are not validated in general practice, particularly those attributed to children. It would be helpful if NICE could quantify the predictive value of these abnormal findings in the community so that an appropriate risk/benefit assessment can be made for IV antibiotics in the community. Without it we are reliant on guesswork and extrapolation, experience in implementing the NICE guidance using the EMIS clinical system suggests that there is frequent over triggering and oversensitivity particularly with children. This gives an alternative "expert" opinion at variance with that of NICE, but one that is equally valid.
181	Royal College of Physicians	Draft statement 3	*People with suspected sepsis in acute hospital settings and at least 1 criteria indicating high risk of severe illness or death have antibiotic treatment within 1 hour of risk being identified.* *The continued adoption of NEWS within the NHS should be recommended by NICE and referenced within this QS. Without it, the above QS risks promoting unnecessary use of antibiotic treatment and increased risk of antimicrobial resistance.*
182	Royal College of Physicians	Draft statement 3	Antibiotics administered within 1 hour should only be mandated for patients with organ dysfunction, NEWS of 5 or more or qSOFA positive. We would recommend that this is changed to "appropriate antibiotics administered…". This standard should align with CQUIN measure for antibiotic administration and not be a separate data collection/audit requirement. We would propose this standard be changed to "appropriate antibiotics administered within 1 hour for patients with sepsis and NEWS of 5 or above or qSOFA positive". In the current format, use of red and amber flags will almost certainly lead to antibiotic over prescription and a number of audits in UK hospitals have already highlighted this risk. The issues highlighted in statement 1, 2 and 3 above are even more pertinent for the paediatric NICE guideline.
183	Royal College of Physicians of Edinburgh	Draft statement 3	The College is concerned that this quality statement is not specific enough and does not promote antimicrobial stewardship. A statement such as "People with suspected sepsis in acute hospital settings and at least 1 criteria indicating high risk of severe illness or death have appropriate antibiotic treatment within 1 hour of risk being identified" may be more suitable.

ID	Stakeholder	Statement number	Comments[1]
			The quality statement needs to be made clearer with regards to what treatment should be given. One of the issues with this statement is that although there is emphasis on when to give antibiotics, there is no emphasis on giving the correct antibiotic/s or managing the source of infection. Giving a patient with potential sepsis IV antibiotics within one hour will have no positive effect if the agent given is inappropriate. What is to be given should be further clarified e.g. the antibiotics should be given according to local antibiotic protocols to cover a specific infection (if site is known or clinically suspected) or board spectrum antibiotics, if the site of origin of sepsis is unknown/unclear. If there is a combination of antibiotics required according to local protocol, all agents in the regime should be given within the 1 hour time period. Inclusion in this quality statement of blood cultures being taken if patient is in hospital and compulsory review after 48 hours to de-escalate or stop antibiotics would also be very helpful in promoting antimicrobial stewardship. Whilst the College agrees that those with genuinely severe infections have better outcomes when antibiotics are provided quickly, the very broad group defined as septic by this standard do not necessarily require antibiotics within one hour. The one hour target is justified on the basis of evidence only in those groups with high mortality. However this standard suggests giving within one hour to a much broader group of patients who may not benefit. Patients with a NEWS score ≥5 (or lower if specific cause for concern) should be promptly assessed by a senior clinician. The cause may not be related to a sepsis process and will be readily correctable with non-antibiotic therapy, e.g. oliguria or hypotension or tachycardia cured by fluid, analgesia etc. Immediate antibiotics would be inappropriate in such patients. If abnormal signs persist and sepsis is suspected, then consideration should be given to prompt antibiotics. This should be timely but, if needs be, time should be allowed to consult senior or appropriate infection specialist for advice. If antibiotics are not felt to be warranted, the rationale should be clearly documented in the patient notes.
184	The British Society for Antimicrobial Chemotherapy (BSAC)	Draft statement 3	This is unreasonable and highly deleterious to antimicrobial stewardship. Every patient with a single criterion of sepsis has to be given antibiotic within 1 hour. This will include patients with low urine output or FiO2 of 0.4, chronic bronchitic patients and children with bronchiolitis. The decision should be made by the clinician not a definition. If antibiotics are not given that should be justified in the notes.
185	The British Society for Antimicrobial Chemotherapy (BSAC)	Draft statement 3	Although quality standard 2 refers to senior review of a patient meeting one of the criteria indicating high risk of sepsis, quality standard 3 does not make this clear. They may be interpreted to mean that that any patient meeting one of the criteria indicating high risk of sepsis needs to receive IVAb within 1 hour. This could result in a significant uplift in unnecessary Ab use as a large number of patients triggering the tool are subsequently identifies to have a different pathology when reviewed by a senior clinician. I suggest that this sequence of event sis made more clear in

ID	Stakeholder	Statement number	Comments[1]
			statement 3 as otherwise departments may prioritise statement 3 over statement 2 if no senior clinician is available to review the child within 60 minutes.
186	The Royal College of Anaesthetists	Draft statement 3	Why does this not include blood cultures if patient is in hospital? And compulsory review after 48 hours to de-escalate or stop antibiotics? These actions would promote antimicrobial stewardship. What is meant by the full course of antibiotics is administered within 1hr? Source control is a vitally important component of improving outcome from sepsis and is not mentioned at all.
187	The Royal College of Anaesthetists	Draft statement 3	This statement may over simplify the relationship between antibiotic therapy and improved outcomes. “Prompt’ – yes ... but not necessarily within 1 hour. This assumption is based solely on retrospective analysis of usually administrative databases collected for other reasons, often heavily adjusted, and lacking vital data such as actual confirmation of infection, microorganism sensitivities relating to antibiotic given, correct dose of antibiotic given, etc. Every prospective study, including those specifically looking at impact of antibiotic delay – each ranging from hundreds to thousands of patients - has failed to identify an hour-by-hour relationship. Some have a priori stratified by severity. They indicate that giving an antibiotic within 4-5 hours is acceptable in terms of outcome (5-11). This is not to excuse delay when urgent antibiotic administration is indicated but to encourage appropriate patient review and treatment. The 1 hour recommendation could mean many more patients admitted with for example an exacerbation of COPD or croup will automatically get an antibiotic. Increased antibiotic usage will likely result in significant increases in antimicrobial resistance and the risks will then outweigh contentious benefits. Patients with a NEWS score ≥5 (or lower if specific cause for concern) should be promptly assessed by a senior clinician. The cause may not be related to a sepsis process and will be readily correctable with non-antibiotic therapy, e.g. oliguria or hypotension or tachycardia cured by fluid, analgesia etc.. Immediate antibiotics would be inappropriate in such patients. If abnormal signs persist and sepsis is suspected, then consideration should be given to prompt antibiotics. This should be timely but, if needs be, time should be allowed to consult senior or appropriate infection specialist for

ID	Stakeholder	Statement number	Comments[1]
			advice. If antibiotics are not felt to be warranted, the rationale should be clearly documented in the patient notes. Alongside antibiotic therapy source control must be considered.
188	The Royal College of Anaesthetists	Draft statement 3	We would rather services were commissioned so that patient deterioration from all causes is recognised and promptly dealt with. We have concerns that this policy could pressure hospitals who will in turn pressure trainees to prescribe antibiotics to everyone for fear of litigation/castigation. We have heard worrying reports of this happening in response to the CQUIN – antibiotics are being given before the patient has even been seen by a doctor.
189	The Royal College of Pathologists	Draft statement 3	The following are noticeable by their absence; Source control, blood cultures if patient is in hospital, review after 24-48 hours to step down or stop antibiotics. The proposed action –"the full course of antibiotics is administered within 1 h" will not help to support antimicrobial stewardship initiatives. The recommendation of "within 1 hour" is not based on very robust evidence from prospective clinical trials and may inappropriately increase use of broad spectrum antibiotics. There may be many potential benefits, from a more careful and considered approach to antibiotic prescribing. Proper assessment of the patient by a senior clinician, with time to review results and even consult an infection/antibiotic specialist can probably be achieved within a 4-5 hour window which, according to available best quality data, is time enough and will allow a much more considered approach to antimicrobial stewardship. Inappropriate antibiotic can lead to antibiotic resistance and Clostridium difficile. Mandating of the taking of blood cultures will allow more robust decision making on the step down of antimicrobial therapy. New systems should encourage ascertainment of the correct diagnosis in a safe timely manner for the patient, not encourage rapid inappropriate administration of hugely valuable and irreplaceable drugs.
190	The Royal College of Pathologists	Draft statement 3	In conclusion while the Royal College of Pathologists supports appropriate prompt diagnosis/ treatment of sepsis, we do have some reservations about some of the current proposals which may not all be beneficial to patients eventually. Often inappropriate administration of antibiotics will lead to unintentional harms including increased numbers of cases of Clostridium difficile, increased use of broad spectrum antibiotics and consequent resistance to them and increased side effects.
191	UK Clinical Pharmacy Association (UKCPA)	Draft statement 3	I think the term "antibiotic treatment" is a little vague. It doesn't give any indication to if it is appropriate treatment and could encompass very different prescribing standards. I also think many trusts will struggle to collect some of the local prescribing data that they mention (prescribing of antibiotics and if they are within an hour of identification).
192	Alder Hey Children's NHS Foundation Trust	Question 6	Completion of antibiotic administration within one hour would be unworkable. Some antibiotics must be given as one hour infusions. This should refer to the start of definitive antimicrobial therapy.

ID	Stakeholder	Statement number	Comments[1]
193	Cardiff and Vale University Local Health Board	Question 6	The wording needs improvement. It needs to specify that the first dose of antibiotics should be given INTRAVENOUSLY within 1 hour of a positive screen for high-risk ("Red Flag") sepsis after blood and other relevant cultures have been obtained
194	Faculty of Intensive Care Medicine & Intensive Care Society	Question 6	No. Not all antibiotics can be delivered within 1 hour if being given by infusion. To ask for a 'full course' of antibiotics to be delivered is wrong
195	NHS England	Question 6	Question 6 : Its not the 'full course' of antibiotics that needs to be delivered within an hour. Its starting an appropriate IV antibiotic for the suspected source of the sepsis in line with local antimicrobial prescribing policy (this would be a good point to add the review of antibiotics after microbiology results available)
196	NHS England	Question 6	Question 6 For draft quality statement 3: Is it clear from draft statement 3 that the full course of antibiotics should be delivered within 1 hour? No this is not clear. Does it mean antibiotics are initiated within 1 hour? Or the first dose if given to completion within 1 hour?
197	North West Ambulance Service NHS Trust	Question 6	The statement does not make it clear that a full course of antibiotics should be given; there is also a concern around where the 1 hour count starts? Not every patient will present with red flag sepsis in hospital, this statement puts those identified in the community at risk of unnecessary delayed treatment.
198	Nottingham University Hospitals NHS Trust	Question 6	'Is it clear from draft statement that the full course of abs should be delivered within 1hour' – the wording here requires refinement and if this means "The full dose" of all antibiotics required according to local policy (eg Coamoxiclav and clarithromycin for CAP), then this is not measurable – only documentation is the time of prescription and time of administration. The time of completion may be documented on fluid balance chart but rarely. Taking this data from the National CQUIN data, needs to acknowledge the risk that many trusts having slightly different methods of identifying the cohort/ measuring when Time Zero is etc. The whole statement says antibiotics received within an hour, it does not ever apart from this small concluding sentence insinuate a full course of whatever gets given within an hour. Suggested revised statement ""People with sepsis in acute hospital settings and at least 1 criteria indicating high risk of severe illness or death have EMERGENCY antibiotic treatment started within 1 hour of risk being identified."
199	Public Health England	Question 6	• No. It does not specify the full course of antibiotics should be delivered within one hour.
200	Royal College of Emergency Medicine	Question 6	The statement states full course antibiotics should be delivered in 1 hour is not clear. This statement does not make sense ...does it mean full dose of antibiotic given within 1 hour?
201	Royal College of Emergency Medicine	Question 6	The suggestion is that abx administration will have completed within 1 hour. This will be very difficult to evidence. The start time of antibiotics is much more clearly recorded. Should we not keep to "start" time?
202	Royal College of General Practitioners	Question 6	*Question for consultation* *Is it clear from draft statement three that the full course of antibiotics should be delivered within one hour?*

ID	Stakeholder	Statement number	Comments[1]
			It is not clear if this question is as a full course of antibiotics might include seven days worth so the answer is clearly no. Is there is a better written question that you would like an opinion on?
203	Royal College of Paediatrics and Child Health	Question 6	Our reviewer advised that this is not clear. 80mg/kg ceftriaxone for children is an infusion so a full dose is unlikely to be delivered within one hour. Please clarify whether you want "antibiotic treatment started within 1 hour" or to have "completed the first dose of antibiotic within one hour". If the latter, we may have to change practice to giving 50mg/kg ceftriaxone which can be given stat as a push but would be seen currently as an underdose for children thought to have sepsis. Any views from pharmacists on this?
204	Scottish Antimicrobial Prescribing Group	Question 6	The quality standard should reflect current best practice in management of sepsis which is to give IV antibiotics following the local antimicrobial policy. This would ensure that the specific locally agreed treatment which may include more than one antibiotic is given by the correct route for optimum benefit.
205	The British Society for Antimicrobial Chemotherapy (BSAC)	Question 6	I do not understand the question being asked – by "full course", do you mean "full dose" of antibiotic? If so, I suspect that most people interpret the statement to mean "were antibiotics started within 60 minutes". To some extent, the evidence is poor in terms of timing of Abs and collecting the data for when Abs were completed will be difficult as unlikely to be routinely recorded.
206	UK Clinical Pharmacy Association (UKCPA)	Question 6	It is not clear that they mean the full course rather than just any antibiotic. It also should say IV antibiotics are per local policy.
207	British Infection Association	Draft statement 4	This statement supports the use of early intravenous fluids and we support this statement in the standard. However, we would encourage fluid prescribing in combination with a clinical assessment of fluid status rather than on the basis solely of a lactate measurement. We would support further research to establish potential links between the measurement of lactate and requirement for fluids. Given that early goal directed therapy was supported by randomised control trials and then found to be false, currently a few observational studies linking high lactate with poor outcomes seems an insufficient evidence basis for management. Collecting data on the outcomes listed (e.g. risk of heart failure in people with suspected sepsis) does not appear clearly relevant to the standard and it is unclear how it would be interpreted. The early treatment targets need to include antibiotics, IV fluids and full clinical assessment with identification of the source of infection rather than antibiotics alone. The inclusion of IV fluids into this target is an improvement but other factors also need inclusion. There is increasing evidence that excessively aggressive fluid resuscitation may perhaps be harmful in patients with sepsis. International Surviving Sepsis Campaign guidelines only recommend aggressive fluid resuscitation in patients who are hypotensive or have lactate greater than or equal to 4 mmol/l. Use of lactate of 2 mmol/l as threshold is not evidenced-based and may not be implemented by clinicians because it is potentially harmful. This standard also does

ID	Stakeholder	Statement number	Comments[1]
			not indicate how much fluid should be given and by when. How will this be measured? High quality evidence for this is lacking. HES data must be interpreted with caution due to misclassification – this is likely to be an even bigger problem with secondary diagnoses
208	Cardiff and Vale University Local Health Board	Draft statement 4	Agree with this fully. Sensible recommendation on types of fluids and volumes to be used.
209	Faculty of Intensive Care Medicine & Intensive Care Society	Draft statement 4	IV fluids cannot reverse septic shock as, by its definition, it is ongoing hypotension despite fluid resuscitation.
210	Faculty of Intensive Care Medicine & Intensive Care Society	Draft statement 4	I am unaware that IV fluids will reduce heart failure.
211	Faculty of Intensive Care Medicine & Intensive Care Society	Draft statement 4	The delivery of IV fluids should not be dependent on a measured lactate or wait until one is done. It should be given on merit following clinical examination and in the setting of a tachycardia / hypotension
212	Faculty of Intensive Care Medicine & Intensive Care Society	Draft statement 4	The rate of heart failure in sepsis is an unusual data source for assessing the delivery of IV fluid boluses. 28 day mortality is more crude than ICU mortality or hospital mortality and should be changed
213	National Sepsis Cluster, National Patient Safety Collaborative All Academic Health & Science Networks' Sepsis leads and Clinical leads for sepsis from each acute trust in England.	Draft statement 4	People with suspected sepsis in acute hospital settings, at least 1 criteria indicating high risk of severe illness or death, and with lactate over 2 mmol/litre, have an intravenous fluid bolus within 1 hour of risk being identified. To deliver fluid based on a lactate over 2 alone belies the complexity of lactate formation and risks causing harm. I would like to see the evidence to support a benefit of fluid bolus within one hour in this patient group. I am however aware of some evidence to suggest aggressive fluid delivery is harmful. I do not think this should be a quality standard. Where is there evidence to support this? There is increasing evidence that aggressive fluid resuscitation may be harmful in patients with sepsis. International Surviving Sepsis Campaign guidelines only recommend aggressive fluid resuscitation in patients who are hypotensive or have lactate greater than or equal to 4 mmol/l. We have used this in our NW Advancing Quality Collaborative project for sepsis which started before NICE guidelines were published. Use of lactate of 2 as threshold is not evidenced-based and will not be implemented by clinicians because it is potentially harmful. This standard also

ID	Stakeholder	Statement number	Comments[1]
			does not indicate how much fluid should be given and by when. How will this be measured? Would recommend a standard such as – "2nd litre of fluid being started for patients with systolic BP < 90 mmHg or lactate > 4 mmol/l within 4 hours unless there is a documented reason to explanation". High quality evidence for this is lacking. Contrary to expectations, the only RCT of fluids for severe infection showed clear evidence of harm in >3000 children, albeit in a very different (African) setting (Maitland et al. NEJM 2011). It is also not clear that lactate alone should be used to determine the need for fluids. Goal directed therapy for sepsis has been shown not to be effective for several other narrowly defined goals. In the absence of good quality evidence to support this recommendation I would favour either a decision to give fluids based on a more comprehensive clinical assessment plus lactate (which is difficult to audit); and/or using higher lactate threshold of 4mmol/L for the quality standard, which would be less controversial. PAEDS I agree with the above statement about the complexity of lactate formation as well as relying on an absolute value for fluid resuscitation. If taken from a free flowing sample and interpreted within the clinical context using combined criteria then it may be of some value. I would like to see further evidence.
214	NHS England	Draft statement 4	Statement 4 : the outcome that this document proposes recording is the rate of heart failure in people with suspected sepsis. This does not feel an appropriate metric to me. It appears that there is concern that an iv fluid bolus of the sort used initially in sepsis might push the patient into heart failure. However the sort of volume used initially in such patients is very low and unlikely to cause this. By highlighting this as the first outcome metric I believe it will deter people from giving an iv fluid bolus to people who need it. Maybe worth defining what the initial fluid bolus volume should be.
215	NHS England	Draft statement 4	Suggest additional diagnostic quality measure to support statement 4 All patients with suspected sepsis have lactate tested and recorded.
216	NHS England	Draft statement 4	Quality statement People with suspected sepsis in acute hospital settings, at least 1 criteria indicating high risk of severe illness or death, and with lactate over 2 mmol/litre, have an intravenous fluid bolus within 1 hour of risk being identified. What about patients not getting a lactate test? Could add in measure of get lactate within set time frame, record and act on result within set timeframe. As written could lead to reduced lactate testing, no test no requirement to give fluids……..There are POCT for lactate available that could be of benefit

ID	Stakeholder	Statement number	Comments[1]
217	Regional Sepsis Stakeholder Group of the Oxford AHSN Patient Safety Collaborative.	Draft statement 4	People with suspected sepsis in acute hospital settings, at least 1 criteria indicating high risk of severe illness or death, and with lactate over 2 mmol/litre, have an intravenous fluid bolus within 1 hour of risk being identified. High quality evidence for this is lacking. Contrary to expectations, the only RCT of fluids for severe infection showed clear evidence of harm in >3000 children, albeit in a very different (African) setting (Maitland et al. NEJM 2011). It is also not clear that lactate alone should be used to determine the need for fluids. Goal directed therapy for sepsis has been shown not to be effective for several other narrowly defined goals. In the absence of good quality evidence to support this recommendation we would favour either a decision to give fluids based on a more comprehensive clinical assessment plus lactate (which is difficult to audit); and/or using higher lactate threshold of 4mmol/L for the quality standard, which would be less controversial. HES data must be interpreted with caution due to misclassification – this is likely to be an even bigger problem with secondary diagnoses.
218	Royal College of Emergency Medicine	Draft statement 4	Some guidance regarding suggested volume and rate to be given would be helpful.
219	Royal College of Nursing	Draft statement 4	Whilst the recommendation for fluid bolus is there, there is no mention of an amount, e.g. mls /kg, despite evidence being available. Guidance on amount of fluid for a bolus challenge should be included.
220	Royal College of Paediatrics and Child Health	Draft statement 4	Our reviewers would like to suggest to be careful with how this is worded given the uncertainty with fluid use in children.
221	Royal College of Paediatrics and Child Health	Draft statement 4	Lactate & IV fluid bolus Our reviewers advised they work in a small DGH where their ED does not have a gas analyser. The lab cannot do lactate on their gas machine either. We just need to send a separate specimen to the lab to have it done. They would not normally wait lactate result if we think the patient needs IV fluid bolus immediately.
222	Royal College of Physicians	Draft statement 4	There is increasing evidence that aggressive fluid resuscitation may be harmful in patients with sepsis. International Surviving Sepsis Campaign guidelines only recommend aggressive fluid resuscitation in patients who are hypotensive or have lactate greater than or equal to 4 mmol/l. We have used this in our NW Advancing Quality Collaborative project for sepsis which started before NICE guidelines were published. Use of lactate of 2 as threshold is not evidenced-based and will not be implemented by clinicians because it may be potentially harmful. This standard also does not indicate how much fluid should be given and time frames. How will this be measured? We would recommend a standard such as – "2nd litre of fluid being started for patients with systolic BP < 90 mmHg or lactate > 4

ID	Stakeholder	Statement number	Comments[1]
			mmol/l within 4 hours unless there is a documented reason to explanation". We would recommend that NICE reviews NW Advancing Quality Sepsis Standards/measures.
223	Royal College of Physicians of Edinburgh	Draft statement 4	This statement supports the use of early intravenous fluids and the College would generally support this statement in the standard. However, fluid prescribing should be in combination with a clinical assessment of fluid status rather than on the basis solely of a lactate measurement. We would support further research to establish potential links between the measurement of lactate and requirement for fluids.
224	Society for Acute Medicine	Draft statement 4	The statement says: 'People with suspected sepsis in acute hospital settings, at least 1 criteria indicating high risk of severe illness or death, and with lactate over 2 mmol/litre, have an intravenous fluid bolus within 1 hour of risk being identified.' As written the statement implies the need for a severity criteria and a raised lactate. Is it not the case that fluids may be required without the lactate being raised? Furthermore, the prescriptive value of a lactate of 2 mmol/L means that a significant decision regarding fluids might be based on the lactate being just above or just below 2.0mmol/L. We are simply asking for clarity as to whether borderline lactates, in the presence of other significant severity criteria, carry such important discriminatory power?
225	The Royal College of Anaesthetists	Draft statement 4	The outcomes - rates of heart failure or renal failure may not be avoided by a fluid bolus.
226	The Royal College of Anaesthetists	Draft statement 4	The literature shows that a raised lactate only in conjunction with hypotension increases the risk of death. Organ failure regardless of lactate > or <2 mmol/l results in a 25% mortality - Sepsis-3 data analysis of the Surviving Sepsis Campaign Database (12). The current proposal is that within the first hour the patient will need to be seen/assessed, a lactate measured, antibiotics given and fluid administered. This is a huge workload as multiple such patients will be recognized daily on the basis of non-sepsis related oliguria or tachycardia .
227	The Royal College of Anaesthetists	Draft statement 4	By definition, a bolus of fluid cannot reverse shock. The new international definition of septic shock means it can only be identified if hypotension (MAP<65) and lactate >2 mmol/l persists DESPITE adequate fluid resuscitation.
228	The Royal College of Anaesthetists	Draft statement 4	How does early fluid administration prevent heart failure? What data support this statement? We think that it is more important to emphasise here that fluid is crucial for treatment of sepsis induced tissue hypoperfusion +/- septic shock. I also think that the term 'heart failure' being used throughout this statement is incorrect and should maybe instead read as cardiovascular dysfunction. After all, aren't we talking about circulatory collapse associated with sepsis and the need for vasopressors to support the circulation here? Otherwise, how is heart failure going to be defined for the sake of clinical management and audit purposes?
229	The Royal College of Anaesthetists	Draft statement 4	This would imply fluid should only be given after a lactate is measured >2 mmol/l. Surely fluid should be given on clinical need and not wait until a blood test is taken and the result obtained? This may take >1 hour depending on the hospital.

ID	Stakeholder	Statement number	Comments[1]
			The evidence base that managing patients according to lactate levels is weak.
230	The Royal College of Anaesthetists	Draft statement 4	Fluid (especially in excess) will cause this. Based on HES data a diagnosis of heart failure is unlikely to be related to sepsis; we find this puzzling.
231	The Royal College of Anaesthetists	Draft statement 4	28 day all cause mortality is now considered an inappropriate marker. ICU or hospital mortality are much better indicators
232	The Royal College of Anaesthetists	Draft statement 4	We do not find this a helpful recommendation; for example, it would imply that a tachypnoeic patient, needing a rise in oxygen requirement to 40% (from 35%) for their COPD exacerbation will need a lactate measured, antibiotics and fluid given. It would be more logical to suggest that a fluid bolus should be given according to clinical indication, e.g. oliguria, tachycardia, hypotension. If the clinical condition does not respond promptly, consider further fluid and measurement of lactate.
233	The Royal College of Pathologists	Draft statement 4	The current proposal for the patient, within the first hour, to be assessed/ have lactate measured/ antibiotics given/ fluids administered is a huge potential workload and may not be achievable.
234	Advisory Committee on Antimicrobial Prescribing, Resistance and Healthcare Associated Infection.	Draft statement 5	People who have been seen by a healthcare professional and assessed as at low risk of sepsis are given information about symptoms to monitor and how to access medical care. It is essential to define those at low risk so that advice is given appropriately
235	Alder Hey Children's NHS Foundation Trust	Draft statement 5	This statement appears to refer to patients in Emergency Departments rather than inpatient wards. Please amend wording to make this clear
236	British Infection Association	Draft statement 5	Who is 'assessed as low risk'. This standard needs further clarification. Is this every person who has infection but not NICE sepsis? How can we give them information about symptoms and how to monitor them without a clear evidence basis? We should only be supporting the introduction of tested information into the public domain. Without knowing what symptoms to pay attention to, there is a danger of increasing anxiety and deflecting attention from key symptoms. Meningitis is an example of this, when public health guidance changed on the basis of research as to the actual presentation of disease in primary care. Safety netting advice should be a basic principle in the assessment and management of all clinical presentations. Too narrow a focus on individual clinical syndromes (e.g. sepsis) risks inadvertently diverting attention away from other potential conditions/complications, particularly as the differential diagnosis may be broad at presentation. Furthermore, many of the symptoms and signs of deterioration are not specific to sepsis. We would therefore recommend a more generic approach to safety netting.

ID	Stakeholder	Statement number	Comments[1]
			If this were to be implemented as a national standard we would request / strongly recommend development of national patient leaflets for this group of patients - i.e. specifically for those with a diagnosed/suspected infection that might have the potential to develop into sepsis, but who have no evidence of sepsis at the time of their assessment. Current resources from UK Sepsis Trust don't quite fill this niche.
237	Cardiff and Vale University Local Health Board	Draft statement 5	Agree with this fully. This will need to be resourced properly. Safety-net approach given in NG51 1.11.5
238	Great North Children's Hospital Newcastle upon Tyne Foundation Hospitals Trust	Draft statement 5	Giving written information on discharge is achievable. We have developed a regionally agreed information leaflet that is currently being piloted through primary, secondary and tertiary care on discharge of febrile children for safety netting. Sharing resources with other regions and developing a central resource bank could save time, money and effort as well as providing consistent advice.
239	Integrated Care 24 Ltd	Draft statement 5	We question if a 'low risk' patient information leaflet is available for use and that it should be documented if given to the patient?
240	National Sepsis Cluster, National Patient Safety Collaborative All Academic Health & Science Networks' Sepsis leads and Clinical leads for sepsis from each acute trust in England.	Draft statement 5	People who have been seen by a healthcare professional and assessed as at low risk of sepsis are given information about symptoms to monitor and how to access medical care. Appropriate, providing the information is validated, measured for impact and evidence based. The anecdote driven, well meaning UKST awareness information is potentially dangerous and at risk of causing a flood to A&Es, ambulances and GP surgeries. These public information leaflets should be designed and held by NHS England and the Royal Colleges not charitable organisations. Appropriate safety netting advice is essential for all patients being discharged home as the assessment will have been conducted over a small 'snapshot' of time only and parents / carers need to remain aware that the clinical condition may change as the illness progresses and therefore what to look for. It is important that families are given advice on fever management rather than 'sepsis' though, as if the child is deemed to need advice regarding this, then perhaps discharge should be reconsidered. We use both the NICE Febrile Illness information sheets as well as the Wessex Healthier Together Collaborative information sheets which have been produced to correlate with the advice given across both primary and secondary care services, offering a consistent message to parents between hospital clinicians and our GP colleagues.

ID	Stakeholder	Statement number	Comments[1]
			Information for patients – We support use of safety netting for patients with infection who do not have sepsis following evaluation by a clinician. However this will require publication of a standard safety netting leaflet. UKST provides its own leaflet that is not evidence based and feels anecdotal at best, it would be good to have a nationally agreed and standardised message. The safety netting message should be evidence-based and close collaboration with community healthcare professionals who deal with both well and unwell patients day-in-day out should be sought for the most sensible advice that has most value. If this is to be implemented as a national standard we would strongly recommend development of national patient leaflets for this group of patients - i.e. specifically for those with a diagnosed/suspected infection that might have the potential to develop into sepsis, but who have no evidence of sepsis at the time of their assessment. Current resources from UK Sepsis Trust don't quite fill this niche.
241	NHS England	Draft statement 5	Statement 5: It won't always be 'seen by' a healthcare professional – there will be some patients who have their clinical assessment via 111, and pilots are currently under way to send safety netting info by text following such conversations
242	NHS England	Draft statement 5	Typo- This will enable rapid management to take place if symptoms become worse.
243	NHS England	Draft statement 5	Quality statement 5 is difficult to measure in practice
244	Nottingham University Hospitals NHS Trust	Draft statement 5	Yes we should give a leaflet to all, perhaps as a discharge prompt on EDIS or whatever is being used now, just like in head injuries. We could audit completion of the e-checkbox, but as far auditing each leaflet given out to patients, then that is very tricky. There is no auditable paper trail….unless we start texting patients the http link to the online info?
245	Regional Sepsis Stakeholder Group of the Oxford AHSN Patient Safety Collaborative.	Draft statement 5	People who have been seen by a healthcare professional and assessed as at low risk of sepsis are given information about symptoms to monitor and how to access medical care. Safety netting advice should be a basic principle in the assessment and management of all clinical presentations. Too narrow a focus on individual clinical syndromes (e.g. sepsis) risks inadvertently diverting attention away from other potential conditions/complications, particularly as the differential diagnosis may be broad at presentation. Furthermore, many of the symptoms and signs of deterioration are not specific to sepsis. We would therefore recommend a more generic approach to safety netting. If this were to be implemented as a national standard we would request / strongly recommend development of national patient leaflets for this group of patients - i.e. specifically for those with a diagnosed/suspected infection that might have the potential to develop into sepsis, but who have no evidence of sepsis at the time of their assessment. Current resources from UK Sepsis Trust don't quite fill this niche.

ID	Stakeholder	Statement number	Comments[1]
246	Royal College of Emergency Medicine	Draft statement 5	Safety netting advice leaflets will need to be made available. A standard one adaptable for local use would be helpful
247	Royal College of General Practitioners	Draft statement 5	This appears to be the least controversial QS and closest to current practice. It does however require all patients who are assessed for infection (and therefore at low risk of sepsis) to receive some form of information. We are starting to get some forms of appropriate safety netting material, though it is not yet clear what the impact of PHE parental advice is on health seeking behaviour. This requires to be tested. GPs see large volumes of people in whom sepsis is a possibility. Under reaction and over reaction by families to childhood illness is possible. Information leaflets should be tested for benefits and harms before they are rolled out, and if so, would require to be made easy to access and paid for as part of the GP contract.
248	Royal College of General Practitioners	Draft statement 5	The outcome suggested is odd given that the target audience is not people with suspected sepsis but those in whom sepsis is not suspected.
249	Royal College of General Practitioners	Draft statement 5	In order to measure activity against this quality standard GPs and primary care clinicians would need to be able to code for “low risk of sepsis”, this coding is not currently available and therefore measurable activity against this QS is impractical.
250	Royal College of Nursing	Draft statement 5	There is also a need for easy to access, clear information to be provided for people who have not yet seen a healthcare professional to help inform them about the signs of sepsis and help them to know when to seek help. Quality measures need to include the format of the information given – safety netting needs to be not just verbal (as less than 50% of such information is remembered). Best practice would be information in a written format for people to take home and where possible translated into the most common languages in the population. Standardised safety netting tools are required to reduce inconsistencies in safety netting information given and it needs to be tailored to the age of the patient and theirs or their carer’s level of literacy. Visual information is important for those unable to read. These tools need to be symptom focused so that patients and their families are not falsely reassured that it is not sepsis so it is not anything serious.
251	Royal College of Nursing	Draft statement 5	A typographical needs correcting in the rationale section.
252	Royal College of Physicians	Draft statement 5	Information for patients – We support use of safety netting for patients with infection who are thought not to have sepsis following clinical assessment However this will require publication of a standard safety netting leaflet. UKST provides its own leaflet however it would be good to have a nationally agreed and standardised message from NHS England. The safety netting message should be evidence-based.
253	Royal College of Physicians of Edinburgh	Draft statement 5	The College would appreciate further clarity on who would be ‘assessed as low risk’. For example, is this every person who has infection but not sepsis?

ID	Stakeholder	Statement number	Comments[1]
			The College agrees that it is important that the public have access to clear; straightforward information and advice and feel informed and supported in decision making.
254	Society for Acute Medicine	Draft statement 5	We interpret this statement as meaning that low risk patients are counselled for symptoms and signs which indicate their condition is deteriorating, safety netting patients we discharge. We feel the dilemma here is that patients with sepsis are not the same as those with an uncomplicated infection. Please clarify the patients we are counselling and safety netting are not, by definition, suffering with sepsis. Are you saying all patients with an infection are counselled in anticipation of potentially developing sepsis?
255	St. Mary's Hospital & Imperial College London	Draft statement 5	We fully support the wording and content of Statement 5. We would like to stress the importance of providing targeted safety netting information to parents and caregivers at the time of discharge. Improving the evidence on effective mechanisms of delivering safety netting advice in emergency care departments, as well as improving the evidence on the contents of safety netting advice need to be encouraged as a topic of continued research.
256	The British Society for Antimicrobial Chemotherapy (BSAC)	Draft statement 5	This should be modified to say people with suspected infection who have been seen……and how to monitor access medical care if symptoms worsen or do not improve within a time given.
257	The Royal College of Anaesthetists	Draft statement 5	Safety netting and listening to the concerns of the patient and particularly family members is very important. We strongly support this and suggest a national card or leaflet should be developed and used.
258	The Royal College of Anaesthetists	Draft statement 5	There is a typing error in the 'rationale' section. Last sentence should read "This will" NOT "This iwill".
259	Alder Hey Children's NHS Foundation Trust	Draft statements 2, 3 and 4	Correct "…at least one criteria…" to "…at least one criterion…".
260	All-Party Parliamentary Group on Sepsis	Draft statements 2, 3 and 4	The APPG welcomes the reference to the need for review within one hour of admission for those suspected with sepsis and to prescribe and administer antibiotics within this time.
261	North West Ambulance Service NHS Trust	Draft statements 2, 3 and 4	As an ambulance service there is a concern around where the 1 hour count starts? There is not enough clarity in the statements and focuses more on the acute setting than pre hospital. If the hours starts from an ED arrival that has the potential to be hours after sepsis is identified and again sepsis patients identified in the community are at risk of unnecessary delayed treatment.
262	Royal College of Emergency Medicine	Draft statements 2, 3 and 4	"within 1 hour of risk being identified" – This time is not clearly defined. It might be arrival at hospital, or triage, or at initial assessment when enquiring about urine output or during examination. Does this need to be more clearly defined?
263	St. Mary's Hospital & Imperial College London	Draft statements 3 and 4	We are concerned that the standards are insufficiently clear in their wording describing the possibility of de-escalating the level of care by senior decision makers in relation to the statements on antibiotics and fluid bolus to

ID	Stakeholder	Statement number	Comments[1]
			be given within 1 hour (Statements 3 and 4). Seen in isolation the statements appear to leave no room for alternative management strategies in children with one high risk criterion or more than one moderate-to-high risk criteria. The current guidance suggests that the predictive value of one of these criteria is not determined on the basis of probability but requires the pathway of care to be followed without thought. In many instances the approach of assessing and observing a febrile child is important in the overall management of an undifferentiated population of patients who attend the emergency department. For example, a child with tonsillitis, a condition that can be managed with antipyretics, fluids, pain relief and if indicated antibiotics, should not trigger an instantaneous response with intravenous antibiotics and hospital admission. Statements 3 and 4 will endanger the often applied and generally safe strategy of careful watchful waiting in a paediatric emergency department or paediatric assessment unit. Another issue that should be taken into account is the potential for increased number of adverse drug reactions, thrombophlebitis and risks of inappropriate fluid management if guideline recommendations are followed for all children triggering sepsis pathways. All this should be weighed against the improved management of children with true sepsis: our pilot data suggest that unwell, haemodynamically unstable children with sepsis already receive guideline-compliant care in our setting with no evidence of adverse outcomes in those with delayed interventions. Statement 3 and 4 appear to contradict Statement 2: by implying that intravenous antibiotics and fluid boluses should be given within the same timeframe that a senior decision maker is expected to have seen the child, it suggests that these events are independent triggers of the sepsis pathway. The evidence of using lactate levels guiding fluid resuscitation in routine paediatric emergency care is not well described. The full guideline mentioned the study by Scott et al. (Acad Emerg Med, 2012) is the only paediatric study in an undifferentiated population. Recently, a second paper by Scott et al. (JAMA pediatrics, 2017) has assisted in understanding the role of elevated lactate levels in a more general population of febrile children.(5) One concern is the effect on lactate levels of medication such as salbutamol, in children with wheeze, tachypnoea and a focus of upper or lower respiratory tract infection); or of sampling method (eg: capillary sampling methods, overestimating lactate). In some patients raised lactate levels may arise from inadequate tissue oxygenation related to severe anaemia rather than inadequate tissue perfusion – in these cases non-blood fluid boluses are likely to be harmful. No study has comprehensively addressed the role of routinely performed lactate estimation in children for

ID	Stakeholder	Statement number	Comments[1]
			triggering a sepsis tool, and the true impact of Statement 4 cannot be anticipated without proper pilot data. Finally, given the duration required for an antibiotic infusion in a child, in addition to the time taken to gain access, and time to prescribe and prepare antibiotics, the wording 'should be given within 1 hour' will be unrealistic in many instances. Rewording of this statement should consider the importance of commencing antibiotics as early as possible ('initiating the infusion of antibiotics within one hour'), rather than setting a time limit by which antibiotics are to have been given. Data on process measures a) and b) as well as outcome data for Statement 3 are being collected for children at St. Mary's hospital (pre-implementation data). Data on process measures as well as outcome measures b) and c) for Statement 4 are being collected for children at the paediatric emergency department of St. Mary's hospital (pre-implementation data).
264	All-Party Parliamentary Group on Sepsis	Additional area	The All-Party Parliamentary Group welcomes the recommended intervention programme identified within this draft guideline however we believe that this should be named, or at least referenced, as the Sepsis Six. According to the recent NCEPOD report 94% of British hospitals use the Sepsis Six and we therefore believe that the Sepsis Six should be appropriately acknowledged within the NICE Quality Standard.
265	All-Party Parliamentary Group on Sepsis	Additional area	The All-Parliamentary Group on Sepsis is concerned that there is no reference to 'Red Flag' sepsis, the tool introduced by the UK Sepsis Trust in 2015 and which forms the basis for the high risk criteria.
266	All-Party Parliamentary Group on Sepsis	Additional area	In order for the guidance within this Quality Standard to be taken up the Group believes that each Trust should nominate a sepsis champion to lead across all areas for best practice in sepsis treatment.
267	Becton Dickenson (BD)	Additional area	BD welcomes the reference to the need for review within a one hour window of presenting for any person who is suspected to be suffering with sepsis. The guidelines must state that antibiotics should be prescribed and administered within this time window. This should include the rapid taking of at least 2 blood cultures to confirm diagnosis and diagnose an appropriate and effective treatment pathway. BD believes that blood cultures are a vital part of the sepsis pathway. Without a quick, accurate diagnosis patients will be kept on broad spectrum antibiotics for longer, sometimes not treated correctly and miss out on appropriate diagnosis. BD believes that the challenge of rapid reliable processing of blood cultures in order to optimise outcomes for patients, including reducing length of stay, while providing procedural opportunities to improve antimicrobial stewardship and facilitate seven day working remains and is an issue that needs to be given further profile.

ID	Stakeholder	Statement number	Comments[1]
268	Becton Dickenson (BD)	Additional area	BD welcomes the recommended intervention programme identified within this draft guideline. BD believe that the Sepsis Six could be appropriately acknowledged within the NICE Quality Standard.
269	Becton Dickenson (BD)	Additional area	BD believes in the use of local clinical champions as an effective tool to maintain an appropriate profile on the diagnosis and treatment of Sepsis. The guidelines should consider ensuring that each Trust nominates a sepsis (nursing) lead across all areas to drive guideline implementation and best practise..
270	Cardiff and Vale University Local Health Board	Additional area	Agree with this fully. This would benefit from being made into a Quality Statement incorporating diagnosis and source control where feasible.
271	Cardiff and Vale University Local Health Board	Additional area	The Quality Standard addresses most of the key areas, but makes no mention of the impact of Post-Sepsis Syndrome, which has a significant impact on sepsis survivors and their families. With this estimated to affect more than 20% of survivors, there needs to be resources invested in improving the care of sepsis survivors to reduce the impact on the patients, their families and society in general.
272	Great North Children's Hospital Newcastle upon Tyne Foundation Hospitals Trust	Additional area	Neutropenic sepsis or a pathway for sepsis in the immunocompromised child is not included in this guideline
273	Integrated Care 24 Ltd	Additional area	Providers should have an annual internal sepsis workshop to review these cases and other updates.
274	Integrated Care 24 Ltd	Additional area	Data sharing agreements with local hospitals would support follow up these patients to see the end outcome and use this as learning.
275	NHS England	Additional area	There should be a standard on source control (this means for example where an abscess is the source of the infection leading to sepsis, the abscess must be drained – antibiotics alone don't work)
276	NHS England	Additional area	procalcitonin testing phenotype and genotype testing There is an uneven use of diagnostics within this document with some diagnostic measures being considered as required, without remit for provision of diagnostics within settings. Other diagnostics have been omitted entirely. Suggest include:
277	NHS England	Additional area	Question 1 I believe that most of the key areas for QI are covered in this standard. It would be helpful to be even more explicit about the link with antimicrobial stewardship – potentially referencing the importance of patient review by a senior clinical decision-maker once microbiological culture and sensitivity results are available, so that inappropriate antibiotics can be stopped quickly. The other thing that's missing is the importance of source control: if

ID	Stakeholder	Statement number	Comments[1]
			a person has sepsis due to an abscess or an infected obstructed ureter, for example, antibiotics alone will be inadequate and they also need urgent source control through drainage of the infected source.
278	NHS England	Additional area	Question 1 Does this draft quality standard accurately reflect the key areas for quality improvement? No – it does not include focus on improving use, access to, recording on action of diagnostics for sepsis No – it does not include review of antibiotics following definitive pathogen identification/resistance information No – it does not specify the required observations/expectations
279	NHS England	Additional area	Post sepsis recovery and severity of lasting effects measure Trust sepsis complaints measure number received and patient satisfaction of handling Trust litigation for sepsis – cost and case numbers Vaccination for infections as measure of protection from sepsis (eg. strep pneumo)
280	Royal College of Midwives	Additional area	We would like more information on sepsis and pregnancy, including the assessment of pregnant and postnatal women
281	Royal College of Nursing	Additional area	Whilst we understand only five points are proposed to be included in this Quality Standard, a future consideration could be follow up of critically ill patients as this is a poorly understood area and needs more data and focus.

Registered stakeholders who submitted comments at consultation

- Advisory Committee on Antimicrobial Prescribing, Resistance and Healthcare Associated Infection
- Alder Hey Children's NHS Foundation Trust
- All-Party Parliamentary Group on Sepsis
- Association of Anaesthetists of Great Britain & Ireland
- Becton Dickenson
- British Infection Association
- British Society for Antimicrobial Chemotherapy
- Cardiff and Vale University Local Health Board

- Faculty of Intensive Care Medicine & Intensive Care Society
- Great North Children’s Hospital Newcastle upon Tyne Foundation Hospitals Trust
- Integrated Care 24 Ltd
- Meningitis Now
- MSD
- National Sepsis Cluster, National Patient Safety Collaborative
- NHS England
- North West Ambulance Service NHS Trust
- Nottingham University Hospitals NHS Trust
- Public Heath England
- Regional Sepsis Stakeholder Group of the Oxford AHSN Patient Safety Collaborative
- Royal College of Anaesthetists
- Royal College of Emergency Medicine
- Royal College of General Practitioners
- Royal College of Midwives
- Royal College of Nursing
- Royal College of Paediatrics and Child Health
- Royal College of Pathologists
- Royal College of Physicians

- Royal College of Physicians of Edinburgh
- Royal Pharmaceutical Society
- Scottish Antimicrobial Prescribing Group
- Society for Acute Medicine
- St. Mary’s Hospital & Imperial College London
- UK Clinical Pharmacy Association