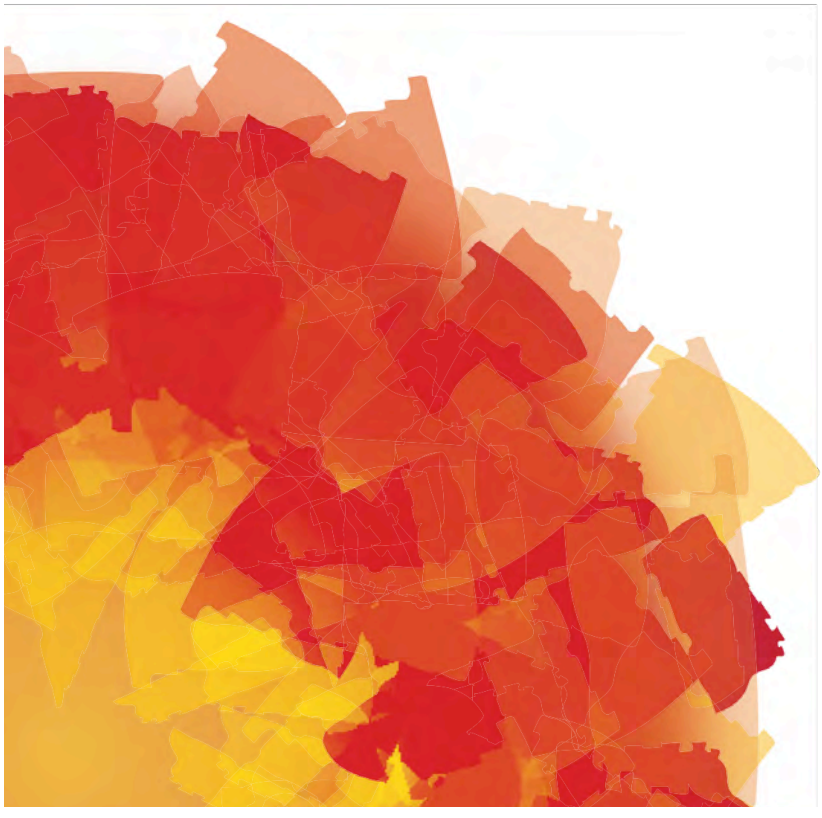
Toolkit: Supporting information and workbook for Clinical Staff working within 999 and 111 in the identification and triage of potential sepsis- 2016

This clinical toolkit has been developed in partnership with Integrated Care 24 (UK) and is derived from clinical guidance for face to face evaluation provided by the National Institute for Health and Care Excellence (NICE) in the 2016 NICE Clinical Guideline on Sepsis (NG51). It is designed to provide operational solutions to the complexities challenging the reliable identification of sepsis in telephone triage, and complements clinical toolkits designed for other clinical areas.



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Introduction

Sepsis is a life-threatening condition, responsible for approximately 44,000 deaths annually and 150,000 hospital admissions in the United Kingdom every year (All Party Parliamentary Group on Sepsis 2015). The mortality rate for patients with severe sepsis is 30% - approximately 5 times higher than for ST elevation myocardial infarction (MI) or stroke.

Given the enormous scale of the condition, the reliable recognition of sepsis is the responsibility of all health professionals. An awareness and educational campaign in secondary care has increased awareness and helped to structure the treatment of sepsis once a patient reaches hospital. However, there is still much to do in supporting pre-hospital care clinicians to recognise possible signs of sepsis early, in order to avoid treatment delays and thus help prevent serious complications or death.

In December 2015 NHS England published an extensive action plan designed to improve the prevention, recognition, diagnosis and treatment of sepsis, as well as raise awareness of the condition amongst the public (NHS England 2015). The report has a strong focus on ensuring that professionals are educated about sepsis, trained in identifying and treating the condition promptly and ensuring that they have access to evidence based guidelines. To this end, NICE has also published a clinical guideline and accompanying set of tools and resources to improve the recognition and management of sepsis: https://www.nice.org.uk/guidance/ng51

To help set the scene, watch this short introductory video on sepsis, presented by world expert Dr. Ron Daniels: an introduction to sepsis

The Challenge of Sepsis for 999 and 111

This resource provides 999 and 111 clinicians with enhanced knowledge for managing those suffering from potential sepsis. It is part of the wider campaign to increase patient awareness of the condition and to assist other pre-hospital services in the task of early recognition.

Time out exercise 1

What are some of the challenges to reliable identification of sepsis within a telephone environment?

Discussion

Distinguishing serious illness from minor illness, based only on a verbal assessment, is the fundamental challenge of telephone triage. Patients with developing sepsis will often present when they're starting to experience some degree of organ dysfunction. For example, this might present as fast breathing, low urinary output or abnormal skin colour. Even in a face-to-face setting it can be a challenge to pick up these sometimes subtle signs of early sepsis, however, as a clinician you would be able to observe and evaluate these signs using objective measurements and investigations where needed. Clearly, there is no opportunity for physical examination or visual verification of reported signs and symptoms over the telephone. Within telephone triage, we are reliant on what we can hear and discern over the telephone, and this can be vague, inconsistent, inaccurate, sometimes misleading and highly subjective.

Most of the signs and symptoms that occur with sepsis are also seen in much more minor illnesses such as 'flu. A good example of this is the phenomenon of cold extremities in young children. Anyone who has had children will know that this is a fairly commonplace occurrence, which is not necessarily suggestive of critical illness. However, when cold extremities are seen in a child who is also very unwell, this is a sign that needs to be taken seriously because it may be a sign that circulation is compromised.

With this in mind, it is important to remember your goals within telephone triage and the extent of what is possible. The goal of triaging with NHS Pathways is to 'rule out' rather than diagnose possible causes. When the system gets to a point where it cannot rule out a certain cause, a disposition will be generated. As you know, this disposition could be something very urgent or one with a much longer timeframe and lower skill-set. If it is not possible to rule out sepsis, an urgent disposition will be delivered, due to the time-critical nature of this sometimes fatal disease.

One of the key markers in someone with sepsis is that they will feel really unwell. Of course, the reporting of severity of illness is always going to be subjective, so this in itself is also not an exact

science, particularly in small children who don't have the verbal skills to be able to explain how they are feeling. Therefore having an excellent grasp of the assessment of illness severity is a key skill in ensuring appropriate outcomes for patients. This applies to both clinical and non-clinical staff.

Another confounding factor in the identification of sepsis is that public awareness and recognition of the condition is relatively limited, unlike for conditions such as MI or stroke, so callers may also be relatively unconcerned about the severity of the illness they are reporting and this can sometimes influence the person managing the call, leading to 'wellness bias'.

Watch this short video which further emphasises the importance of all health care professionals keeping the possibility of sepsis uppermost in their minds, and how someone deeply affected by sepsis is helping to raise awareness: Facts about sepsis

Anyone working within telephone triage should be familiar with the significant morbidity and mortality associated with sepsis, and should have a good understanding of the condition and their responsibility in relation to the effective assessment of people with possible sepsis. For 111 and 999 clinicians, this involves being able to manage patients effectively but also involves supervising, supporting and guiding non-clinical staff in relation to carrying out safe and effective telephone triage.

Clinicians working within telephone triage will inevitably have contact, whether directly or indirectly, with patients who are suffering from sepsis. Patients with sepsis will often have multiple symptoms that may be difficult to prioritise, and which may be quite vague. Call handlers should therefore seek to transfer these to clinicians via 'early exit'. Parents of children with sepsis will often have a strong feeling that something is seriously wrong with their child. This may mean that they refuse a disposition if they feel it is not adequate, a situation which should also prompt call transfer for a clinician's input. When a parent, carer or relative expresses an unusual degree of concern about the patient's condition or behaviour, it is important that this is always given due consideration.

Staff working in 999 and 111 will often be the first point of contact for patients with sepsis. A 2013 study from Scotland showed that over 85% of patients with severe sepsis or septic shock in Emergency Departments were transported there by ambulance (Gray et al 2013) and there is no reason to expect why this isn't the case in England. Therefore, it is essential that 999 and 111 call handlers and clinicians are well educated about sepsis and realise the key role they have to play in responding to this time critical condition. Prompt treatment is crucial and a delay anywhere in the chain of assessment, diagnosis and treatment can have devastating consequences. For example, for patients with septic shock, for every hour that appropriate antibiotic administration is delayed, there is an 8% increase in mortality (Kumar et al 2006).

The pre-hospital link in the chain of assessment, diagnosis and treatment presents both opportunity and risk. Early recognition of sepsis within this phase means that patients can start receiving potentially life-saving treatments early, whereas delays can literally cost lives.

Sepsis: An Overview

Sepsis is a relatively common and potentially life-threatening condition triggered by an infectious cause. The most common sources of infection are those arising in the respiratory system, abdominal organs, skin and urinary tract. The condition affects all age groups, however the very young and very old are most commonly affected. Sepsis can progress from a mild illness to something that is life threatening very quickly.

When sepsis occurs, the immune system goes into overdrive, setting off a series of systemic reactions including widespread inflammation, swelling and blood clotting. In the later stages of sepsis, blood pressure can drop dramatically leading to poor organ perfusion. Without prompt treatment, organ failure and death can occur. Most cases of sepsis are caused by common bacteria which we all encounter every day, without becoming ill. It is the body's abnormal response to the infection, rather than the infectious organism itself that causes multi-organ failure and death.

As we have already discussed, there are many similarities between the early stages of sepsis and other more common illnesses such as 'flu, so patients may feel they 'just have 'flu'.

The signs and symptoms of sepsis can include:

- An increased respiratory rate
- An increased heart rate
- Feeling cold and shivery (rigors) or looking flushed and feeling hot
- Very high or low temperature. Remember that not all groups of patients with sepsis will present with a fever, particularly the very young/very old/frail patients, those having treatment for cancer, and patients with advanced sepsis.
- Skin colour changes suggestive of poor peripheral circulation, such as pallor, blotchiness, mottling and cyanosis (remember these can also be normal in very young children- the key is that they're also very unwell). The rash we associate with meningococcal infections can also be caused by illness arising from other bugs and is a sinister sign- ask about the glass test if a rash is reported in an unwell patient even in the absence of symptoms of meningism.
- Aching muscles and tiredness
- Sickness and/or diarrhoea
- Poor appetite
- Drowsiness (all sleeping patients must be woken up when the system presents the breathing and conscious question to ensure that they are able to be woken easily)
- Altered mental state. This may be quite subtle where the patient just seems a little muddled or 'spaced out' or more pronounced where the patient is disorientated and overtly confused. Increased irritability may be a sign of altered mental state in adults with dementia and children. A person's mental state should be interpreted in the context of their normal function and any changes should not be ignored.
- A weak, high pitched or continuous cry (in infants and very young children)
- Reduced urine output
- Depending on the source of the infection, this may also generate specific symptoms such as pain, a cough, skin inflammation and so on.

Sepsis has a high mortality rate and now claims more lives than lung cancer. The long-term consequences for survivors of sepsis where treatment is delayed include chronic pain and fatigue, organ dysfunction, limb amputation and post-traumatic stress disorder. Unfortunately, the incidence of sepsis is increasing and this trend is likely to continue with an increasingly aged population. Additionally, medical advances mean that those with significant co-morbidities are more likely to survive their illness and live longer than previously, which results in much of the hospital-acquired sepsis that now occurs.

We do not always know why some people develop sepsis in response to an infection, particularly those without existing morbidity. Often the illness progresses from something seemingly minor to something life threatening over a short time frame, even in someone who has been previously healthy. People are more likely to develop sepsis after a viral infection or minor injury, and there are a range of other factors which increase the risk of sepsis. These are:

- Extremes of age (under 1 year or over 75 years)
- Extreme frailty
- Diabetes
- Chemotherapy. NICE recommends that any patient having anti-cancer treatments who becomes unwell should be immediately assessed face to face for potential sepsis https://www.nice.org.uk/guidance/cg151
- Anti-rejection therapy following a transplant
- Other illnesses and drugs causing immunocompromise such as long-term steroids, sickle cell disease, immune-suppressants for rheumatoid arthritis, post-splenectomy
- Post-surgical infection or complications
- Pregnancy/recent childbirth/termination/miscarriage
- Indwelling lines/catheters/IV drug use/any breach of skin integrity

For some people, such as extremely frail elderly patients, sepsis is an unpreventable cause of death. However, for other population groups, sepsis is more responsive to treatment and in many cases, deaths can be avoided. Earlier recognition and better treatment could reduce the mortality and morbidity associated with sepsis with some estimates suggesting that 12,500 deaths per year from sepsis could be avoided.

Watch this eighteen-minute video to understand more about the impact of sepsis. It has information relating to the hospital treatment of sepsis, however there is also a great deal of valuable information relevant to your role: sepsis overview

Defining Sepsis

Clearly, it is not your role within telephone triage to diagnose sepsis. However, it is useful to have an understanding of the indicators of clinical concern in relation to sepsis, in order to appreciate how these signs and symptoms might present and be described over the telephone.

The UK Sepsis Trust, in collaboration with NICE, has created a series of NG51-compliant risk stratification tools for diverse clinical environments. Though NG51 does not cover telephone triage, a suggested interpretative version for telephone triage is shown over the page. This tool is presented here merely as an example, and as background information. The tool relates to those aged 12 years and over. Further age specific tools are available here:
http://sepsistrust.org/clinical-toolkit/

With the advent of the NICE guideline and recent updates to international definitions, sepsis is further categorised within the UK into levels of severity: the presence of high risk criteria is termed Red Flag Sepsis (which includes septic shock), and moderate risk criteria define Amber Flag Sepsis, In the pre-hospital environment, the lack of ability to carry out and interpret tests limits the ability to distinguish between the different levels, nevertheless it is useful to be aware that sepsis can vary in its presentation.

Your logo

GP/ OOH Telephone Triage Sepsis Tool

To be applied to non-pregnant adults and children 12 years or over with infection symptoms

N.B: there is no systems substitute for clinical experience & acumen, but Red Flag Sepsis will help with early identification of children with systemic response to infection

THE UK SEPSIS TRUST

Treatment of Sepsis

We will come back to the issue of signs and symptoms of sepsis, and how these might present over the telephone. However, before that it is worth briefly outlining the treatment for sepsis.

There is strong evidence underpinning the current treatment regime for sepsis. This treatment package is known as the 'Sepsis Six' and has been shown to reduce mortality by 46.6% when delivered to those with severe sepsis within one hour (Daniels et al 2011). This highlights the crucial role that rapid assessment and referral have in improving outcomes for Red Flag Sepsis.

The Sepsis Six consists of three diagnostic and three therapeutic steps, which must be implemented within one hour of sepsis diagnosis. These are:

- High-flow oxygen to maintain saturations above 94%
- Blood cultures
- Appropriate intravenous antibiotics
- Measure serial serum lactates
- Intravenous fluid resuscitation
- Accurate measurement of urine output

Centres in more than 12 countries throughout the world use this treatment bundle, which has been associated with reduced mortality, shorter hospital stays and fewer intensive care bed days (Daniels et al 2011)

Presentation of Sepsis within a Telephone Triage Environment

As a clinician or non-clinician working within telephone triage, it is important to use verbal clues together with non-verbal interpretational skills as surrogates to direct clinical assessment. Remote triage is reliant on the subjective reporting of signs and symptoms, rather than objective measurements you carry out yourself. Nevertheless, as a clinician involved in pre-hospital care it is vital that you are aware of the physiological signs and that you consider how some of these might be expressed over the telephone.

Take some time now to think about how the following signs/symptoms might manifest and be described to a call handler or yourself over the telephone. Consider different age groups.

Altered mental state

How might this be described over the telephone?

Out of it, spaced out, confused, drowsy/sleepy, disorientated, 'not themselves', not responding, floppy, limp, can't get through to her/him, just lying there, not really doing anything, can't stay awake, drops back off to sleep straight away, very tired.

Hyperthermia

How might this be described over the telephone?

Burning up, feverish, raised temperature, hot, very warm, flushed, shivering/shaking (rigors), feeling cold (with rigors), febrile convulsions in young children.

Hypothermia

How might this be described over the telephone?

Cold to touch, pale, deathly, cold extremities, shivering, teeth chattering, altered mental state, disorientation.

Hypotension

How might this be described over the telephone?

Collapsed, can't stand, dizziness, light-headed, room spinning, weakness, everything's swimming, faint, black out, can't get up

Increased respiratory rate

How might this be described over the telephone?

Breathing hard, breathing fast, breathing quite quickly, panting, out of breath, breathless/panting even when resting.

Increased pulse

How might this be described over the telephone?

Heart/pulse is racing, heart is pounding, pulse is very fast.

Skin changes suggestive of poor peripheral circulation

How might this be described over the telephone?

P*ale, grey, white, blue, mottled, blotchy, ashen, deathly, like 'death warmed up', ghastly, ashen.*

Time out exercise 2

What has this activity demonstrated in relation to the presentation of potential sepsis over the telephone, and what implications does this have for your practice?

Supporting Call Handlers in relation to Sepsis

Anyone working within telephone triage should have a good understanding of the condition and their responsibility in relation to the effective assessment of people with possible sepsis. For clinicians, this involves being able to manage patients effectively but also carries with it the responsibility to supervise, support and guide their non-clinical colleagues in relation to carrying out safe and effective telephone triage.

This supportive function includes:

Education of call handlers

In relation to sepsis this might include answering ad hoc queries, or providing more formal training and education on the condition. It might also include providing feedback to call handlers following call audit or ad hoc monitoring of practice.

Providing real-time advice to call handlers where required

This might include advice about what to do if a caller disclosed certain potentially abnormal physiological signs such as a racing heartbeat.

Recognising where real-time advice to call handlers would be inappropriate and it would be safer to take over the call

This could (for example) include taking over a call where a caller is struggling to give a clear yes or no answer to a Module 0 question, such as whether a child is limp and floppy.

Receiving calls via Early Exit

This could include taking over a call about a child presenting with a multitude of symptoms, but where the caller is unable to prioritise a specific symptom. It might also include accepting a call where communication issues are making it hard for the call handler to assess the patient. Remember to take extra care in your assessment if they're unable to give a clear history, for example, those with English as a second language or people with learning disabilities.

Receiving calls via Early Exit where the disposition has been refused

This might include a situation where a key feature has been inadequately assessed, such as altered mental functioning, and consequently where an inappropriately low disposition has been reached with which the carer disagrees.

Continuing an assessment by a call handler that has resulted in a transfer to clinician disposition

Calls where sepsis is a consideration should not reach a 'transfer to clinician disposition' unless the assessment has been inadequate. Therefore this aspect of a clinician's role involves picking up possible inconsistencies, misinterpretations or inadequacies in the call handler's assessment via the process of effective validation. Careful attention would need to be paid to what has been recorded by the call handler to see if it is congruent with your impression of the patient at the time of your assessment.

Accessible Clinical Support

As a clinician, you should maintain a high degree of suspicion about the presence of sepsis if presented with someone who is unwell, and possibly experiencing signs/symptoms of the condition. However, call handlers cannot be expected to have the same degree of clinical understanding as clinicians, which is why they are taught to early exit when they feel they are at the limits of their knowledge or experience. Callers do often offer up information in relation to things like breathing rate or heart rate, and these should not be ignored. Call handlers should be encouraged to seek guidance and support if presented with information indicative of concerns about pulse rate and respiratory rate, because they can't be expected to judge whether these are abnormal and what their significance is. Organisationally there should be a culture where call handlers have a low threshold for involving a clinician. Analysis of adverse incidents within 999 and 111 shows time and time again how crucial this is to safe delivery of a service.

Time out exercise 3

Call handlers should feel easily able to access clinical support and input, and organisationally there should be a culture where this is encouraged. Spend some time reflecting on your role as a clinician and what you can do to help promote this culture. Jot your ideas down here.

Supporting Effective Probing Skills

Call handlers effectively manage a significant part of the workload of ruling out serious illness such as sepsis. However, as a clinician you have an absolutely vital role to play in supporting them to do this safely and effectively. The system has been developed to ensure that signs and symptoms of serious illness are picked up quickly. However, in order for the system to generate appropriate dispositions for patients with sepsis and other serious illness, it is important that call handlers are supported to employ excellent questioning and listening skills and to remain firmly within the safe boundaries of their role. NHS Pathways is in essence a series of questions to be answered and being able to ask these questions effectively is a vital skill for all call handlers. It is the area that call handlers also frequently need the most support with. As a clinician it is very important to provide this support in a way that helps rather than complicates the situation, and in a way that promotes on-going development rather than compromises it.

Consider the following case study:

A call is made regarding a 5 year-old child. The following call reason is recorded:

'Cough, fever, breathing fast, really unwell'

The call handler asks the parent which symptom is most worrying and is told that it is the fast breathing. The call handler uses the 'Breathing Problems, Breathlessness or Wheeze Pathway'. The call handler reaches a question within the Pathway asking if the child has become confused or more confused than usual. The caller is quite a poor historian and has additionally become quite agitated at being asked what she regards as unnecessary questions. The caller struggles to give a definitive answer and the call handler attempts to probe by asking questions such as 'can you tell me how he's behaving?' and 'is he completely out of it?' The call handler is heard getting a little impatient at not being able to get a clear yes or no answer by a passing clinician, who indicates that the caller should be put on hold.

What should happen next?

Read carefully through the following three courses of action, before evaluating how a clinician should respond.

Course of action A

The clinician reviews the call reason and asks for a short summary of questions answered. The clinician then suggests a series of about 4 further probing questions such as 'does the child seem muddled? and 'is he completely with it?' The call handler is left with the instruction that if a definitive answer can't be obtained, then to answer 'not sure'.

Course of action B

The clinician reviews the call reason and asks for a short summary of questions answered. The clinician suggests to the call handler that they should ask the following questions:

1. Is the child normally well?
2. How long has the cough lasted?
3. Does the child have cold extremities?
4. What treatment has been tried so far to reduce the fever?

Course of action C

The clinician reviews the call reason and asks for a short summary of questions answered. The clinician suggests one further probing question of 'is she responding to you like you'd expect?' The call handler is instructed that if a definitive answer can't quickly be obtained, the call should immediately be transferred to a clinician because confusion along with the child's other symptoms is potentially worrying. The clinician remains present to hear the response and to help the call handler interpret if necessary.

Time out exercise 4

Which of the actions outlined is clinically the most appropriate? Provide a reason for your answer. Note your ideas down here before reading on.

Discussion on course of action A

A is inappropriate for several reasons. Given the child's presentation, it is not possible at this stage to rule out sepsis. Sepsis is a time critical condition, and until the possibility of sepsis has been ruled out, the approach should be to keep unnecessary questions and discussion to a minimum. This does not mean that probing should not occur, it simply means that it is better to use one or two **effective** and **strong** probing questions that establish the necessary information, rather than a string of weaker ones. It's also important to recognise when further probing is **not** going to produce a definitive answer and is just wasting time.

It's clear in this scenario that both the caller and the call handler are becoming agitated. This normally indicates some kind of communication breakdown. Perhaps the caller doesn't feel listened to or doesn't understand the relevance of the questions being asked. Maybe the call handler cannot make sense of what is being reported or doubts the reliability of it. Suggesting a **series** of further probing questions is likely to aggravate the situation, and in any case, should not be necessary. Saying whether your child has an altered mental state should not be a difficult question to answer, so if any more probing is required, this should be minimal.

Discussion on course of action B

This is also inappropriate, because the questions being fed by the clinician are additional questions unrelated to the question being considered, rather than probing questions designed to rule out confusion. They may be perfectly valid questions but if the clinician feels this information is needed to make a decision, they should take over the call in order to ask the questions and interpret the answers themselves.

Discussion on course of action C

Course of action C recognises that further probing is needed in order to establish a clear response and to ensure an appropriate outcome for the patient. The probing question relates directly to the question in front of the call handler, rather than relating to something else. Therefore, this probing question keeps the call handler within the scope of their role. The approach of suggesting only one probing question and instructing that a vague answer necessitates immediate transfer to a clinician, recognises the importance of acting efficiently and swiftly until sepsis has been ruled out. Remaining with the call handler is good practice, given that communication seems difficult.

Probing effectively is the area that call handlers frequently need the most support with. However, you must always provide this support in a way that helps, rather than complicates the situation, particularly in a potentially time critical situation. It's also important that any guidance given is done in a way that promotes on-going development of safe call handling skills rather than undermines it. In providing support with questioning, it is essential to understand the role of the call handler. Triage by non-clinicians is proven to be safe when it is carried out using a robust clinical decision support system and when the call handler adheres to the underlying principles on which the system has been designed. One of these core principles is that call handlers should not generate their own questions, except for the purpose of probing for more information in relation to system-generated questions. Therefore, the clinician should support the call handler to focus closely on the question in front of them.

Time out exercise 5

Additional questions should not be 'fed' to the call handler to ask, unless they are specifically for the purpose of clarifying information in relation to the question in front of them. There are a number of risks in feeding a call handler supplementary questions that are not focused solely on the question that has been presented by the system. Before reading on, take some time to think through the possible risks of this approach and note your ideas down here:

Additional questions should not be 'fed' to the call handler to ask, unless they are specifically for the purpose of clarifying information in relation to the question under consideration. The risks in feeding a call handler supplementary questions that are not focused solely on the question include:

- Call handlers can lose confidence in the system and their own ability to carry out safe assessments, if they feel there are other key clinical questions that haven't been presented by the system. This is most likely to happen with call handlers who have a lower tolerance of risk

- Call handlers with higher risk tolerance may start to imitate this unstructured, unsupported questioning style. In the absence of a clinical background, this practice is inappropriate.

- Call handlers often do not know how to respond to information provided by callers when supplementary questions are asked. This is because it is not provided in context of the question presented by the system. A frequent consequence of this is that call handlers then need to put the caller on hold in order to relay the information to the clinician for them to make a decision about what to do. This can lead to a very disjointed call.

Effective Validation in ruling out Sepsis

The system is designed to rule out possible sepsis and there are many points at which possible symptoms will be picked up. These include questions about breathing, shock, confusion, severe illness, poor peripheral circulation, functional capacity, responsiveness, fever and so on.

Patients with Red Flag Sepsis or septic shock should be picked up within Module 0 or at the top end of Module 1. Patients with infection with perhaps one Amber Flag criterion but who remain relatively well should be picked up within symptom based Pathways in Module 1, therefore it could be argued that clinicians won't encounter many patients with sepsis, since Module 0 and Module 1 tend to be the territory of call handlers.

However, picking up patients with sepsis within Module 0 or Module 1 is dependent on the call handler using the system skilfully and on them extracting the right information from callers. Mostly, call handlers conduct excellent assessments, which is demonstrated by the fact that there are now about 14 million calls per year being handled through NHS Pathways in 999 and 111, with only a very tiny percentage of these being classed as adverse incidents. When a call is transferred to you for whatever reason, one of your critical roles as a clinician is to check that the call handler has conducted a thorough and safe assessment. As you know this process is called 'validation'. Through the process of validation you should ensure that the assessment is a true reflection of the current condition of the patient.

This aspect of a clinician's role involves picking up possible inconsistencies, misinterpretations or inadequacies in the call handler's assessment via the process of effective validation. Careful attention needs to be paid to what has been recorded by the call handler to see if it is congruent with your impression of the patient at the time of your assessment.

Consider the following case study:

A call is made about a 25 year-old woman with very severe flank pain. The call handler records the following as the reason for the call:

'Flank pain, fever, breathing quickly, spaced out'

The caller reports that the flank pain is the worst issue, and the call handler uses the Flank and Side Pain Pathway to triage the patient.

A disposition of Contact Primary Care Service within 2 hours is reached. At this point the patient's partner becomes very irate saying she is in excruciating pain and needs an ambulance. The call handler early exits because of a refused disposition. The call report from the point of entry into the Flank and Side Pain Pathway is shown below.

- The pain was very severe.
- The individual was under 40 years of age.
- There had been no previous diagnosis of aortic aneurysm or Marfan's syndrome.
- Severe illness and a rash suggestive of septicaemia (sepsis) were not described.
- There was no blood in the urine.
- There was no possibility of pregnancy.
- Childbirth had not occurred within the previous 7 days.
- The individual was not very breathless at the time of the assessment.
- The individual had not coughed up blood.
- There was no abdominal pain.
- The pain did not begin suddenly during physical activity.
- There was a fever at the time of assessment or within the previous 12 hours.
- There was no new shoulder tip pain.
- There was no new or worsening confusion.
- The individual did not use anticoagulant medication or have a bleeding/clotting disorder.
- The pain was constant.
- There was no sharp/stabbing pain on coughing or deep breathing.
- The individual had clinically deteriorated or felt particularly unwell in the previous 24 hours.

Consider the following questions:

1. Looking purely at the documented reason for the call, as a clinician would you be concerned about the possibility of sepsis (*'Flank pain, fever, breathing quickly, spaced out'*)? Provide a reason for your answer.

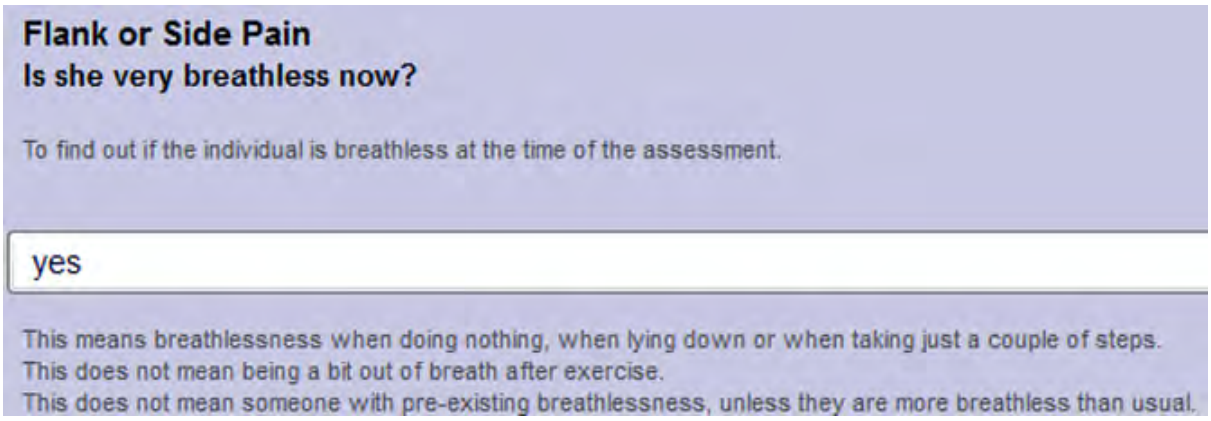
2. Looking at the call report there are some **possible** inconsistencies between the documented call reason and the answers to specific questions. Obviously it would not be possible to determine this without further probing. On the face of it, what *might* these inconsistencies be?

3. What actions would you need to take in response be to these possible inconsistencies?

4. The question below is trying to rule out whether a person is breathless at rest. New breathlessness at rest is clearly an abnormal sign that indicates increased 'work of breathing'. Imagine that when you explore this question with the caller, the responds to say the following:

'Yes, I told the other lady, even when she's just sat in the chair she's breathing heavily. But she just kept asking, 'yes, but is she VERY breathless'. I said it's not like she's run a marathon, but you can see her sort of panting'.

How would you answer the question shown below?



Case Study Discussion

Sepsis is a possibility based on the reason for the call. The flank pain may indicate the presence of an infection, and additional symptoms of concern include an increased respiratory rate, a fever and possible altered mental state.

Within the process of validation it would be particularly important to probe for more information about the breathing pattern the patient is experiencing. It would also be essential to find out more about what 'spaced out' means, to see whether this means the patient is confused. It would be advisable to look at the supporting information for these questions to be sure to probe fully about what the questions are asking. If any inconsistencies were identified you should ensure that these are followed up with the call handler, in order to enhance and improve their knowledge and future practice.

To be breathless at rest is to be 'very breathless' as is explained in the supporting information. This states 'this means breathlessness when doing nothing, when lying down or when taking just a couple of steps'. Therefore, the answer to this question should be 'yes'. This would generate an ambulance response, which is appropriate for someone with possible sepsis.

Call Critique

Listen to call part one, which involves a call handler assessing a two year old child, then answer questions 1- 3:

Call part 1.wav

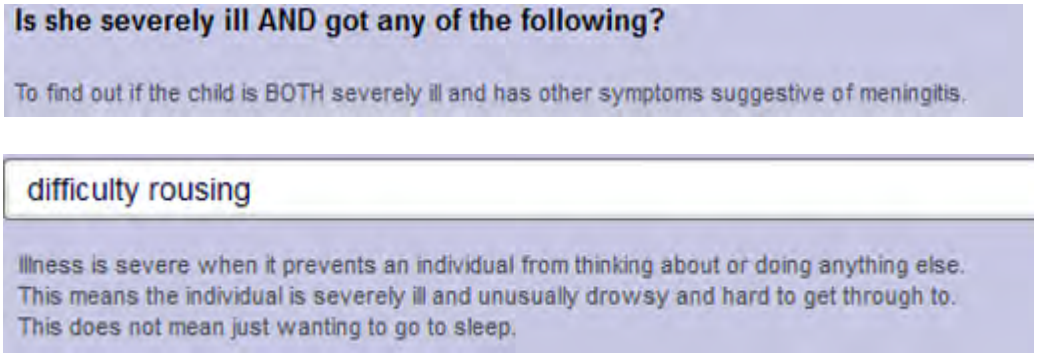
1. With relation to sepsis, what signs and symptoms does this two-year old child have that would give you cause for concern?

Concerning signs and symptoms include:

- A fever of over 39^{0}C
- Increased respiratory rate
- Described as 'pretty limp and floppy'
- Described as 'lying flat' and 'not doing anything at all today' in other words, she fits the definition of a 'severely ill' child. Also described as not having moved in quite a few hours.
- Very drowsy, hard to get through to, not very responsive

2. How would you comment on the questioning that occurs in relation to the question shown below?

The call handler significantly over-probes this question. The caller has already described a 'severely ill' child when he said that she was 'lying flat', 'not doing anything at all today' as well as the fact that she hadn't moved in quite a few hours. Therefore, this aspect of the question did not need to be asked, let alone probed repeatedly. Furthermore he is very clear in his answer to whether she was unusually drowsy and confirms that she is very drowsy, hard to get through to and not very responsive. It may have been necessary to clarify what he meant by 'very drowsy' to check for example, that he didn't just mean tired, but the call handler can be heard repeatedly asking the question as though she doesn't trust the response.



3. The caller is very calm despite the child's worrying presentation. What impact might this have?

When a caller presents as very calm or unconcerned it can lead to wellness bias; in other words, an assumption that the patient is less unwell than the clinical picture being described. This can sometimes lead a call handler or clinician to doubt the severity of the symptoms being presented, which can have an impact on their actions. In this situation, it may have led to the extensive over-probing that occurred and the possible doubt in the call handler's mind about the clear answers she was getting.

Now listen to call part 2 which is the discussion between the call handler and clinician and answer calls 4- 6:

Call part 2.wav

4. What impact does this discussion have?

The discussion focuses the call handler's questioning on whether the child is completely unresponsive. However, this is not what the question is asking. The question is asking about unusual drowsiness rather than complete unresponsiveness. Complete unresponsiveness should be picked up in Module 0. Because the call handler is somewhat misled about the question, it means she then records a 'no' response, when in actual fact it should have been 'yes'.

5. Might there have been a better/safer course of action that could have been taken by the clinician?

The clinician needed to understand the extent of probing that had taken place already. Had they understood this, it might have been clearer that it would have been safer for them to take over the call rather than feeding further questions through the call handler. Alternatively, if they'd had a better understanding of the question being asked of the caller, they would have realised that he had given a clear and definitive 'yes' to this, meaning that the ambulance response was appropriate.

6. As you can hear, the call handler reaches another ambulance response. As per their local policy, this needs to be discussed with a clinician. This clinician on this occasion accepts the call efficiently and without delay. This second clinician carries out an effective assessment and comes to the same outcome as the call handler. An ambulance response is subsequently dispatched. How might the second clinician's actions have led to a better experience for the caller, patient and the call handler involved?

This clinician accepted the call quickly and effectively avoiding the need for the call handler to have to go back to the caller again, which might have been difficult. In this call, the call handler's inclination to transfer to a clinician when required was likely to have been reinforced, rather than eroded. This is very important because there is a limit to the scope of what a non-clinician can do

over the telephone. If call handlers encounter repeated barriers to transferring calls, they may start to adapt their practice in some way in response to this. This may have accounted for the extensive over-probing heard on the first call, as the call handler may have been anticipating needing to 'sell' the disposition or the requirement for clinical input to the clinician.

Because there was only limited discussion between the call handler and clinician, the caller didn't have to remain on hold for an extended period.

And most importantly, because the clinician talks directly to the caller, she is able to establish a much better clinical picture and thus the child gets the correct outcome.

Summary and Conclusion

This clinical resource has taken a far-reaching approach to exploring sepsis within a telephone triage environment, by focusing not only on the condition, but by exploring your unique and important role in relation to it.

Telephone triage is an imprecise science relying heavily on interpretation and human factors, but applied effectively with correct use of underlying clinical systems should normally be able to correctly identify even complex conditions with varied presentation like potential sepsis.

Sepsis is a common condition where patients will often attempt to access health care via out-of-hours services, 111 and 999. It is inevitable that both clinicians and call handlers within these services will encounter patients with sepsis. As a clinician, you have a vital role to play both in your supportive/supervisory role and in your own triage function. Sepsis does present a challenge within this role, for all the reasons outlined within this resource. However, effective system use, skilled support of call handlers and up to date, accurate clinical knowledge are the significant tools at your disposal. Use these tools well, and you will be contributing to the timely and effective identification of sepsis within the community, meaning that patients with the condition have the best chance of effective treatment and recovery.

Reflecting on your Learning

This reflective account structure uses the useful, but straightforward model suggested by Driscoll of 'what?', 'so what?' and 'now what?' Listed below you will find some trigger questions in each category that may prove useful within your reflection. Use some, all, or none of them depending on what you took from this resource.

What……

…have you discovered about the scale of the condition?
…have you learned about the causes, signs/symptoms, risk factors, progression, prognosis and impact of sepsis?
…have you discovered about the definition and categorisation of sepsis?
…have you found out about sepsis treatment?
…explored about ways that sepsis may present over the telephone?
…else have you learned

So what……

... are the challenges of sepsis recognition within remote assessment?
…does this mean for your role supporting, guiding and advising call handlers in relation to possible sepsis?
…does this mean for your role in taking over possible sepsis calls from call handlers?

Now what…

…will you do differently in relation to supporting, guiding and advising call handlers?
…will you do differently in relation to taking over possible sepsis calls from call handlers?
… else does this mean for your ongoing practice?
… further learning do you need to pursue?

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