Sepsis



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Acknowledgement of Country

The Department of Health acknowledges the Whadjuk people of the Noongar nation as the traditional owners and custodians of the land on which we work and pays respect to their Elders past and present.

Introduction

Sepsis is a life-threatening medical emergency that occurs when the body has an extreme response to infection and causes damage to its own tissues and organs. It is a condition that is estimated to affect at least 55,000 Australians each year, resulting in 8,700 deaths.

When we get an infection, our body's immune system will fight the infection. In sepsis, the immune response becomes uncontrolled and exaggerated, leading to widespread inflammation and tissue damage. If left untreated, sepsis can progress quickly and may lead to organ failure and even death.

Any infection can lead to sepsis, including:

- · Lung infections such as pneumonia
- Viruses such as Influenza or Covid-19
- Urinary tract infections
- Digestive system infections such as food poisoning or parasites
- · Bloodstream infections, known as bacteraemia
- · Skin infections such as infected wounds or cellulitis
- Tooth infection
- · Throat infection.









If you, or the person you care for gets sicker, tell us right away





Worried about a change in your condition or the person you care for? Tell us.





Still worried? Speak to a senior staff member.





If your concern is urgent you can call your hospital's Aishwarya CARE Call line or use the dedicated Aishwarya's CARE Call phone installed in some emergency departments.

You know yourself or your loved one best. We will listen to you.

healthywa.wa.gov.au



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Who can get sepsis?

The reason some people develop sepsis from an infection is not well understood but research into this area continues. Sepsis can affect anyone with an infection, at any time but particular groups are at greater risk.

Those at risk include:

- Anyone with an infection that is not getting better
- Older people, newborns and young children
- Aboriginal and Torres Strait Islander people
- People with complex health conditions, chronic disease such as diabetes, kidney, liver or heart disease
- People with a weak immune system, including those being treated for cancer with chemotherapy
- People with COVID-19 or pneumonia
- · People who are pregnant or have just given birth
- People who have had sepsis before
- People with burns, wounds and injuries
- People with medical devices in their body such as a pacemaker, stent, catheter, or prosthetic valve
- · People who have had recent surgery.



Know the signs of sepsis

Eighty percent of sepsis cases start in the community. Recognising the signs early and seeking urgent medical assistance are crucial to ensuring better outcomes. Sepsis is difficult to recognise because its symptoms are often like those of other illnesses. However, there are a number of warning signs that could indicate sepsis, some people may have only one or many of these symptoms. The symptoms include:

What are the signs and symptoms?



Fever, shivering or feeling very cold



Short of breath



Heart beating too fast



Confusion or disorientation



Feeling really tired



Clammy or sweaty skin



Pain or discomfort



Rash or change in skin colour



Not much urine



Diarrhoea



Vomiting or feeling sick

Sepsis is hard to recognise. Trust your gut, seek urgent medical attention, don't be afraid to call an ambulance and ask the question 'could it be sepsis?'.

Treatment of sepsis

To support the delivery of care to sepsis patients, WA Health hospitals have sepsis pathways that provide doctors and nurses with a tool to help recognise, escalate and manage sepsis. The pathway will be activated if any patient has confirmed or suspected sepsis.

Recognition and diagnosis

There is no singular diagnostic test to confirm sepsis; rather, doctors and nurses use a combination of clinical assessment, tests and monitoring to identify sepsis. It's okay to ask our doctors and nurses "could it be sepsis?".

This process usually involves:

- 1. Physical examination: This might include the doctors and nurses taking a medical history during which they will ask about your symptoms, listen to your lungs, heart and bowels and check for signs of confusion.
- 2. Vital sign monitoring: This will include your temperature, heart rate and rhythm, which may involve putting a heart monitor on, as well as checking your blood pressure, respiratory rate and oxygen levels. These will be monitored closely for any changes.
- **3. Blood tests:** These are essential for diagnosing sepsis. Some tests may include:
 - Infection markers: high white cell count, lactate and other inflammatory markers can suggest infection or sepsis.
 - Blood cultures: these will help identify the specific pathogen causing the infection and help guide antibiotic choice.
 - Organ function tests: these can show if you kidneys, liver and heart have had any damage.

4. Other tests may include:

- Urine tests
- · Sputum tests
- Wound swabs
- Respiratory swabs
- Imaging such as X-rays, CT scans, MRI, ultrasounds.

The sooner sepsis is treated, the better the chances of recovery. If identified and treated early, most patients will make a full recovery. If you are pregnant, it is ok to ask about the wellbeing of your baby. You will be reviewed by a senior doctor who will diagnose sepsis, and treatment usually involves a combination of interventions:

Antibiotics

Antibiotics are used to help fight infection. You will receive broadspectrum antibiotics through a drip in your arm. Broad spectrum antibiotics treat a wide range of different pathogens or 'bugs' while we wait for your blood culture results to come back, which may take a few days. Once we know what the pathogen is, your antibiotics could change to something more targeted.

Fluids

Sepsis can cause your blood pressure to become dangerously low, causing shock and damaging your organs. We may also give you fluids through a drip in your arm to maintain blood pressure and improve circulation.

Oxygen

Sepsis can reduce the oxygen supply to tissues and organs. We will monitor your oxygen levels closely and, in some cases, oxygen may be required through a nasal canula or mask to ensure organs and tissues receive enough oxygen and prevent damage.

Operation

Antibiotics alone might not always be enough to kill the infection. Depending on where the infection is, some people may need an operation to surgically remove the source of infection. This is called a source control procedure. If you need an operation, a specialist surgeon will discuss the procedure to you in detail and get consent.

Intensive Care Unit

Sepsis can develop rapidly, and patients may become critically ill. In some cases, specialist treatment in the Intensive Care Unit (ICU) will be required to manage the condition and support the body's organs.

If you or a loved one requires specialist care in the ICU for sepsis or septic shock, this may include:

- Continuous monitoring: our team will monitor your vital signs closely by placing you on a continuous monitor. Monitoring your vital signs closely is crucial for assessing and managing your sepsis care. It allows us to respond quickly to any changes in condition.
- Blood pressure support: sepsis can cause dangerously low blood pressure, which can lead to your vital organs not getting enough blood flow and oxygen. The use of strong medications called vasopressors may be required to stabilise and support your blood pressure. A large drip called a central line may be placed into your neck or groin to deliver this medication.



- Dialysis: sepsis can damage your kidneys, causing them to not work properly. Usually, the kidneys work to filter out waste products produced by the body and remove excess fluid. Dialysis may be required to take over this function until kidney function improves. A large drip will be placed in the neck or groin, blood will be pumped through the dialysis machine to be filtered and then returned to circulation.
- Non-invasive ventilation: to assist with breathing we may place a mask over your face that is connected to a breathing machine (ventilator). This will provide support as you breathe in and out.
- Invasive ventilation: for patients requiring more intensive support, we may use a ventilator connected to a breathing tube placed down your throat. You will be put to sleep with sedatives and painkillers, and we would control your breathing while your body focuses on beating the infection.

Patient diary

Patients who have a stayed in the ICU may experience lost time, gaps in their memory, nightmares, and confusion. A recent innovation to help fill these memory gaps and help patients have a better understanding of what happened to them in ICU is the use of a patient diary.

The diary can be written in by friends, family and healthcare providers and detail your progress each day and what happened while you were asleep. You may not feel ready to look at your diary straight away. It can be an emotional process, so take it slowly and have your family there to support you.

Life after sepsis

Post Sepsis Syndrome (PSS)

Sepsis does not always end when the infection is treated. Sepsis affects your whole body and can take time to heal. Most patients who survive sepsis will eventually make a full recovery, but many will experience physical, emotional and psychological effects, a condition known as Post Sepsis Syndrome (PSS). These can last weeks, months or even years, impacting your quality of life.

PSS is a condition that affects up to 50 percent of sepsis survivors. Recovery time will vary from person to person. The risk of developing PSS is higher among people admitted to the ICU or those who have had a prolonged hospital admission.

Signs and symptoms can include:

Emotional and psychological symptoms

- Post-traumatic stress syndrome (PTSD)
- Nightmares
- Anxiety
- Depression
- Sadness
- Mood swings
- Clouded thinking
- Difficulty concentrating
- Fatigue and tiredness
- Poor memory
- Reduced attention span
- · Difficulty sleeping
- Panic attacks
- Hallucinations

Physical symptoms

- Difficulty swallowing
- · Muscle weakness
- Weight loss, lack of appetite, food tasting different
- Brittle nails and hair loss
- · Body aches or pains
- Headaches
- Visual and speech disorders
- Chronic nerve pain such as tingling and intensified pain in extremities
- Joint and muscle pain, including paralysis.



Sepsis survivors are at higher risk of getting sepsis again.

How to prevent getting sepsis again

Sepsis survivors are at an increased risk of experiencing sepsis again, particularly in the first few months after recovery.

One in every four sepsis survivors will be readmitted to hospital within 30 days, most commonly due to infection.

This is thought to be due to a weakened immune system, pre-existing health conditions and organ damage. Sepsis survivors should take steps to prevent infection, including:

- practise good hygiene keep your body and hands clean
- avoid being around anyone who is sick
- monitor wounds, inspect bites and cuts closely. If they are not healing or become red or hot, make sure you visit your GP
- if you develop an infection, make sure you see your GP and take antibiotics as prescribed
- if you go to hospital or visit a doctor, make sure you inform them of your past diagnosis of sepsis

- stay up-to-date with your vaccinations, including your annual flu shot
- look after your chronic diseases
- maintain a healthy lifestyle by eating a healthy, balanced diet and getting enough physical exercise to rebuild your strength
- know the signs and symptoms of sepsis, act fast and seek medical care immediately.

Supporting your recovery

memory.

Memory: you may experience gaps in your memory – asking your family to fill in any gaps can be a big help. If you were admitted to the ICU your family may have kept a diary. When you are discharged, you may experience ongoing forgetfulness. Engaging in cognitive exercises and rehabilitation may aid in improving

Time: Allow yourself time to recover, everyone recovers at their own pace. Be gentle with yourself. Slowly bring back your hobbies and daily activities into your life as able

Rebuild your strength: Rebuilding your strength is a gradual process and takes time, so do not rush yourself. Your strength will slowly return as you become more active. Find ways to manage fatigue and energy levels, such as using a shower chair.

Exercise: It is important to keep mobile if possible. It's normal to not have the same level of energy or strength that you did before you became sick. You may have lost muscle tone and have some pain. Talk to a physiotherapist and start with light exercises to improve strength, balance and flexibility.

Eat a balanced diet: Make sure you eat healthy and nutritious food, including lots of fruit and vegetables, and drink plenty of water. You may have little appetite when leaving hospital; try eating little but often if you are struggling with large meals. Seek support from a dietician to tailor a program to assist with energy levels and recovery.

Speak about your experiences: Sharing your thoughts, feelings, concerns and experiences can benefit your recovery. Join sepsis support groups to share your journey. Seek professional help from a psychologist if you are suffering with ongoing emotional or psychological effects such as anxiety or PTSD.

Sleep: Sleep is so important in your journey to recovery. It can take time to get back to a normal sleep routine, particularly if you are having nightmares. You may experience difficulties falling asleep or waking up often. This should improve with time; if it doesn't, seek advice from your GP.

Stress and anxiety: As you get better and start doing more, you may face new challenges. One common challenge is accepting that you were ill, understanding the illness and focusing on how to get better. Manage this through your immediate support people, your GP and survivor support groups. In some cases, some people may benefit from speaking with a psychologist.

Diary: Keeping a daily diary documenting your physical symptoms and feelings, sleep and activity can be both therapeutic and useful. A diary can chart your progress and can help you to monitor any

symptoms that you may want to discuss with your GP. It is important to celebrate your achievements, regardless of how small you feel they may be.

Research and learn about sepsis: Despite the significant burden of sepsis, many people know little about it. Survivors find that understanding the condition can be empowering by fostering a sense of control and helping to process the journey. Learning about sepsis not only helps your healing but can help spread awareness.



For families, carers and loved ones

How can you help?

Be patient: recovery takes time, and sepsis survivors may experience setbacks or slow improvement. Patience and understanding go a long way in supporting them through the process.

Provide emotional support: sepsis survivors can struggle with anxiety, depression, or feelings of frustration. Offer a listening ear, provide encouragement, and remind them that it's okay to take things one day at a time.

Assist with daily activities: simple tasks that may have once been easy, such as walking, cooking or even dressing, can feel overwhelming after sepsis. Helping with these activities can alleviate stress and promote a smoother recovery.

Encourage physical and cognitive rehabilitation: many sepsis survivors benefit from physical therapy, occupational therapy, or cognitive exercises to regain strength and focus. Encouraging consistent participation in these programs can aid their recovery.

Stay informed and involved: understanding PSS and how it affects the person can help you recognise when they may need more help or when to celebrate small victories. Attending medical appointments with them or learning about recovery together can deepen your understanding and strengthen your support.

Help and support

Everyone will recover at different rates from sepsis, and everyone will experience varying degrees of symptoms. Being discharged from hospital after surviving sepsis can be a big adjustment. Your recovery from sepsis may be challenging and overwhelming.



It's okay to ask for help

On discharge you will receive a letter from your care team detailing your hospital admission; a copy will also be sent to your nominated GP. Make sure you make an appointment to see your GP and tell them you were diagnosed with sepsis so that symptoms are assessed within the context of sepsis. This may vary and broaden the recovery and rehabilitation management plan. Bring a copy of your discharge letter in case they did not receive it.

Discuss any thoughts, concerns, or ongoing physical, emotional, or psychological issues with your GP. Assessing these symptoms in association with a recent sepsis episode will better inform the most appropriate intervention and support required. Including the need for a comprehensive, proactive management plan to maximise comfort, functionality, and quality of life.

Support groups and sepsis stories

Australia and NZ Sepsis Support Group – Sepsis Australia australiansepsisnetwork.net.au

Australia & NZ Sepsis Support Group - Facebook https://www.facebook.com/groups/1282752471763476/

Maddy Jones Foundation | <u>Maddy Jones Foundation for</u> Sepsis Prevention

Matthew's Story | renovatingmatthew.com

Mandy and Rod McCracken

https://www.mandyandrodmccracken.com/

https://www.facebook.com/Sepsis-Awareness-Tasmania-348691578989266/

https://www.comatoconfidence.com/

Sepsis resources

Sepsis Australia

https://www.australiansepsisnetwork.net.au/resources/post-sepsis-syndrome/

https://www.safetyandquality.gov.au/newsroom/mediaand-communications-resources/media-professionals/ourcampaigns/sepsis-awareness-resources

https://www.safetyandquality.gov.au/standards/clinical-care-standards/sepsis-clinical-care-standard

https://www.endsepsis.org/what-is-sepsis/maternal-sepsis/

 $\underline{\text{https://www.sepsis.org/sepsisand/pregnancy-childbirth/}}$

 $\textbf{Global Sepsis Alliance} \ | \ \underline{\text{https://www.sepsis.org}} /$

Support Resources - The UK Sepsis Trust | https://sepsistrust.org/

Post-Sepsis Syndome | Sepsis Alliance

https://sepsistrust.org/

Home - My Life After ICU

https://www.mylifeaftericu.com/adults-in-icu/sepsis/

The Australian & New Zealand Intensive Care Foundation https://intensivecarefoundation.org.au/patients-families

Discharge checklist	Yes	Notes
Sepsis awareness and prevention		
Ensure you are aware of how you got sepsis and what type of pathogen caused it.		
You are at greater risk of developing sepsis again. Ensure that you understand how to prevent recurrence.		
Ensure you understand the signs and symptoms of sepsis. Sepsis can progress very quickly, so if you think you have any of the symptoms, call triple zero (000) or go straight to the closest Emergency Department and ask: "Could it be sepsis?"		
Discharge documentation		
You will receive a discharge letter from your doctor giving a summary of your admission. Ensure the discharge letter has 'Sepsis' as a diagnosis.		
Ensure a copy of the discharge letter has been sent to your nominated GP.		

	Yes	Notes			
Discharge appointments					
Make an appointment to see your GP as soon as you are discharged. Bring a copy of your discharge letter with you in case they have not received it yet. Inform the GP of your recent sepsis diagnosis and discuss a management plan for any ongoing issues.					
Consider making an appointment with: • Dietician • Physiotherapist • Psychologist • Pharmacist					
Discharge medication management					
On discharge your medications may have changed. This should be outlined in your discharge summary. Go through your old and new medications clearly with the nurse, doctor or pharmacist and clarify any concerns and ensure you have a clear understanding of what medications to take and when. Ensure you take all medications as prescribed.					

	Yes	Notes		
Discharge medication management (continued)				
You may require ongoing IV antibiotics on discharge. Ensure you have been linked to a service that will do this for you and be aware of when your first appointment will be.				
Post-sepsis syndrome				
Ensure you are aware of the symptoms of PSS.				
Ensure your family, friends and carers are aware of PSS and how they can best support you.				
Read through 'supporting your recovery' and make a plan to implement relevant strategies. Clarify any concerns with your nurse.				
While you recover you may need to take some time off work. Speak with your employer about taking some time off. Ask your medical team to provide a medical certificate if required.				



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