SEPSIS POLICY FOR ADULTS
Version 1.0

Purpose:	To outline the requirements for treatment of adult patients with suspected or confirmed sepsis • To improve recognition of sepsis in adults • To improve compliance with the Sepsis 6 recommendations • To deliver timely resuscitation interventions and appropriate escalation
For use by:	All clinical staff
This document is compliant with/supports compliance with:	*The UK Sepsis Trust "Sepsis 6"* *Health Service Ombudsman Time to Act Report: Severe Sepsis: Rapid diagnosis and treatment saves lives September 2013* *Department of Health - Patient Safety Alert Stage Two: Resources – Resources to support the prompt recognition of sepsis and the rapid initiation of treatment 2nd September 2014* *Surviving Sepsis Campaign 2010 International Guidelines for the Management of Severe Sepsis and Septic Shock 2012* *The Royal College of Emergency Medicine Severe Sepsis & Septic Shock: Report of the Clinical Audit 2013-14*
This document supersedes:	*New policy*
Approved by:	Initial approval by: Emergency Medicine Clinical Delivery Group Antimicrobial Stewardship Group Division 2 Governance Board Approval by: Patient Safety & Clinical Effectiveness Group
Approval date:	*14th August 2015*
Notified to:	Healthcare Governance Committee
Date Notified:	*2nd November 2015*
Implementation date:	*9th September 2015*
Review date:	*9th September 2018*

In case of queries contact Responsible Officers	*Nichola Benmore, Claire Gray, Critical Care Outreach Team* *Bleep 732/Ext 6252* *Kate Turner, Consultant Anaesthetist, Critical Care* *Ext 1800*
Directorate/ Department:	*Division 2 Surgery* *Critical Care Outreach Team and Critical Care Unit*
Archive date i.e. date guideline no longer in force	*01/05/2017*
Date document to be destroyed i.e. 10 years after archive date	*01/05/2017*

Version and Document Control:

Version Number	Date of Issue	Change Description*	Authors
0.1	May 2015	First draft	Nichola Benmore Kate Turner Claire Gray
1.0	September 2015	Final Document sent to Information Governance	Nichola Benmore

Sharing this Document with Third Parties

As part of the hospital's networking arrangements and sharing best practice, the hospital supports the practice of sharing documents with other organisations. However, where the hospital holds copyright to a document, the document or part thereof so shared must not be used by any third party for its own commercial gain unless the hospital has given its express permission and is entitled to charge a fee.

Release of any strategy, policy, procedure, guideline or other such material must be agreed with the Lead Director or Deputy/Associate Director (for hospital-wide issues) or Directorate/Departmental management Team (for Directorate or Departmental specific issues). Any requests to share this document must be directed in the first instance to Nichola Benmore / Claire Gray, Critical Care Outreach Team.

CONTENTS

SECTION 1 - INTRODUCTION

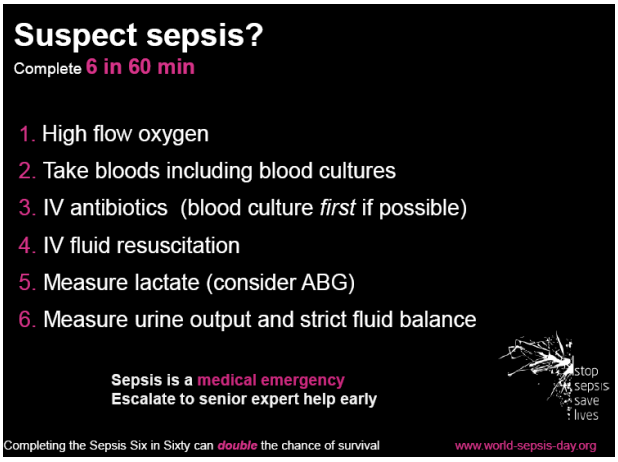
1.1 Policy statement and rationale

It has been estimated that there are 37,000 deaths annually attributed to sepsis in the UK. This figure is likely to be grossly underestimated because;

Recognition is poor as is demonstrated by recent audit (The College of Emergency Medicine 2014) where it suggested that the incidence is probably ten times higher than the current reported rates of sepsis

It's under recognition leads to delayed treatment. It has been shown that early recognition and treatment of sepsis is key to improving outcomes. Initiating basic therapies known as the Sepsis 6 have been shown to improve outcomes. If the six interventions are completed within the first hour following the recognition of sepsis, the associated mortality has been reported to reduce by as much as 50% (Kumar, A et al 2006)

These six interventions are;



Certain patients will be refactory to these initial interventions and will require early referral to Critical Care for advanced organ support. In these cases timely escalation of severely septic patients is of paramount importance.

The Ipswich NHS Hospital Trust is committed to The World Sepsis Declaration and pledges to support the global goals (world-sepsis-day.org 2014). The key target of The World Sepsis Declaration to be achieved by 2020 is to reduce the incidence of sepsis globally.
The five global goals are;

- The declaration will increase the priority given to raising awareness of sepsis
- Ensures sufficient treatment and rehabilitation facilities are available
- Supports the implementation of international sepsis guidelines
- Mobilise resources to ensure sepsis is targeted
- Involve sepsis survivors and bereaved relatives in formulating sepsis care bundles

1.2 Key Principles

- Early recognition is pivotal
- Complete Sepsis 6 Resuscitation Bundle within 60 minutes
- Early escalation to senior expert help

1.3 Background Information

Sepsis is a primary cause of death despite advances in modern medicine and is a significant international concern. As a result there is an international drive to improve recognition and treatment of sepsis.

Sepsis is reported to be the biggest killer after coronary heart disease in the UK (Daniels, 2007) and accounts for 46% of intensive care unit bed days (Padkin et al 2003 p2332).

It is currently under recognised and there is a pronounced recording error in hospitals of patients with sepsis (Parliamentary and Health Service Ombudsman September 2014).

1.4 Definitions

S.I.R.S – Systemic Inflammatory Response Syndrome

Sepsis - the presence of two systemic inflammatory responses PLUS a confirmation or suspicion of an infection, ranging from simple to severe infection associated with organ dysfunction.

Severe Sepsis – sepsis with evidence of organ dysfunction e.g. renal impairment

Septic Shock – sepsis induced hypotension persisting despite adequate fluid resuscitation (Marik P.E et al 2007).

FBC – full blood count

CRP – c-reactive protein

U&E – urea & electrolytes

WCC – white cell count

HR - heart rate

RR – respiratory rate

BM – blood sugar

ABG – arterial blood gas

CCOT – Critical Care Outreach Team

NRM - non re-breathe mask

SpR - registrar

SECTION 2 – DUTIES AND RESPONSIBILITIES

2.1 The designated Responsible Officers for this policy are Kate Turner, Critical Care Consultant in Critical Care, Nikki Benmore, Critical Care Outreach Practitioner and Claire Gray, Practice Educator in Critical Care.

2.2 It is the responsibility of the Patient Safety & Clinical Effectiveness Group to approve this document in accordance with Trust Policy and it is the responsibility of the Patient Safety and Clinical Effectiveness Group to ratify this document in order with Trust Policy.

2.3 It is the responsibility of each Division to ensure through their Governance Framework that this policy is;

- disseminated within their area of responsibility and ensure that staff receive appropriate training as detailed in Section 4
- implemented within their area of responsibility and monitoring of compliance and effectiveness is carried out

2.4 It is the responsibility of the employee to ensure that they understand and comply with the requirements of the policy. This document applies to all staff required to recognise sepsis, initiate treatment and monitor patient vital signs. This includes all members of the multi-disciplinary team who come into contact with patients.

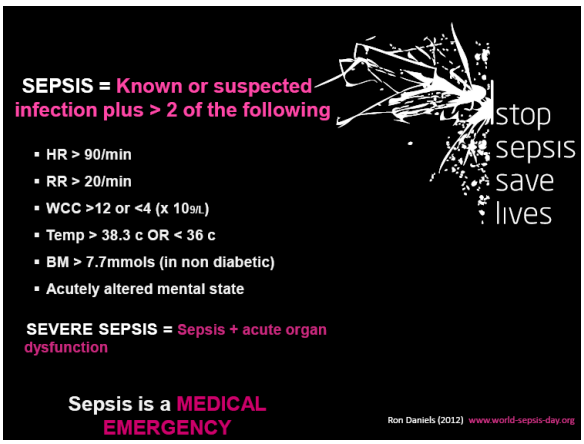
SECTION 3 – THE POLICY

3.1 Key related documents:

- Oxygen Prescription and Administration in Adults Policy
- Arterial Puncture and Blood Gas Sampling in Adults
- Monitoring Vital Signs (MEWS) and Intervention with Acutely Ill Adult
- Antibiotic Guidelines
- Antimicrobial/Antifungal Stewardship Strategy
- Antimicrobial Stop/Review date, Indication and Step down policy
- Cardiac Arrest Policy
- Adult Venepuncture Practice
- Transfer of Adult Patients

3.2 Sepsis Recognition – Use of the Pocket Card

A strategy of sepsis recognition and commitment to on-going training is paramount. Pocket cards (Fig.1) are available on the hospital intranet site and distributed at training days, induction and simulation.

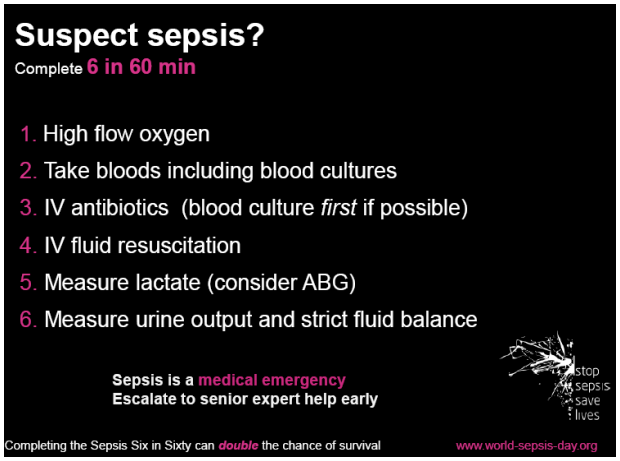


(Fig.1)

All admissions and any deteriorating patient should be screened using the above criteria.

Once Sepsis has been identified the Sepsis 6 Resuscitation bundle should be initiated.

3.3 Sepsis Intervention - Sepsis 6 Resuscitation Bundle



(Fig 2)

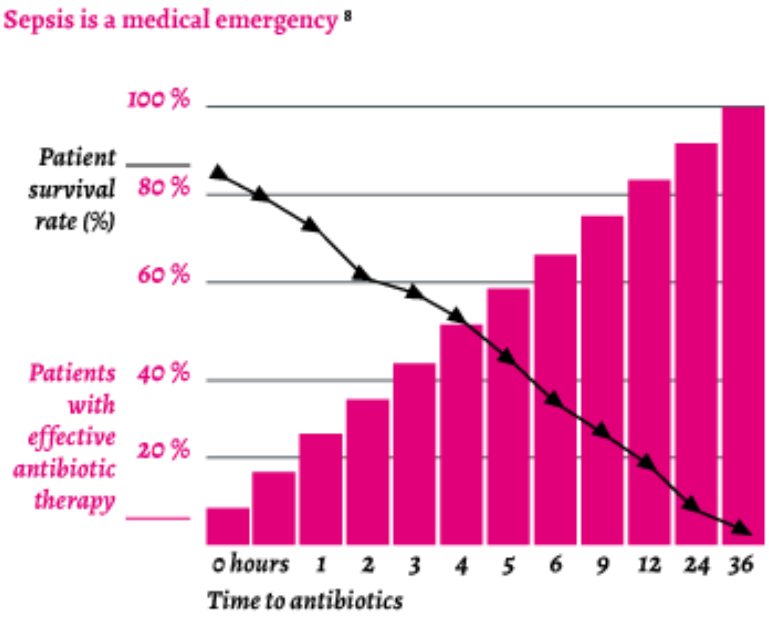
The Surviving Sepsis Campaign created the first sepsis resuscitation bundle (Fig.2) in collaboration with the Institute for Healthcare Improvement. This comprised 6 tasks to be completed within the first 60 minutes following the identification of sepsis (www.sepsistrust.org 2014).

1. **High flow oxygen** is essential once sepsis is identified to avoid hypoxic tissue damage. A non re-breathe mask (NRM) is the first device of choice to maintain a patient's target saturations.
   Avoidance of under-perfused organs at this stage is essential.
   Obtain an ABG to determine gas exchange and alter oxygen requirements accordingly.
   Take caution with COPD patients

2. **Take bloods including blood cultures –** FBC, U&E, and CRP, clotting screen, glucose, blood cultures x 2 - request urgent analysis.
   Consider focus of infection e.g. sputum, urine, wound swabs.

3. **I.V antibiotics –** Refer to Hospital Antibiotic Guidelines and/or Sepsis Treatment Quick Card (cards are currently with Copy Shop and will be distributed to medical/prescribing staff as soon as possible)
   Check for allergies.
   Ensure antibiotics are administered **within 60 minutes**.

Antibiotics must be administered within the hour following identification of sepsis. For each delay in administering antibiotics a rise in mortality of 7.6% can be seen. (Kumar A et al 2006).



Rapid initiation of simple, timely interventions including antimicrobials, intravenous fluids and targeted treatment to restore the circulation can halve the risk of death (Daniels, R et al 2011).

First dose antibiotic should be prescribed in the Sepsis Stat Dose Box on the front page of the prescription chart. The EXACT TIME of prescription and administration should be documented.

SEPSIS STAT DOSE	Once antibiotics and fluids prescribed, give to registered nurse / midwife to administer within 60 minutes of sepsis identification. Refer to Trust antibiotic guidelines.							
Date	Antibiotic	Dose	Indication	Route	Time prescribed	Signature and bleep	Given by	Time given
					HH:MM			HH:MM
					HH:MM			HH:MM
					HH:MM			HH:MM
!! THINK SEPSIS RESUSCITATION BUNDLE !!								

4. **I.V fluid resuscitation -** Hartmann's Solution is the recommended fluid of choice on the Ipswich Hospital Trust Intravenous Fluid Prescription Chart.

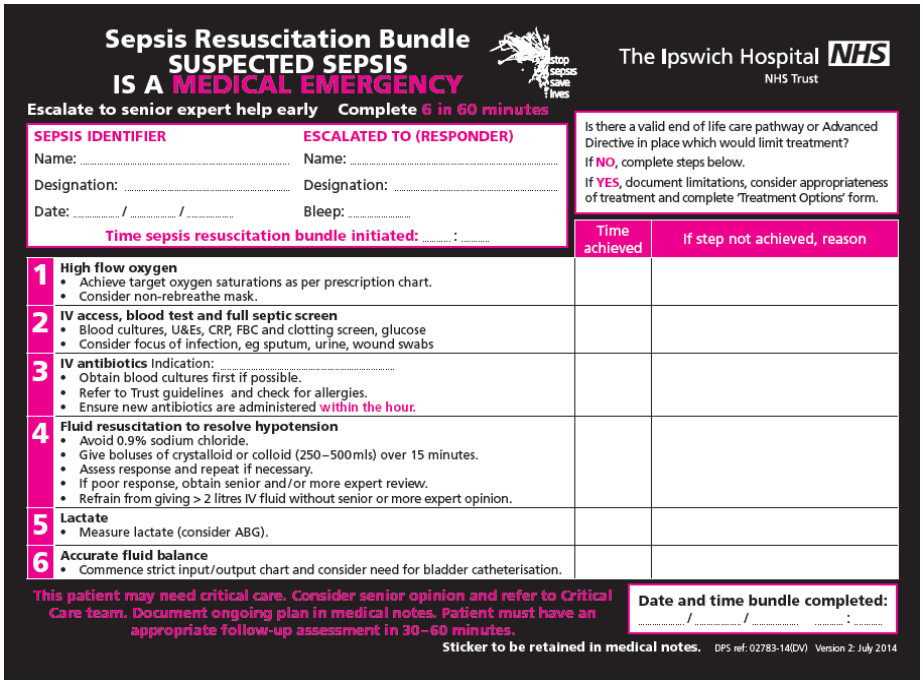
   Give boluses of crystalloid or colloid (250-500mls) over 15 minutes. Assess response and repeat as necessary. Obtain senior/expert review if poor response after two litres of fluid. Take caution with those patients with known cardiac failure

5. **Lactate –** Measure lactate, consider an ABG. Lactate >4mmol/L can indicate severe sepsis

6. **Accurate fluid balance –** Commence strict fluid balance chart and consider need for urethral catherisation.

3.4 Sepsis 6 Resuscitation Bundle Sticker

This sticker is a time sensitive audit tool and therefore MUST be completed and placed in the medical notes.



Sepsis Resuscitation Bundle
SUSPECTED SEPSIS IS A MEDICAL EMERGENCY

The Ipswich Hospital NHS
NHS Trust

Escalate to senior expert help early **Complete 6 in 60 minutes**

SEPSIS IDENTIFIER	ESCALATED TO (RESPONDER)
Name:	Name: .....
Designation:	Designation: .....
Date: ... / ... / ...	Bleep: .....

Time sepsis resuscitation bundle initiated: ... : ...

Is there a valid end of life care pathway or Advanced Directive in place which would limit treatment?
If NO, complete steps below.
If YES, document limitations, consider appropriateness of treatment and complete 'Treatment Options' form.

		Time achieved	If step not achieved, reason
1	**High flow oxygen** • Achieve target oxygen saturations as per prescription chart. • Consider non-rebreathe mask.		
2	**IV access, blood test and full septic screen** • Blood cultures, U&Es, CRP, FBC and clotting screen, glucose • Consider focus of infection, eg sputum, urine, wound swabs		
3	**IV antibiotics** Indication: ..... • Obtain blood cultures first if possible. • Refer to Trust guidelines and check for allergies. • Ensure new antibiotics are administered within the hour.		
4	**Fluid resuscitation to resolve hypotension** • Avoid 0.9% sodium chloride. • Give boluses of crystalloid or colloid (250–500mls) over 15 minutes. • Assess response and repeat if necessary. • If poor response, obtain senior and/or more expert review. • Refrain from giving > 2 litres IV fluid without senior or more expert opinion.		
5	**Lactate** • Measure lactate (consider ABG).		
6	**Accurate fluid balance** • Commence strict input/output chart and consider need for bladder catheterisation.		

This patient may need critical care. Consider senior opinion and refer to Critical Care team. Document ongoing plan in medical notes. Patient must have an appropriate follow-up assessment in 30–60 minutes.

Date and time bundle completed: ... / ... / ... ... : ...

Sticker to be retained in medical notes. DPS ref: 02783-14(DV) Version 2: July 2014

The patient must have an appropriate follow-up assessment within 30-60 minutes after completion of the sepsis bundle. If the patient continues to deteriorate -

SEEK SENIOR HELP IMMEDIATELY (SpR and above)

3.5 ESCALATION PLAN

If the patient with sepsis develops evidence of organ dysfunction or fails to respond to fluid resuscitation, then senior expert help is required.

The patient may need Critical Care input. Consider senior/expert opinion and refer to Critical Care Team on bleep 055.

Document on-going plan in medical notes. If transfer to Critical Care is required, refer to the Transfer Policy.

The Nerve Centre Software will prompt clinical escalation and increased frequency of vital signs should the E-Obs indicate a potential sepsis picture.

SECTION 4 TRAINING AND EDUCATION

Education /Training Need	Staff group/individual	Method of training/education	Responsibility for training	Timescale to complete training/competence
Sepsis 6 interventions	*Medical Staff*	*Trust formal presentation*	*Kate Turner Critical Care Consultant*	*On-going*
		Surgeons Meeting	*CCOT*	
	Junior Medical Staff	*The Deteriorating Patient Simulation session*	CCOT	*On-going*
		Link on Hospital Intranet Page	CCOT	*On-going*
		FY1 Trust Induction FY1 and FY2 Mandatory Training	CCOT	*On-going*
	Nurses, Midwives, Health Care Assistants	*The Deteriorating Patient Simulation Session*	CCOT	*On-going*

SECTION 5: DEVELOPMENT AND IMPLEMENTATION INCLUDING DISSEMINATION

5.1 Staff involved in the development and implementation of this Policy –

Nichola Benmore – Critical Care Outreach Practitioner, CCOT
Claire Gray – Practice Educator in Critical Care, CCOT
Kate Turner– Consultant Anaesthetist in Critical Care, Critical Care Unit

The management of Sepsis Policy will be introduced to the Trust using the following methods;

- Nursing & Midwifery Board Forum
- Pharmacy Lead Group
- Ward staff teaching sessions
- FY1/FY2 teaching sessions
- Deteriorating Patient Simulation sessions
- Corporate update day for nurses

5.2 This Policy will be made available on the hospital intranet.

5.3 All staff will be notified via email regarding the existence of this Policy. All managers will be asked to highlight this to all staff and attend teaching sessions as appropriate.

SECTION 6 - MONITORING COMPLIANCE & EFFECTIVENESS

Compliance to be measured	Monitoring Tools	Responsibility (nominated person by Directorate/Department)	Timescale
The Sepsis Six bundle is initiated for patients with sepsis	Ward audit programme Audit of training records and completed CCOT E-form on Evolve	CCOT CCOT CCOT	6 months following implementation of Policy
'Time to first dose' Stat antibiotic prescription monitoring	Pharmacy Audit every 6 months; sepsis stat antibiotic box used? Were antibiotics given within the hour? Was the patient given the antibiotic in ED?	Holly Gissing (Pharmacist)	Six monthly

SECTION 7 - CONTROL OF DOCUMENTS INCLUDING ARCHIVING ARRANGEMENTS - *A Checklist for Quality Assuring all hospital documents (refer to form attached to this template must accompany this document and archived locally. This form is the hospital's formal record, which tracks the document from development to archiving.*

7.1 Once ratified by *(insert the name of the hospital committee)* the responsible officers will forward this guideline to the Information Governance Department for a document index registration number to be assigned and for the guideline to be recorded onto the central hospital master index and central document library of current documentation.

7.2 In order that this guideline adheres to the hospital's Records Management Policy, the responsible officer/Business Unit risk and governance group will arrange for staff to be advised when this guideline is superseded and for arranging for this version to be removed from the hospital's intranet. They will also advise the Information Governance Department who will ensure that this guideline is removed from the current index and library, archived and retained for 10 years from the archive date.

SECTION 8: SUPPORTING COMPLIANCE AND REFERENCES

The UK Sepsis Trust

References:

Kumar A, Roberts D, Wood KE, Light B, Parillo JE, Sharma S, Suppes R, Feinstein D, Zanotti S, Taiberg L, Gurka D, Cheang M (2006) Duration of hypotension before initiation of effective antimicrobial therapy is the critical determinant of survival in human septic shock. Critical Care Medicine June 34 (6) 1589-1596

Marik PE, Lipman J (2007) The definition of septic shock: implications for treatment. Critical Care Resuscitation March 9 (1) 101-103

Mellor J (2014) 'Health sector needs to step up to the plate on sepsis' Parliamentary & Health Service Ombudsman 2nd September 2014
Available online; http://www.ombudsman.org.uk/about-us/news-centre/press-releases/2014/health-sector-needs-to-step-up-to-the-plate-on-sepsis,-says-parliamentary-and-health-service-ombudsman-julie-mellor

Padkin A, Goldfrad C, Brady AR, Young D, Black N, Rowan K (2003) Epidemiology of severe sepsis occurring in the first 24hrs in intensive care units in England, Wales, and Northern Ireland. Critical Care Medicine September 31 (9) 2332-2328

The College of Emergency Medicine (2014) Severe Sepsis & Septic Shock Report of the Clinical Audit 2013-14 Available online; http://www.rcem.ac.uk/Shop-Floor/Clinical%20Standards/Sepsis

The UK Sepsis Trust (2014) Clinical Toolkits. Available online; http://sepsistrust.org/info-for-professionals/clinical-toolkits/

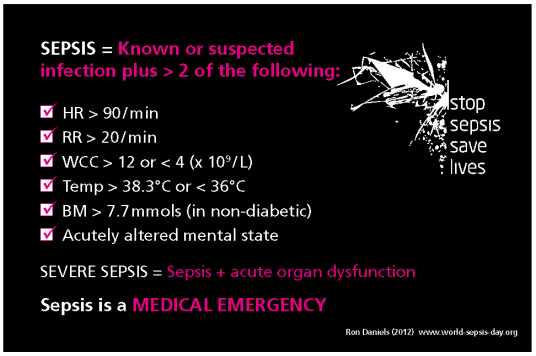
SEPSIS – What to do

The Ipswich Hospital NHS
NHS Trust

IDENTIFY

Sepsis identifier = The person who identifies sepsis.

Initiate basic principles of sepsis resuscitation up to your level of clinical competence.

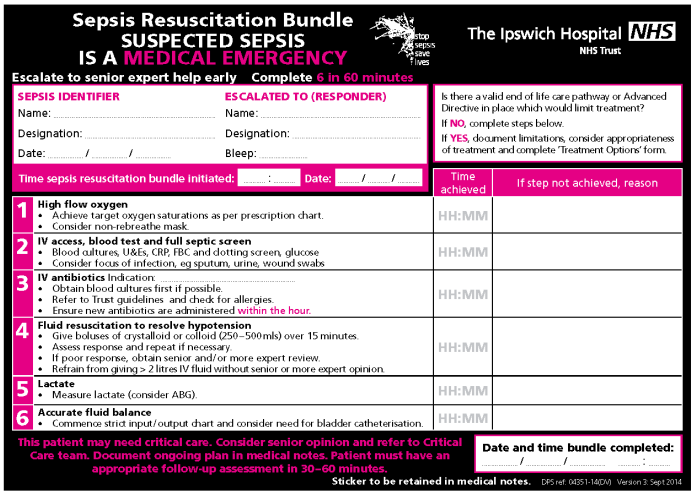


RESUSCITATE

Responder = The professional who is able to fully complete the resuscitation bundle.

Notify primary team or on call doctor specifying that the patient is septic.

The Critical Care Outreach team can offer clinical support – bleep 732.



Sepsis Resuscitation Bundle
SUSPECTED SEPSIS IS A MEDICAL EMERGENCY

The Ipswich Hospital NHS
NHS Trust

Escalate to senior expert help early Complete 6 in 60 minutes

SEPSIS IDENTIFIER	ESCALATED TO (RESPONDER)
Name:	Name:
Designation:	Designation:
Date: / /	Bleep:

Time sepsis resuscitation bundle initiated: : Date: / /

Is there a valid end of life care pathway or Advanced Directive in place which would limit treatment?
If NO, complete steps below.
If YES, document limitations, consider appropriateness of treatment and complete 'Treatment Options' form.

		Time achieved	If step not achieved, reason
1	**High flow oxygen** • Achieve target oxygen saturations as per prescription chart. • Consider non-rebreathe mask.	HH:MM	
2	**IV access, blood test and full septic screen** • Blood cultures, U&Es, CRP, FBC and clotting screen, glucose • Consider focus of infection, eg sputum, urine, wound swabs	HH:MM	
3	**IV antibiotics** Indication: • Obtain blood cultures first if possible. • Refer to Trust guidelines and check for allergies. • Ensure new antibiotics are administered within the hour.	HH:MM	
4	**Fluid resuscitation to resolve hypotension** • Give boluses of crystalloid or colloid (250–500 mls) over 15 minutes. • Assess response and repeat if necessary. • If poor response, obtain senior and/or more expert review. • Refrain from giving > 2 litres IV fluid without senior or more expert opinion.	HH:MM	
5	**Lactate** • Measure lactate (consider ABG).	HH:MM	
6	**Accurate fluid balance** • Commence strict input/output chart and consider need for bladder catheterisation.	HH:MM	

This patient may need critical care. Consider senior opinion and refer to Critical Care team. Document ongoing plan in medical notes. Patient must have an appropriate follow-up assessment in 30–60 minutes.

Date and time bundle completed: / / :

Sticker to be retained in medical notes. DPS ref: 04351-14(DM) Version 3: Sept 2014

Ensure sticker fully completed and place in medical notes. 'Time achieved' must be completed for each intervention.

ESCALATE

All working towards the completion of the Resuscitation Bundle within 60 minutes.

This patient may need critical care. Consider senior opinion and refer to Critical Care consultant early. Document ongoing plan in medical notes. Patient must have an appropriate follow-up assessment in 30–60 minutes.

DPS: 05266-14
Issue 2: December 2014
Document lead and queries: Claire Gray, CCORT (ext 6252)

Our Passion, Your Care.
www.ipswichhospital.nhs.uk

Suspect sepsis?

The Ipswich Hospital NHS
NHS Trust

Complete **6 in 60 min**

1. High flow oxygen
2. Take bloods including blood cultures
3. IV antibiotics (blood culture first if possible)
4. IV fluid resuscitation (avoid normal saline)
5. Measure lactate (consider ABG)
6. Measure urine output and strict fluid balance

Sepsis is a medical emergency
Escalate to senior expert help early

Completing the Sepsis Six in Sixty can *double* the chance of survival

www.world-sepsis-day.org

SEPSIS = Known or suspected infection plus > 2 of the following:

- HR > 90/min
- RR > 20/min
- WCC > 12 or < 4 (x 10^9/L)
- Temp > 38.3°C or < 36°C
- BM > 7.7 mmols (in non-diabetic)
- Acutely altered mental state

SEVERE SEPSIS = Sepsis + acute organ dysfunction

Sepsis is a MEDICAL EMERGENCY

Ron Daniels (2012) www.world-sepsis-day.org

DPS: 06570-12