Wessex Academic Health Science Network

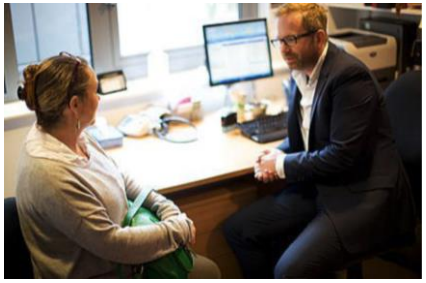
Wessex Patient Safety Collaborative

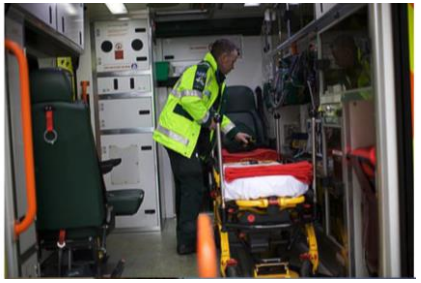
Oxford Academic Health Science Network

PATIENT SAFETY

Sepsis progress & challenges:

What are we doing regionally?

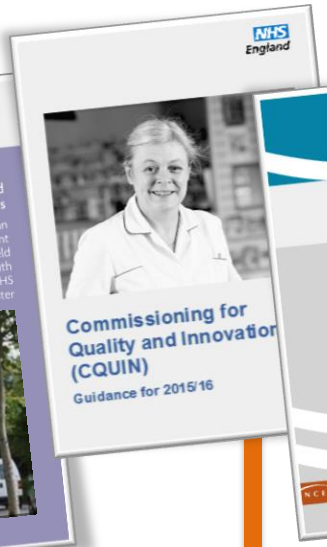


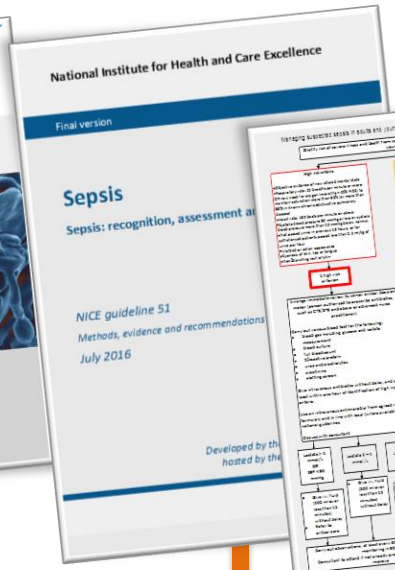



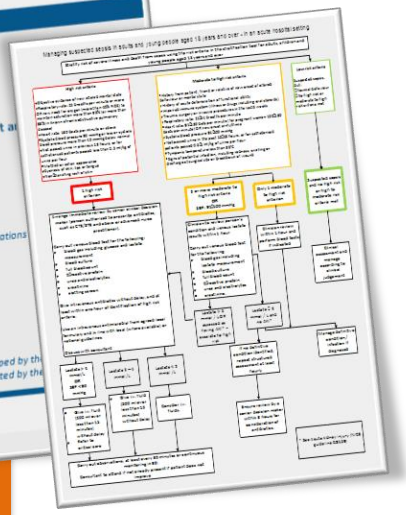
Andrew Brent

Infectious Diseases & Medicine Consultant

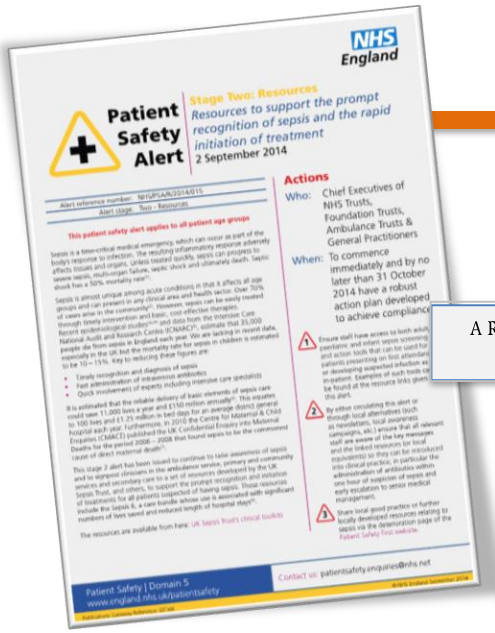
Sepsis Lead, OUH & Oxford Academic Health Sciences Network







2013 2014 2015 2016 2017



Goal-Directed Resuscitation for Pa
with Early Septic Shock

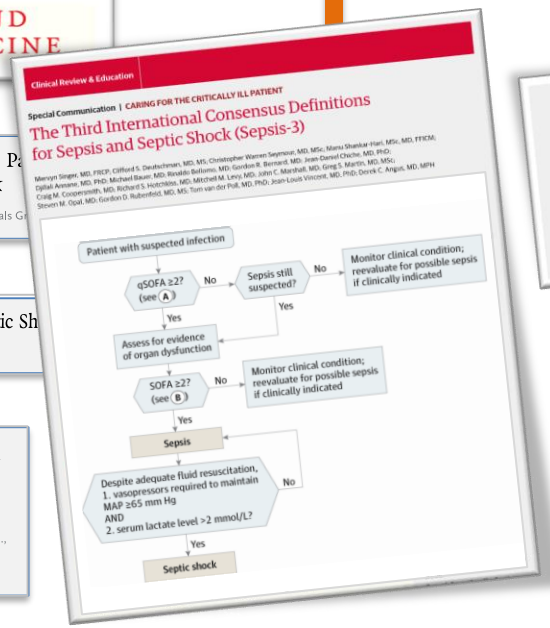
The ARISE Investigators and the ANZICS Clinical Trials Gr

A Randomized Trial of Protocol-Based Care for Early Septic Sh

The ProCESS Investigators*

Trial of Early, Goal-Directed Resuscitation for Septic Shock

Paul R. Mouncey, M.Sc., Tiffany M. Osborn, M.D., G. Sarah Power, M.Sc., David A. Harrison, Ph.D., M. Zia Sadique, Ph.D., Richard D. Grieve, Ph.D., Rahi Jahan, B.A., Sheila E. Harvey, Ph.D., Derek Bell, M.D., Julian F. Bion, M.D., Timothy J. Coats, M.D., Mervyn Singer, M.D., J. Duncan Young, D.M., and Kathryn M. Rowan, Ph.D., for the ProMISe Trial Investigators*



Sepsis

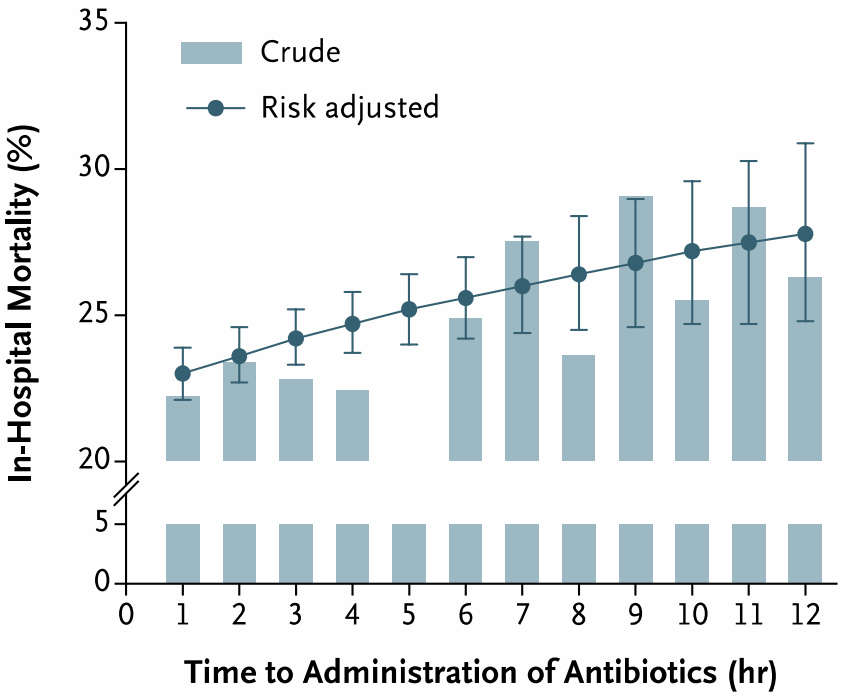
NICE quality standard

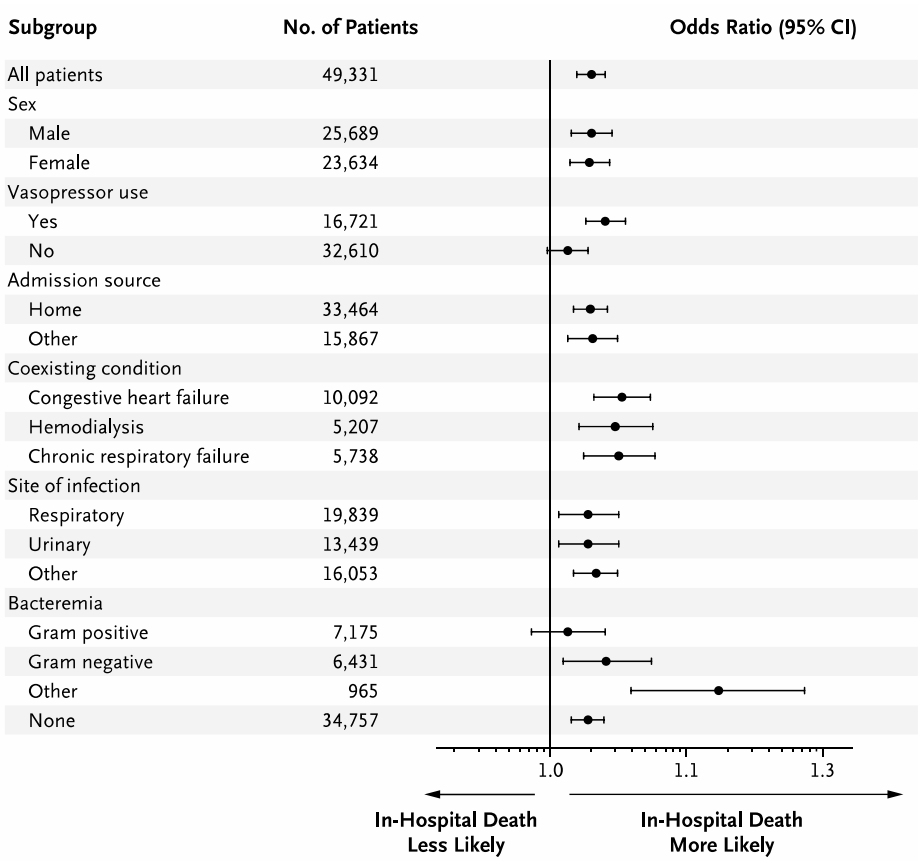
Draft for consultation

ORIGINAL ARTICLE

Time to Treatment and Mortality during Mandated Emergency Care for Sepsis

49,331 patients at 149 New York hospitals





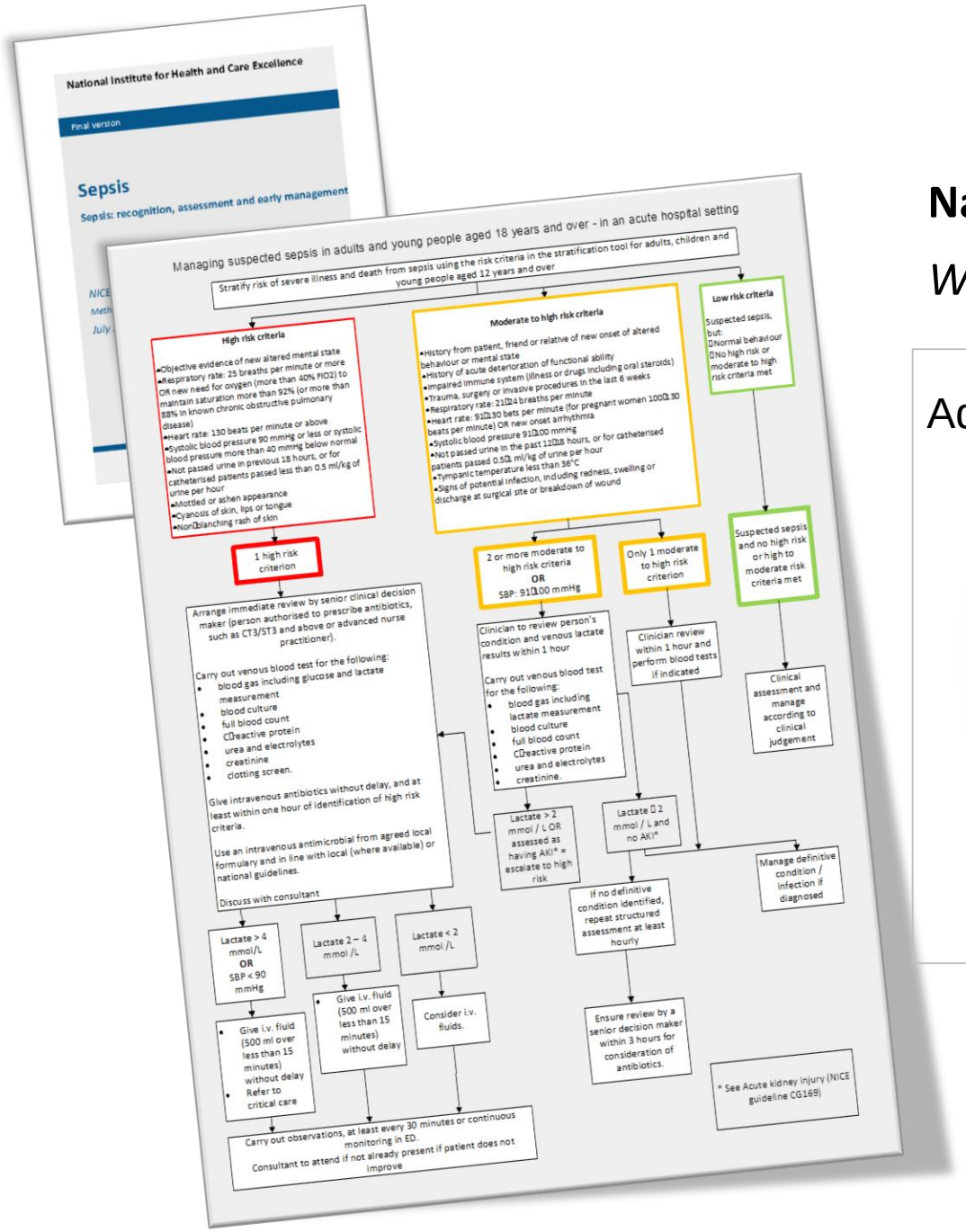
Risk adjusted OR for in-hospital mortality 1.04 (1.02-1.05) per hour

Seymour *et al*. NEJM 2017

Oxford AHSN Sepsis Group

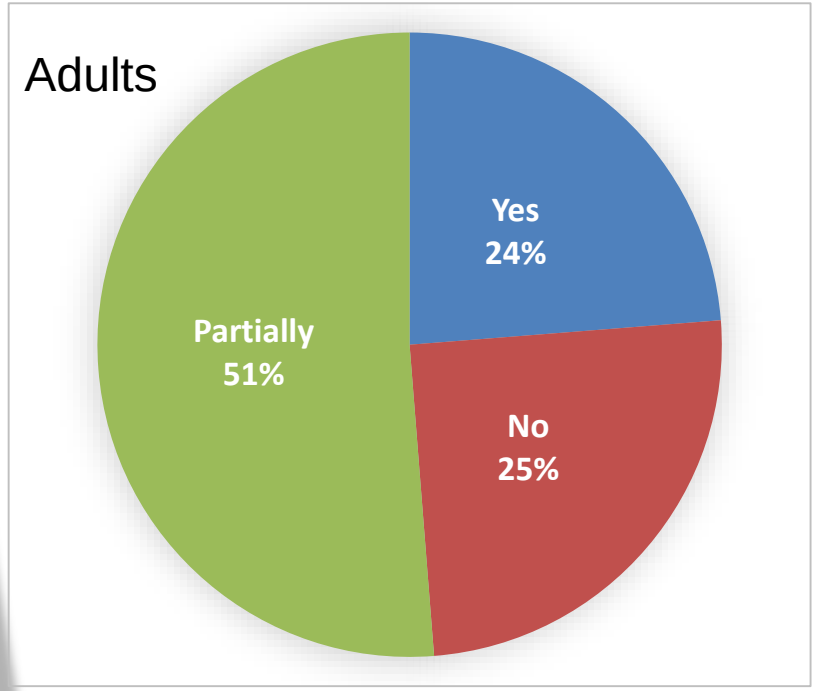
Aims

- Share quality improvement initiatives
- Share resources (e.g. for training)
- Share data (process & outcome; combine to max learning)
- Joint quality improvement projects (± research)
- Collaboratively review & apply guidelines



National Sepsis Stakeholder Audit

Will you be implementing NICE?



82 respondents
>50 acute Trusts

Oxford AHSN approach

- Regional approach to implementation

- Integrate into existing pathways
  - Community
  - Acute admissions
  - Deteriorating patients (Track & Trigger / Early Warning Scores)

- Keep simple; build on progress already made
  - ‘Red Flag’ Sepsis
  - Sepsis Six
  - Neutropaenic Sepsis

Murray, Brent. *Clinical Medicine* 2018 (in press)

THINK SEPSIS

Person with possible infection

- Think ***'could this be sepsis?'*** if they present with signs or symptoms that indicate infection, even if they do not have a high temperature.
- Be aware that people with sepsis may have non-specific, non-localising presentations (for example, feeling very unwell.
- Pay particular attention to concerns expressed by the person and family/carer.
- Take particular care in the assessment of people who might have sepsis who are unable, or their parent/carer is unable, to give a good history (for example, young children, people with English as a second language, people with communication problems)

ASSESSMENT

Assess people with suspected infection to identify:

- likely source of infection
- risk factors **(see righthand box)**
- Indicators of clinical of concern such as abnormalities of behaviour, circulation or respiration.

Healthcare professionals performing a remote assessment of a person with suspected infection should seek to identify factors that increase risk of sepsis or indicators of clinical concern.

People more vulnerable to sepsis

- the very young (under 1 year) and older people (over 75 years) or very frail people
- recent trauma or surgery or invasive procedure (within the last 6 weeks)
- Impaired immunity due to illness or drugs (for example, people receiving steroids, chemotherapy or immunosuppressants)
- Indwelling lines / catheters / intravenous drug misusers, any breach of skin integrity (for example, any cuts, burns, blisters or skin infections).

If at risk of neutropenic sepsis - refer to secondary care

Additional risk factors for women who are pregnant or who have been pregnant, given birth, had a termination or miscarriage within the past 6 weeks -gestational diabetes, diabetes or other co-morbidities; needed invasive procedure such as caesarean section, forceps delivery, removal of retained products of conception, prolonged rupture of membranes, close contract with someone with group A streptococcal infection, have continued vaginal bleeding or an offensive vaginal discharge).

Consider RISK FACTORS & Indicators of CLINICAL CONCERN

Structured Assessment:

Observations &
Early Warning Scores

SUSPECT SEPSIS

If sepsis is suspected, use a structured set of observations to assess people in a face-to-face setting.
Consider using early warning scores in hospital settings.
Parental or carer concern is important and should be acknowledged.

NICE High Risk ≈ Red Flag Sepsis

NICE Care Bundle

- **IV Antibiotics**
  - Pre-alert secondary care if high risk / red flag sepsis
  - Mechanism for delivery pre-hospital if >1h transfer
  - BenPen pre-hospital for suspected meningococcal disease
- **IV Fluids** - guided by need / lactate
- **Consider Oxygen** - target SaO_2 94-98% (88-92% if risk of T2RF)
- **Blood cultures**
- **Lactate**
- **Monitoring** (**urine output**)
- **Source Identification & Control**
- **Escalation criteria**

Sepsis Six

Oxford AHSN Regional pathway

Stratify risk of severe illness and death from sepsis using the risk criteria in the stratification tool for adults, children and young people aged 12 years and over

High risk criteria

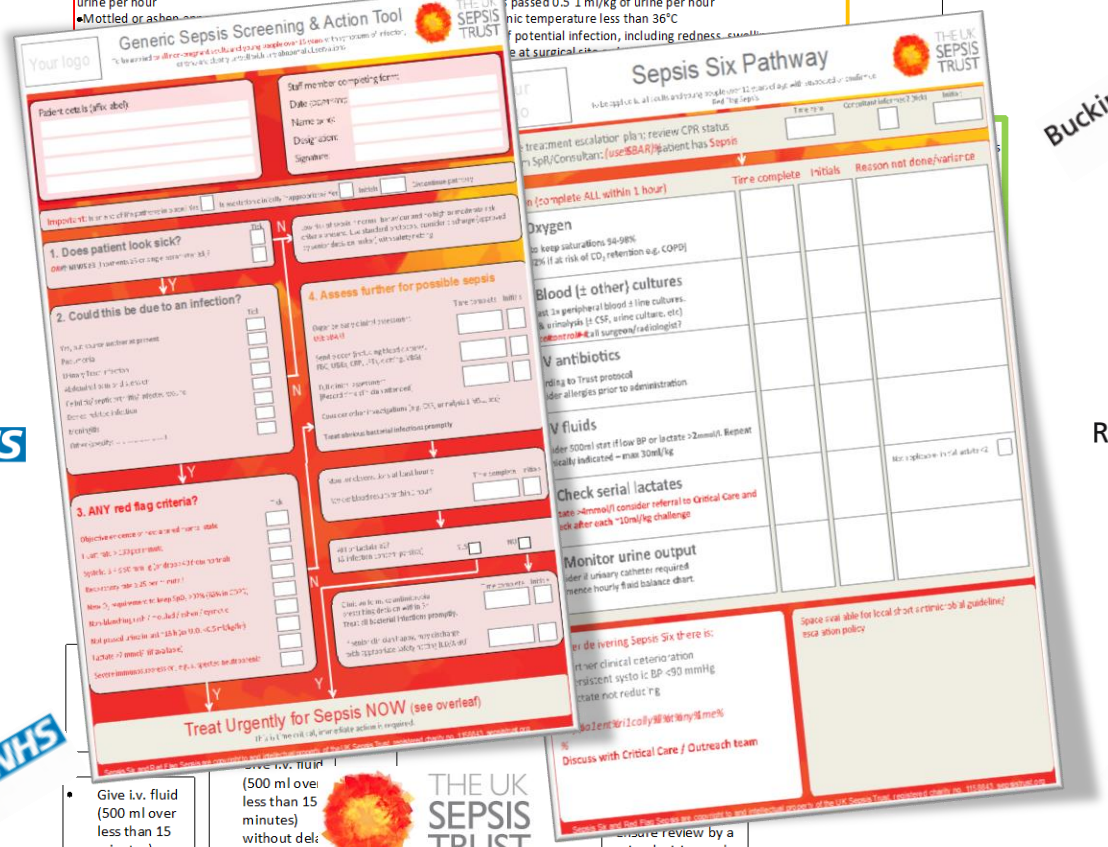
- Objective evidence of new altered mental state
- Respiratory rate: 25 breaths per minute or more OR new need for oxygen (more than 40% FiO2) to maintain saturation more than 92% (or more than 88% in known chronic obstructive pulmonary disease)
- Heart rate: 130 beats per minute or above
- Systolic blood pressure 90 mmHg or less or systolic blood pressure more than 40 mmHg below normal
- Not passed urine in previous 18 hours, or for catheterised patients passed less than 0.5 ml/kg of urine per hour
- Mottled or ashen

(Moderate to high risk criteria

- History from patient, friend or relative of new onset of altered behaviour or mental state
- History of acute deterioration of functional ability
- Impaired immune system (illness or drugs including oral steroids)
- Trauma, surgery or invasive procedures in the last 6 weeks
- Respiratory rate: 21-24 breaths per minute
- Heart rate: 91 130 bets per minute (for pregnant women 100 130 beats per minute) OR new onset arrhythmia
- Systolic blood pressure 91-100 mmHg
- Not passed urine in the past 12-18 hours, or for catheterised passed 0.5 1 ml/kg of urine per hour
- nic temperature less than 36°C
- f potential infection, including redness, swelli
- e at surgical site

Low risk criteria

Suspected sepsis, but:
- Normal behaviour
- No high risk or moderate to high risk criteria met



- Give i.v. fluid (500 ml over less than 15 minutes) without delay
- Refer to critical care

Give i.v. fluid (500 ml over less than 15 minutes) without dela

THE UK SEPSIS TRUST

Ensure review by a senior decision maker within 3 hours for consideration of antibiotics.

Carry out observations, at least every 30 minutes or continuous monitoring in ED.
Consultant to attend if not already present if patient does not improve

*** See Acute kidney injury (NICE guideline CG169)**

Oxford University Hospitals NHS Trust

Buckinghamshire Healthcare NHS Trust

Heatherwood and Wexham Park Hospitals NHS Foundation Trust

Royal Berkshire NHS Foundation Trust

Milton Keynes University Hospital NHS Foundation Trust

Great Western Hospitals NHS Foundation Trust

Oxford AHSN Version 1

Early Warning Score

Simplified Amber criteria

Your logo

Generic Sepsis Screening & Action Tool

To be applied to all non-pregnant adults and young people over 16 years with symptoms of infection, or who are clearly unwell with any abnormal observations

THE UK SEPSIS TRUST

Patient details (affix label):

Staff member completing form:
Date (DD/MM/YY):
Name (print):
Designation:
Signature:

Important: *Is an end of life pathway in place? Yes* ☐ *Is escalation clinically inappropriate? Yes* ☐ *Initials* ☐ *Discontinue pathway*

1. Does patient look sick? Tick
OR ↑**NEWS ≥3** [Inpatients ≥5 or single parameter ≥3] ☐

N → Low risk of sepsis if normal behaviour and no high or moderate risk criteria present. Use standard protocols, consider discharge (approved by senior decision maker) with safety netting

Y ↓

2. Could this be due to an infection? Tick

- Yes, but source unclear at present ☐
- Pneumonia ☐
- Urinary Tract Infection ☐
- Abdominal pain or distension ☐
- Cellulitis/ septic arthritis/ infected wound ☐
- Device-related infection ☐
- Meningitis ☐
- Other (specify: ……..) ☐

N ↓

4. Any amber flags (other sepsis concern)? Tick

- Other risk factor(s) for severe infection[1] ☐
- Acute deterioration in functional/mental state ☐
- Systolic BP 91-100 mmHg or new arrhythmia ☐
- Hypothermia ☐
- Patient, relative or health professional remains worried ☐

[1] E.g. recent surgery; immunosuppression; oral steroids; rapidly spreading cellulitis or possible necrotizing fasciitis (Is pain out of proportion to clinical signs of cellulitis?).

[N.B. severe immunosuppression incl. neutropaenia = 'red flag']

N ↑ (from 4 to 2)

Y ↓

3. ANY red flag criteria? Tick

- Objective evidence of **new altered mental state** ☐
- **Heart rate > 130 per minute** ☐
- **Systolic B.P ≤ 90 mmHg** (or drop >40 from normal) ☐
- **Respiratory rate ≥ 25 per minute** ☐
- **New O_2 requirement** to keep SaO_2 ≥92% (88% in COPD) ☐
- **Non-blanching rash / mottled / ashen / cyanotic** ☐
- **Not passed urine in last ~18 h** (or U.O. <0.5 ml/kg/hr) ☐
- **Lactate ≥2 mmol/l** (if available) ☐
- **Severe immunosuppression**, e.g. suspected neutropaenia ☐

Y ↓

Send bloods *(including blood cultures, FBC, U&Es, CRP, LFTs, clotting, VBG)* — Time complete ☐ Initials ☐

Organize early clinical assessment *USE SBAR! Review results within 1 hour* — Time complete ☐ Initials ☐

Time clinician attended ☐

AKI or Lactate ≥2? *(& infection concern persists)* YES ☐ NO ☐

N ↓

Clinician to make antimicrobial prescribing decision within 3h. ***Treat all bacterial infections promptly.*** — Time complete ☐ Initials ☐

If senior clinician happy, may discharge with appropriate safety netting [ED/AMU] ☐

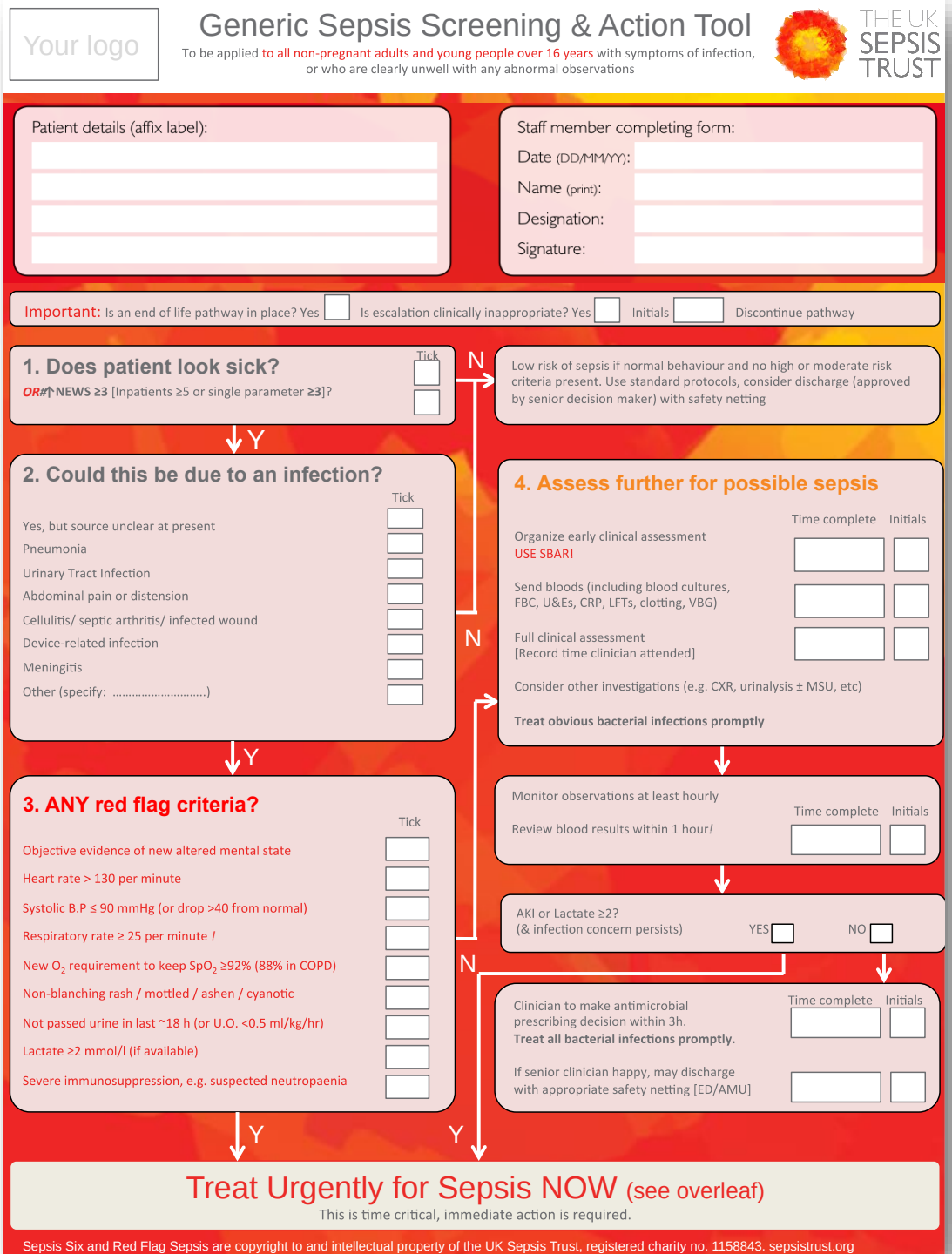
Y ↓

Treat Urgently for Sepsis NOW (see overleaf)

This is time critical, immediate action is required.

Oxford AHSN Version 2

Early Warning Score



Your logo

Generic Sepsis Screening & Action Tool

To be applied to all non-pregnant adults and young people over 16 years with symptoms of infection, or who are clearly unwell with any abnormal observations

THE UK SEPSIS TRUST

Patient details (affix label):

Staff member completing form:
Date (DD/MM/YY):
Name (print):
Designation:
Signature:

Important: Is an end of life pathway in place? Yes ☐ Is escalation clinically inappropriate? Yes ☐ Initials ☐ Discontinue pathway

1. Does patient look sick? Tick
OR# NEWS ≥3 [Inpatients ≥5 or single parameter ≥3]?

N → Low risk of sepsis if normal behaviour and no high or moderate risk criteria present. Use standard protocols, consider discharge (approved by senior decision maker) with safety netting

Y

2. Could this be due to an infection? Tick

- Yes, but source unclear at present
- Pneumonia
- Urinary Tract Infection
- Abdominal pain or distension
- Cellulitis/ septic arthritis/ infected wound
- Device-related infection
- Meningitis
- Other (specify: .....)

N

Y

3. ANY red flag criteria? Tick

- Objective evidence of new altered mental state
- Heart rate > 130 per minute
- Systolic B.P ≤ 90 mmHg (or drop >40 from normal)
- Respiratory rate ≥ 25 per minute *!*
- New O_2 requirement to keep SpO_2 ≥92% (88% in COPD)
- Non-blanching rash / mottled / ashen / cyanotic
- Not passed urine in last ~18 h (or U.O. <0.5 ml/kg/hr)
- Lactate ≥2 mmol/l (if available)
- Severe immunosuppression, e.g. suspected neutropaenia

Y

4. Assess further for possible sepsis

	Time complete	Initials
Organize early clinical assessment USE SBAR!		
Send bloods (including blood cultures, FBC, U&Es, CRP, LFTs, clotting, VBG)		
Full clinical assessment [Record time clinician attended]		

Consider other investigations (e.g. CXR, urinalysis ± MSU, etc)

Treat obvious bacterial infections promptly

Monitor observations at least hourly

	Time complete	Initials
Review blood results within 1 hour*!*		

AKI or Lactate ≥2?
(& infection concern persists) YES ☐ NO ☐

N

Y

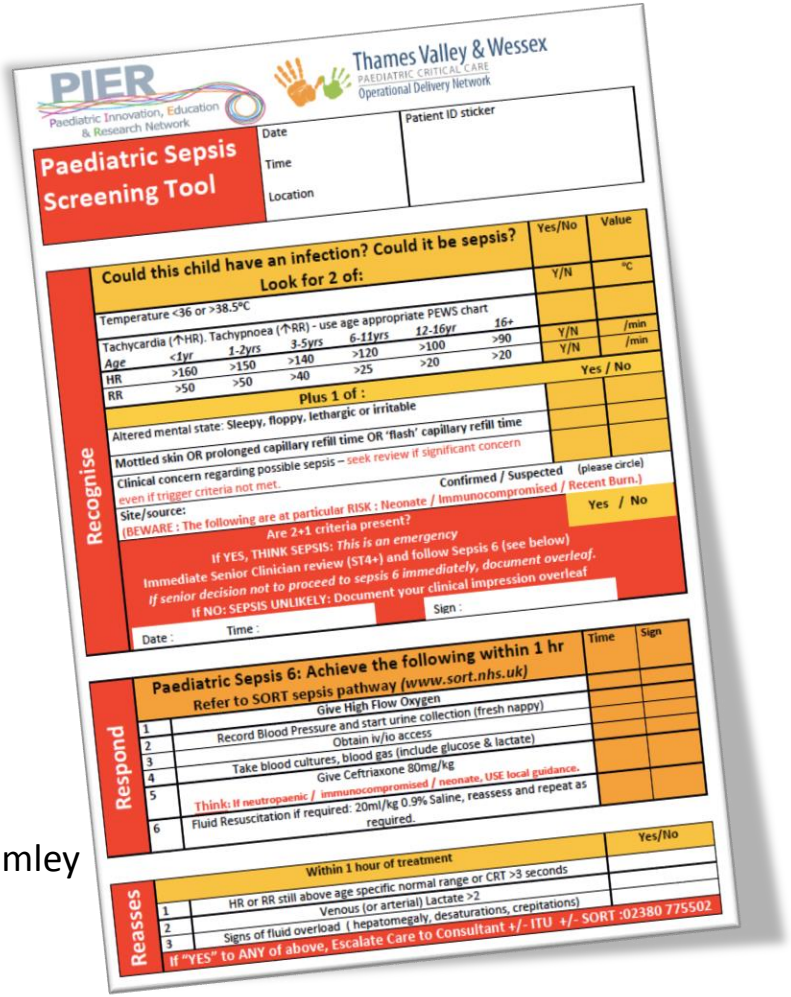
	Time complete	Initials
Clinician to make antimicrobial prescribing decision within 3h. **Treat all bacterial infections promptly.**		
If senior clinician happy, may discharge with appropriate safety netting [ED/AMU]		

Treat Urgently for Sepsis NOW (see overleaf)
This is time critical, immediate action is required.

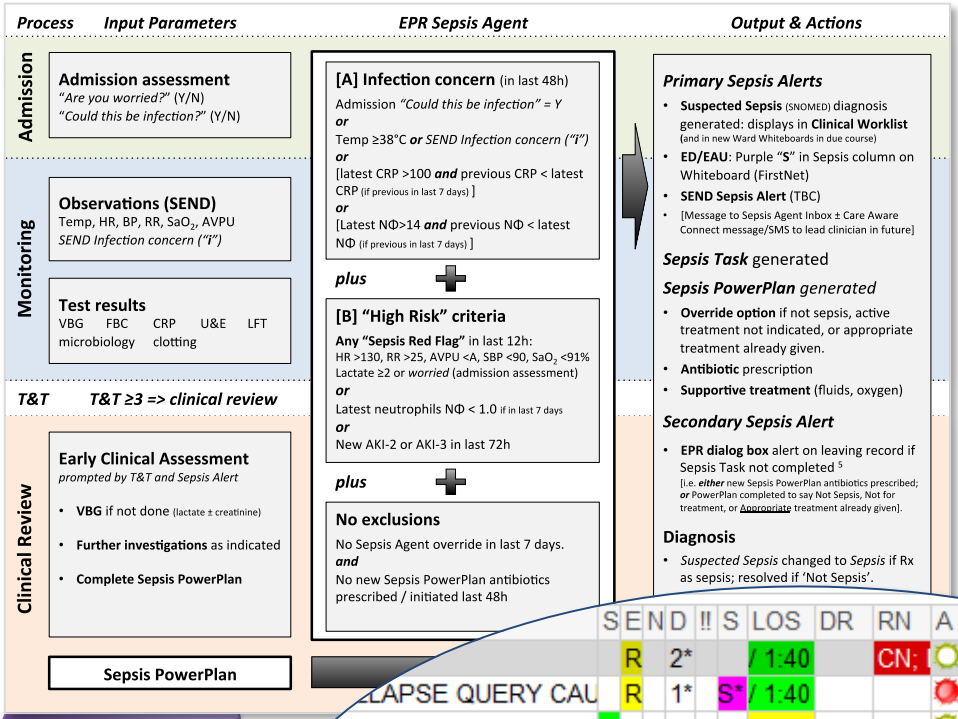
No amber criteria: assess all patients

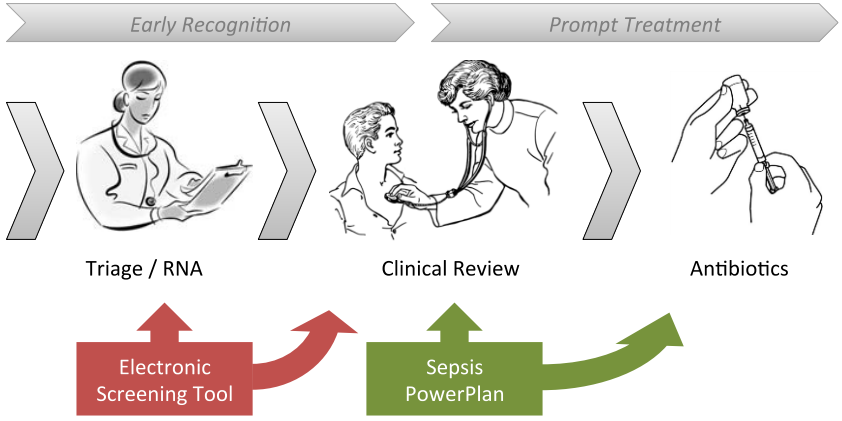
Paediatric screening tool

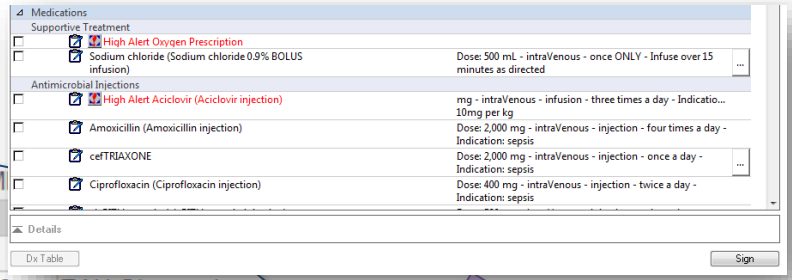
- **Regional Collaboration**
  - Paediatric Critical Care Network (PCCN)
  - Children's Network
  - Oxford & Wessex AHSNs
- **Validated** against NICE guideline
  - Audit of 227 notes (PCCN)
  - Equally sensitive, more specific
- **Adopted by Oxford AHSN Sepsis group**
- **Implemented across Thames Valley**
  - including Oxford, Buckinghamshire, Milton Keynes, Frimley Health [Swindon agreed in principle]

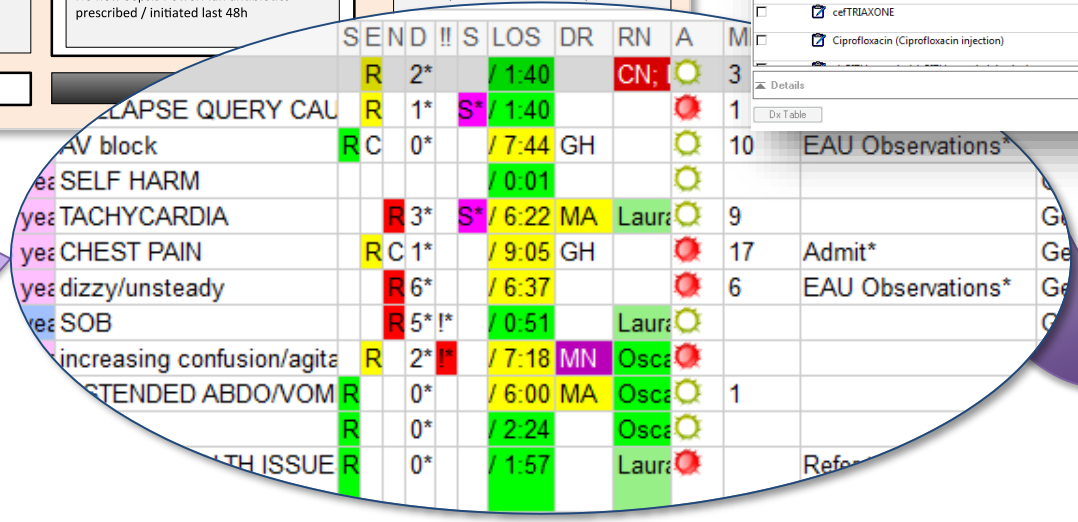


Technological innovation (OUH)









THINK SEPSIS

Person with possible infection

- Think ***'could this be sepsis?'*** if they present with signs or symptoms that indicate infection, even if they do not have a high temperature.
- Be aware that people with sepsis may have non-specific, non-localising presentations (for example, feeling very unwell.
- Pay particular attention to concerns expressed by the person and family/carer.
- Take particular care in the assessment of people who might have sepsis who are unable, or their parent/carer is unable, to give a good history (for example, young children, people with English as a second language, people with communication problems)

ASSESSMENT

Assess people with suspected infection to identify:

- likely source of infection
- risk factors **(see righthand box)**
- Indicators of clinical of concern such as abnormalities of behaviour, circulation or respiration.

Healthcare professionals performing a remote assessment of a person with suspected infection should seek to identify factors that increase risk of sepsis or indicators of clinical concern.

People more vulnerable to sepsis

- the very young (under 1 year) and older people (over 75 years) or very frail people
- recent trauma or surgery or invasive procedure (within the last 6 weeks)
- Impaired immunity due to illness or drugs (for example, people receiving steroids, chemotherapy or immunosuppressants)
- Indwelling lines / catheters / intravenous drug misusers, any breach of skin integrity (for example, any cuts, burns, blisters or skin infections).

If at risk of neutropenic sepsis - refer to secondary care

Additional risk factors for women who are pregnant or who have been pregnant, given birth, had a termination or miscarriage within the past 6 weeks -gestational diabetes, diabetes or other co-morbidities; needed invasive procedure such as caesarean section, forceps delivery, removal of retained products of conception, prolonged rupture of membranes, close contract with someone with group A streptococcal infection, have continued vaginal bleeding or an offensive vaginal discharge).

Consider RISK FACTORS & Indicators of CLINICAL CONCERN

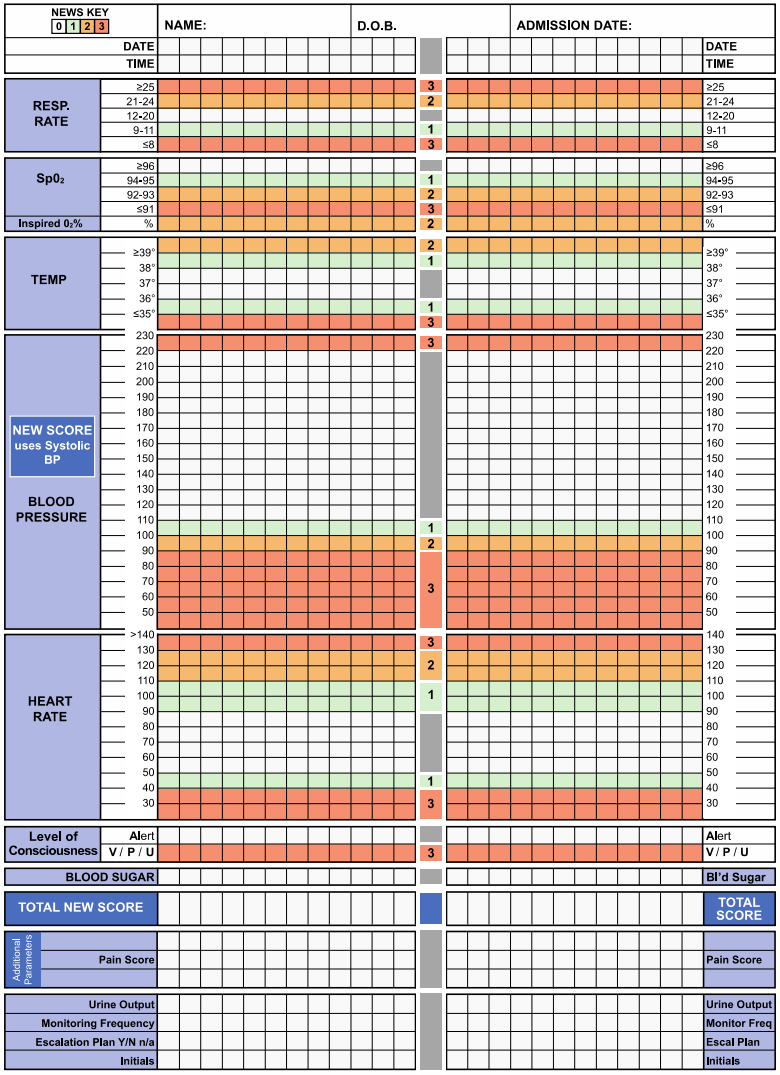
Structured Assessment:

Observations &
Early Warning Scores

SUSPECT SEPSIS

If sepsis is suspected, use a structured set of observations to assess people in a face-to-face setting.
Consider using early warning scores in hospital settings.
Parental or carer concern is important and should be acknowledged.

National Early Warning Score (NEWS)

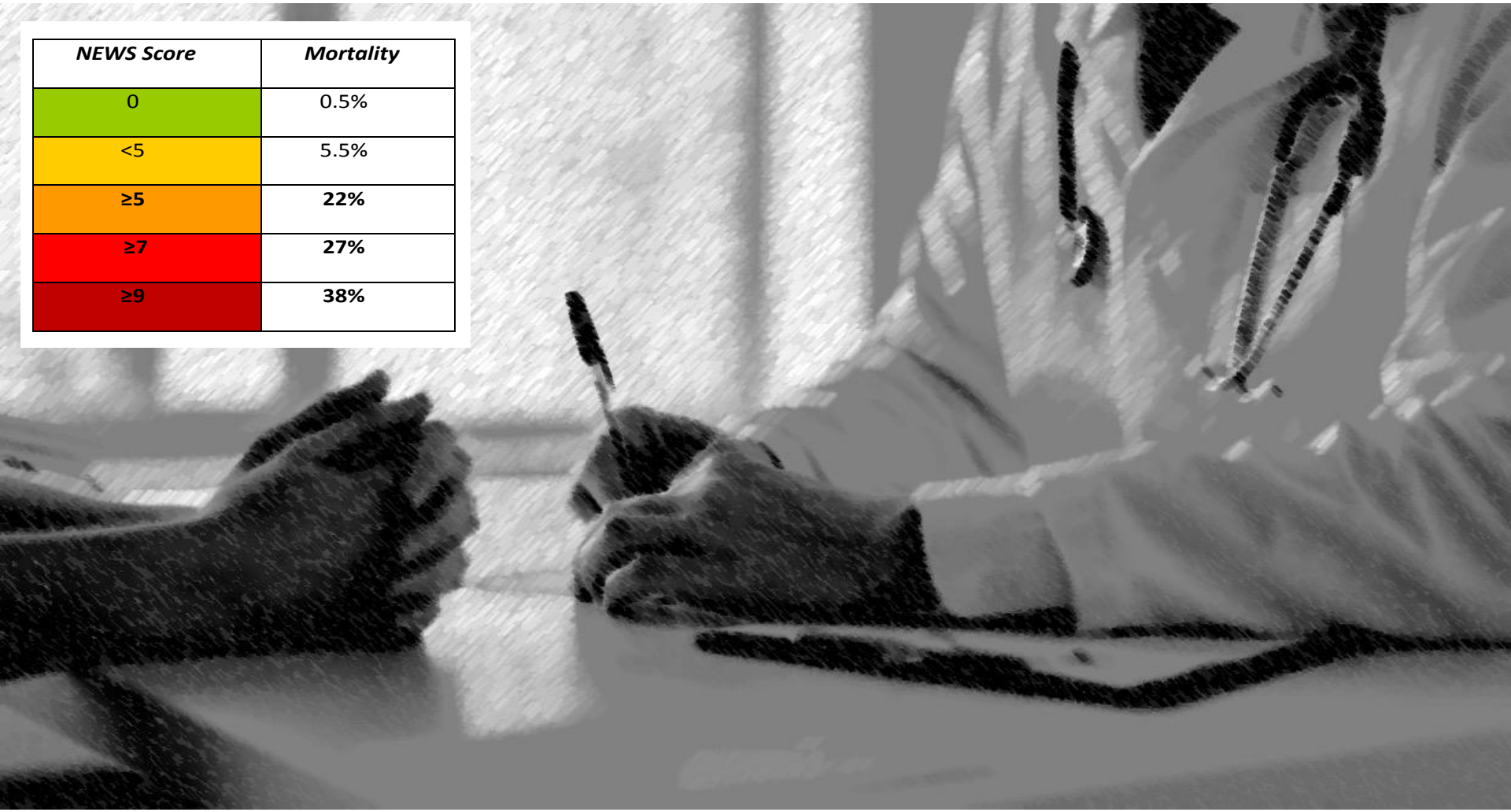


PHYSIOLOGICAL PARAMETERS	3	2	1	0	1	2	3
Respiration Rate	≤8		9 - 11	12 - 20		21 - 24	≥25
Oxygen Saturations	≤91	92 - 93	94 - 95	≥96			
Any Supplemental Oxygen		Yes		No			
Temperature	≤35.0		35.1 - 36.0	36.1 - 38.0	38.1 - 39.0	≥39.1	
Systolic BP	≤90	91 - 100	101 - 110	111 - 219			≥220
Heart Rate	≤40		41 - 50	51 - 90	91 - 110	111 - 130	≥131
Level of Consciousness				A			V, P, or U

NEW scores	Clinical risk
0	Low
Aggregate 1–4	
RED score* (Individual parameter scoring 3)	Medium
Aggregate 5–6	
Aggregate 7 or more	High

National Early Warning Score (NEWS)

NEWS Score	*Mortality*
0	0.5%
<5	5.5%
≥5	**22%**
≥7	**27%**
≥9	**38%**



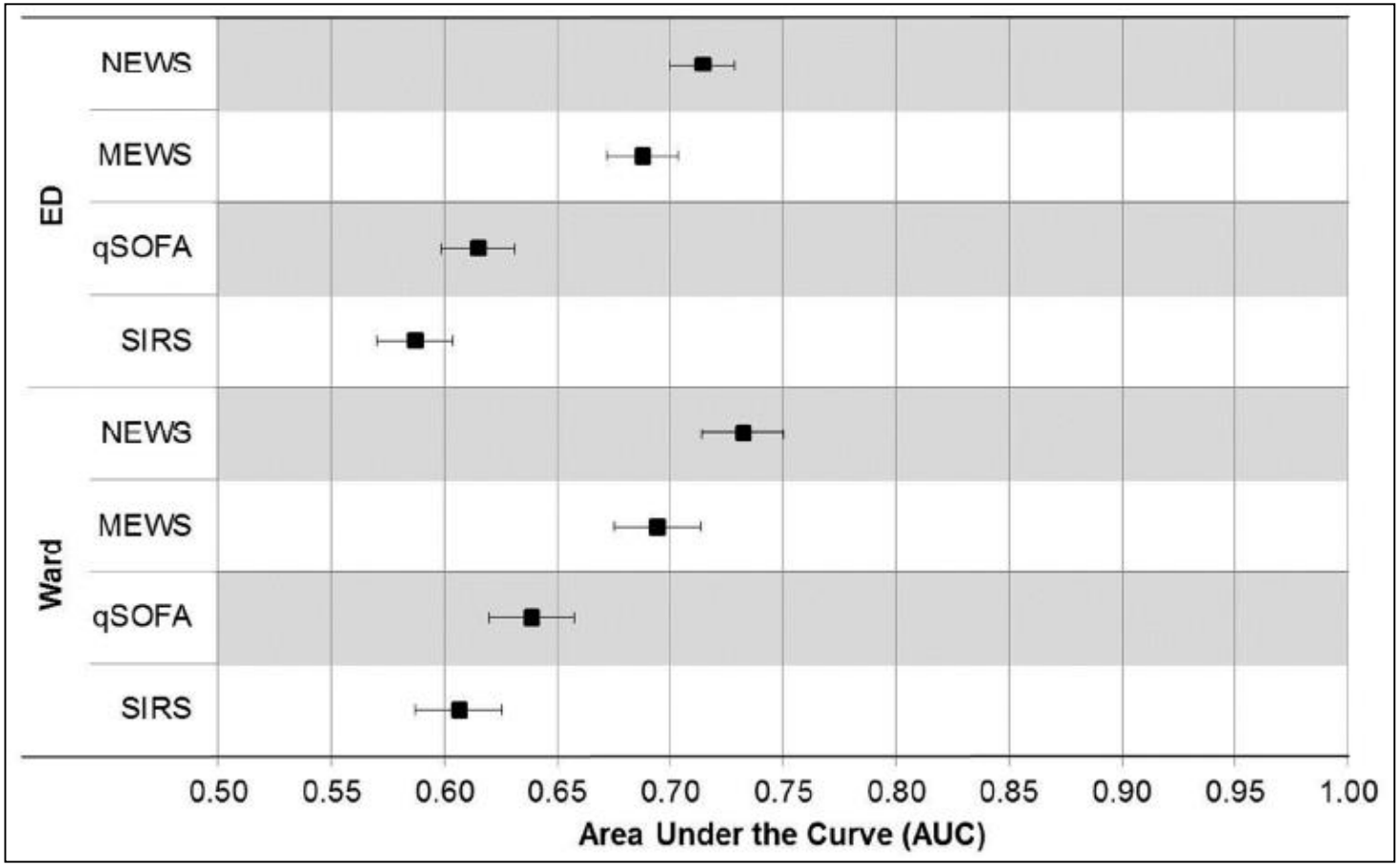
A single admission NEWS score in patients with symptoms of infection predicts mortality

Vital Signs in General Practice

- Vital signs inconsistently recorded
- Safety netting advice not routinely documented
- Currently exploring NEWS implementation in primary care

Audit of 123 patients admitted to hospital and vital signs recorded at last GP visit

NEWS and Sepsis



Churpek et al. AJRCCM 2016

What's new in NEWS2?

New

NHS England and the NEWS

NHS England and NHS Improvement have approved and endorsed use of the NEWS as the recommended early warning scoring system for use in adults across the NHS in England, to standardise the approach to detecting and grading the severity of acute illness. The NEWS has also been endorsed as the recommended early warning system to detect acute clinical illness/deterioration due to sepsis in patients with an infection or at risk of infection.

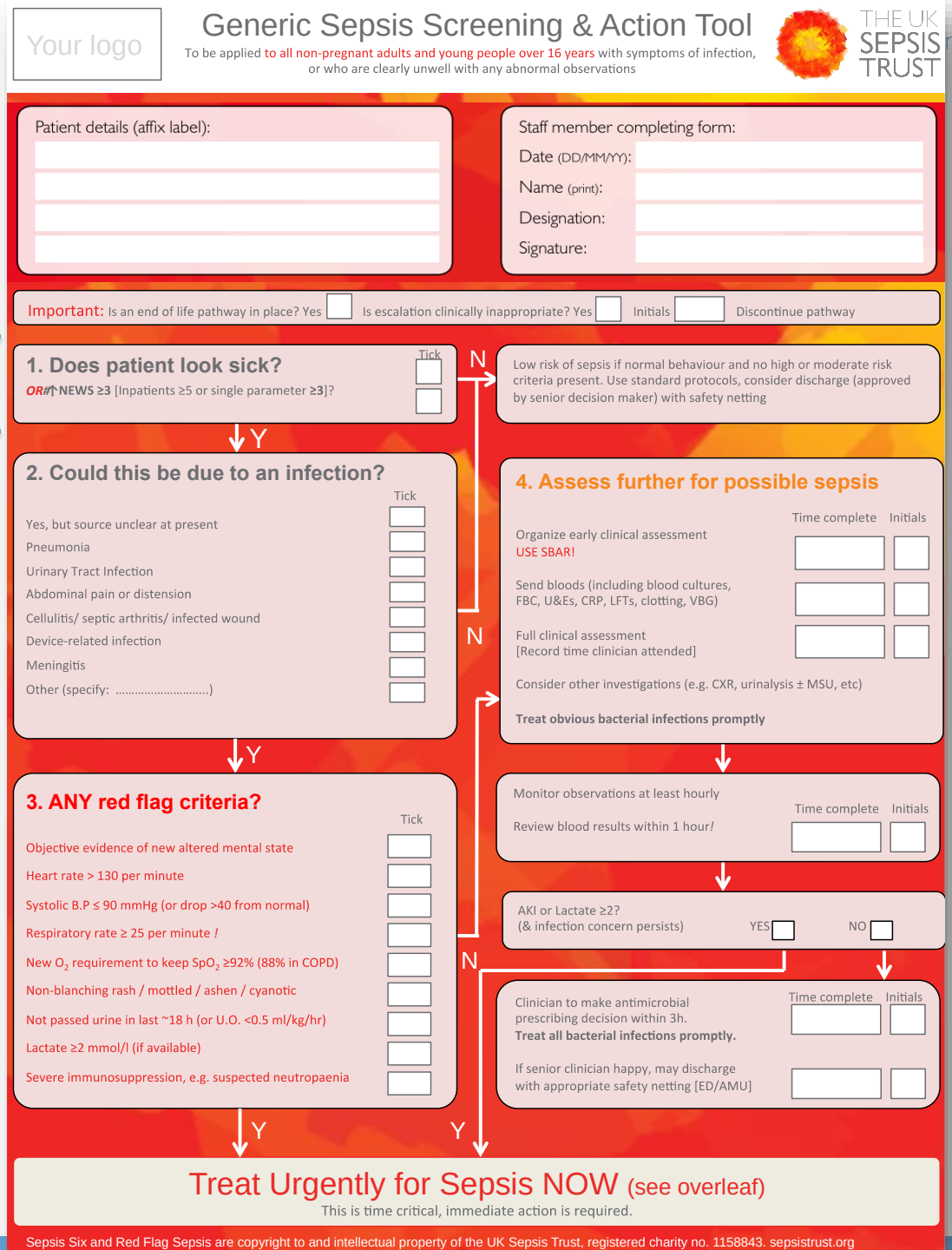
The NEWS and sepsis

22 We recommend that **sepsis** should be considered in any patient with a known infection, signs or symptoms of infection, or in patients at high risk of infection, and a **NEW score of 5 or more – 'think sepsis'.**

23 We recommend that patients with suspected infection and a NEW score of 5 or more require urgent assessment and intervention by a clinical team competent in the management of sepsis and urgent transfer to hospital or transfer to a higher-dependency clinical area within hospitals, for ongoing clinical care.

Oxford AHSN Version 2

Early Warning Score



Your logo

Generic Sepsis Screening & Action Tool

To be applied to all non-pregnant adults and young people over 16 years with symptoms of infection, or who are clearly unwell with any abnormal observations

THE UK SEPSIS TRUST

Patient details (affix label):

Staff member completing form:
Date (DD/MM/YY):
Name (print):
Designation:
Signature:

Important: Is an end of life pathway in place? Yes ☐ Is escalation clinically inappropriate? Yes ☐ Initials ☐ Discontinue pathway

1. Does patient look sick?
OR# ↑ NEWS ≥3 [Inpatients ≥5 or single parameter ≥3]?
Tick ☐ ☐

N → Low risk of sepsis if normal behaviour and no high or moderate risk criteria present. Use standard protocols, consider discharge (approved by senior decision maker) with safety netting

Y ↓

2. Could this be due to an infection?

	Tick
Yes, but source unclear at present	☐
Pneumonia	☐
Urinary Tract Infection	☐
Abdominal pain or distension	☐
Cellulitis/ septic arthritis/ infected wound	☐
Device-related infection	☐
Meningitis	☐
Other (specify: .....)	☐

N →

Y ↓

3. ANY red flag criteria?

	Tick
Objective evidence of new altered mental state	☐
Heart rate > 130 per minute	☐
Systolic B.P ≤ 90 mmHg (or drop >40 from normal)	☐
Respiratory rate ≥ 25 per minute !	☐
New O_2 requirement to keep SpO_2 ≥92% (88% in COPD)	☐
Non-blanching rash / mottled / ashen / cyanotic	☐
Not passed urine in last ~18 h (or U.O. <0.5 ml/kg/hr)	☐
Lactate ≥2 mmol/l (if available)	☐
Severe immunosuppression, e.g. suspected neutropaenia	☐

Y ↓

4. Assess further for possible sepsis

	Time complete	Initials
Organize early clinical assessment USE SBAR!	☐	☐
Send bloods (including blood cultures, FBC, U&Es, CRP, LFTs, clotting, VBG)	☐	☐
Full clinical assessment [Record time clinician attended]	☐	☐

Consider other investigations (e.g. CXR, urinalysis ± MSU, etc)

Treat obvious bacterial infections promptly

↓

Monitor observations at least hourly

	Time complete	Initials
Review blood results within 1 hour!	☐	☐

↓

AKI or Lactate ≥2?
(& infection concern persists) YES ☐ NO ☐

N → Y ↓

	Time complete	Initials
Clinician to make antimicrobial prescribing decision within 3h. **Treat all bacterial infections promptly.**	☐	☐
If senior clinician happy, may discharge with appropriate safety netting [ED/AMU]	☐	☐

Y ↓

Treat Urgently for Sepsis NOW (see overleaf)
This is time critical, immediate action is required.

No amber criteria: assess all patients


Ambulance Service
Hospitals
NEWS2
Primary Care
Care Sector

Measurement & Publication

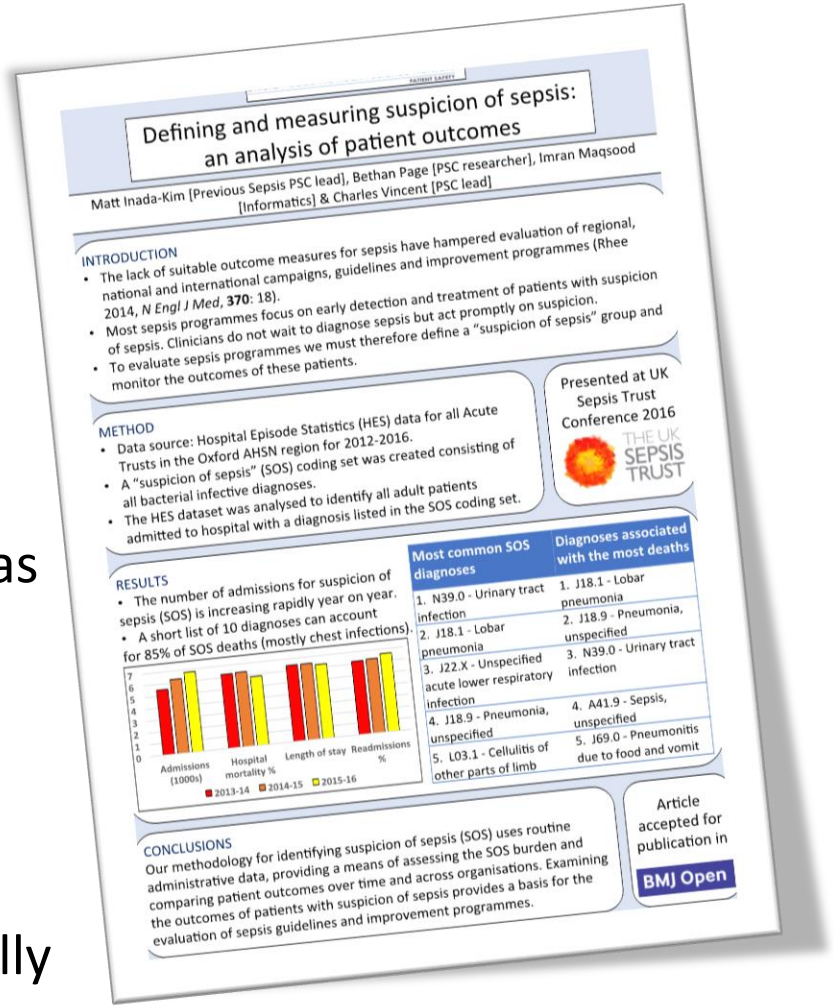
Surveillance challenges

- HES sepsis codes insensitive
- QI initiatives → ascertainment bias
- Need improved case definition

HES Bacterial infection ('SOS') codes

- More sensitive, less ascertainment bias
- Temporal and geographic trends

- Inada-Kim *et al*. **BMJ Open** 2017
- Presented at *Sepsis Unplugged* 2016
- NHSE collaboration to extend nationally



Defining and measuring suspicion of sepsis: an analysis of patient outcomes

Matt Inada-Kim [Previous Sepsis PSC lead], Bethan Page [PSC researcher], Imran Maqsood [Informatics] & Charles Vincent [PSC lead]

INTRODUCTION

- The lack of suitable outcome measures for sepsis have hampered evaluation of regional, national and international campaigns, guidelines and improvement programmes (Rhee 2014, *N Engl J Med*, **370**: 18).
- Most sepsis programmes focus on early detection and treatment of patients with suspicion of sepsis. Clinicians do not wait to diagnose sepsis but act promptly on suspicion.
- To evaluate sepsis programmes we must therefore define a "suspicion of sepsis" group and monitor the outcomes of these patients.

METHOD

- Data source: Hospital Episode Statistics (HES) data for all Acute Trusts in the Oxford AHSN region for 2012-2016.
- A "suspicion of sepsis" (SOS) coding set was created consisting of all bacterial infective diagnoses.
- The HES dataset was analysed to identify all adult patients admitted to hospital with a diagnosis listed in the SOS coding set.

Presented at UK Sepsis Trust Conference 2016

THE UK SEPSIS TRUST

RESULTS

- The number of admissions for suspicion of sepsis (SOS) is increasing rapidly year on year.
- A short list of 10 diagnoses can account for 85% of SOS deaths (mostly chest infections).

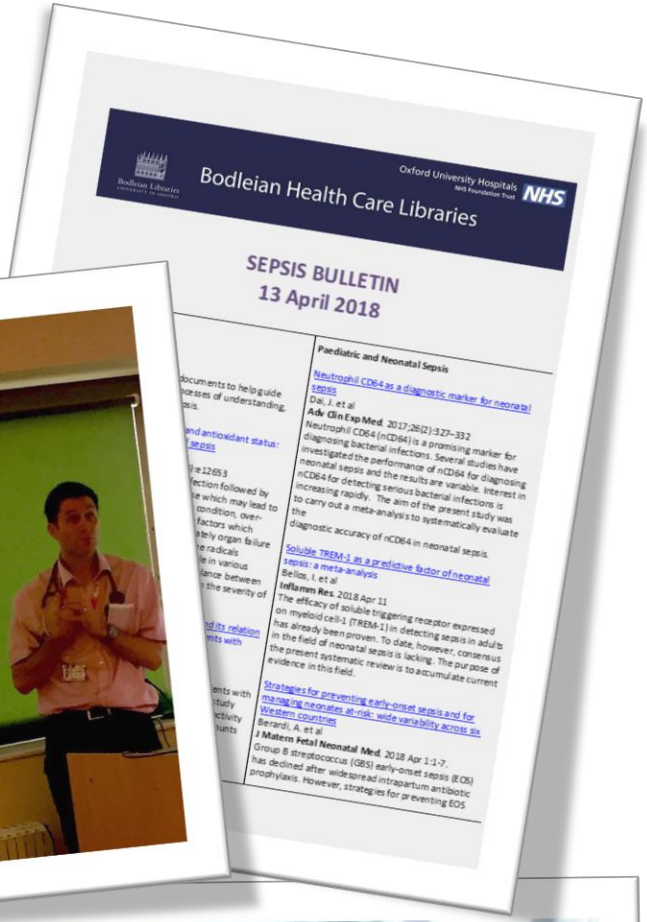
Most common SOS diagnoses	Diagnoses associated with the most deaths
1. N39.0 - Urinary tract infection	1. J18.1 - Lobar pneumonia
2. J18.1 - Lobar pneumonia	2. J18.9 - Pneumonia, unspecified
3. J22.X - Unspecified acute lower respiratory infection	3. N39.0 - Urinary tract infection
4. J18.9 - Pneumonia, unspecified	4. A41.9 - Sepsis, unspecified
5. L03.1 - Cellulitis of other parts of limb	5. J69.0 - Pneumonitis due to food and vomit

CONCLUSIONS

Our methodology for identifying suspicion of sepsis (SOS) uses routine administrative data, providing a means of assessing the SOS burden and comparing patient outcomes over time and across organisations. Examining the outcomes of patients with suspicion of sepsis provides a basis for the evaluation of sepsis guidelines and improvement programmes.

Article accepted for publication in BMJ Open

Education


Bodleian Health Care Libraries

Oxford University Hospitals NHS Foundation Trust

SEPSIS BULLETIN
13 April 2018

documents to help guide
ocesses of understanding.
psis.

nd antioxidant status:
/ sepsis

e 12653
fection followed by
e which may lead to
condition, over-
factors which
tely organ failure
e radicals
e in various
lance between
the severity of

d its relation
nts with

nts with
study
ctivity
unts

Paediatric and Neonatal Sepsis

Neutrophil CD64 as a diagnostic marker for neonatal sepsis
Dai, J. et al
Adv Clin Exp Med. 2017;26(2):327–332
Neutrophil CD64 (nCD64) is a promising marker for diagnosing bacterial infections. Several studies have investigated the performance of nCD64 for diagnosing neonatal sepsis and the results are variable. Interest in nCD64 for detecting serious bacterial infections is increasing rapidly. The aim of the present study was to carry out a meta-analysis to systematically evaluate the diagnostic accuracy of nCD64 in neonatal sepsis.

Soluble TREM-1 as a predictive factor of neonatal sepsis: a meta-analysis
Bellos, I. et al
Inflamm Res. 2018 Apr 11
The efficacy of soluble triggering receptor expressed on myeloid cell-1 (TREM-1) in detecting sepsis in adults has already been proven. To date, however, consensus in the field of neonatal sepsis is lacking. The purpose of the present systematic review is to accumulate current evidence in this field.

Strategies for preventing early-onset sepsis and for managing neonates at-risk: wide variability across six Western countries
Berardi, A. et al
J Matern Fetal Neonatal Med. 2018 Apr 1:1-7.
Group B streptococcus (GBS) early-onset sepsis (EOS) has declined after widespread intrapartum antibiotic prophylaxis. However, strategies for preventing EOS

Sepsis *Working Together* event

Oxford, 19 Sep 2016

- **110 delegates**
- Acute Trusts (6)
- Community Trusts (2)
- Clinical Commissioning Groups (2)
- South Central Ambulance Service
- Private Hospitals (3)
- Care home providers
- NHS England
- Oxford AHSN
- Oxford University

Patient information

What if I go to the critical care unit?

Critical Care is where the most ill patients in a hospital are treated and nursed.

In Critical Care:

You can be carefully watched and monitored, including checking your pulse; blood pressure; breathing; oxygen levels; how much liquid you take in and how much you urinate (how much water you pass).

These checks are all very important because staff can quickly change your treatment as needed.

Staff can give you treatment including support for your major organs, like your heart, kidneys and lungs.

There are highly trained doctors, nurses and physiotherapists who look after you, and support your relatives by explaining what is happening.

Nurses look after fewer patients, so there may be one nurse looking after only one or two patients.

What about when I go home?

You may be given a rehabilitation plan by your physiotherapist to help you get strong again and a report of your hospital stay will be sent to your GP. Recovering from sepsis can take time, and you may have reduced strength.

You will be very tired, and will need to sleep and rest a lot. You may have been seriously ill and your body and mind need time to get better

You may be very weak, may have lost a lot of weight and may find it difficult to walk around. You may also find it tiring talking to people. Begin by building up your activity slowly and rest when you are tired

Your skin may be dry, itchy and peel. It may help to put moisturiser on your skin. Your nails may also break easily You may notice changes to your hair and some may begin to fall out some weeks after your illness. It is unlikely it will all fall out, it usually just gets very thin and then starts to grow again

It can help to have special nutritional drinks, like Fortisip® or Build up® to help you put on weight again. You can get these on prescription by asking your GP or you can buy them from a chemist or supermarket

You might find it difficult to eat again. Build up slowly by having small meals and healthy snacks when you feel like it.

It can feel very frustrating once you are home, because all the things you could do easily before can suddenly feel very difficult or frightening. You have to remember how unwell you may have been and try and see that you have made progress, even if it doesn't feel like it sometimes.

Sepsis can be a very serious condition. You and your relatives may have gone through an extremely challenging time throughout this period. But this illness is a very well-known condition for which we have well-established treatments and interventions. We all work extremely hard to get our patients over this condition and our treatment aims are to get you back into the best physical condition that you can be.

(Information taken from NHS choices website and UK Sepsis Trust: A Guide for Patients & Relatives 2012) First Publication 06/2017, next review 05/2019

Great Western Hospitals NHS
NHS Foundation Trust

What is Sepsis?

Just ASK*

*Acute Sepsis and Kidney Injury Team

Sepsis is a life threatening condition, but early recognition can greatly improve chances of survival. If you have any concerns about sepsis, ask the doctors or nurses looking after you.

Our Values
Service Teamwork Ambition Respect

Some Challenges

- **Common language**
  - Sepsis = bad infection
  - Deterioration (NEWS)

Some Challenges

- **Common language**
  - Sepsis = bad infection
  - Deterioration (NEWS)
- **Competing clinical priorities**

Some Challenges

- **Common language**
  - Sepsis = bad infection
  - Deterioration (NEWS)
- **Competing clinical priorities**
- **Antibiotic resistance**
  - Targeting antibiotics appropriately
  - Antimicrobial Stewardship

It's all about patients

What can we learn?

What can we improve?

What might we do together?