

Focus: Sepsis Watch

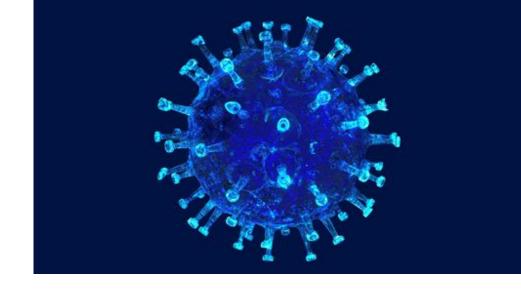
SueAnn Secaffico and Stacy Goldstein

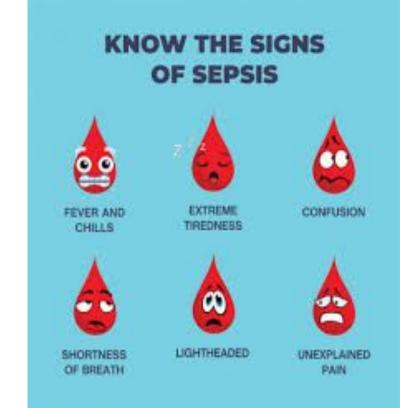










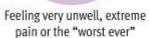


SEPSIS

Sepsis is an extreme overreaction to an infection and is an life-threatening emergency that can cause organ failure or death

It usually starts as a lesser infection such as a urinary tract infection or gastrointestinal infection







Fast breathing



Skin rash or clammy, sweaty skin



Feeling very hot or cold,



chills or shivering



Fast heart beat



Feeling confused disorientated, or slurring speech



Not passing much (or any) urine



Weakness or aching muscles

SEPSIS

- 1 out of 3 of <u>all deaths</u> in hospitals includes a point where the patient had sepsis
- 1.7 million people develop sepsis every year in the U.S.
 - o 270K of those people will die

Sepsis Kills.

250,000 Americans die each year from sepsis.

That's more than from AIDS, breast cancer and prostate cancer COMBINED. Sepsis is the body's lifethreatening reaction to an infection. Anyone can get sepsis. A small cut, a bug bite or an infected tooth can all lead to sepsis.

Sepsis is preventable and treatable. Do you know the Signs of Sepsis?







Extreme Pain/ Physical Discomfort



Pale or Mottled



Sleepy/Difficult



THE ROTZY STAUNTON FOUNDATION

Help Save Lives. Share the Signs of Sepsis with your family and friends.

For more information, visit www.rorystauntonfoundationforsepsis.org



WORLD SEPSIS DAY INFOGRAPHICS

A GLOBAL HEALTH CRISIS



47 000 000 - 50 000 000 cases per year



Survivors may face lifelong consequences



At least 11 000 000 die -1 death every 2.8 seconds



1 in every 5 deaths worldwide is associated with sepsis

nfoeraphic 2/21

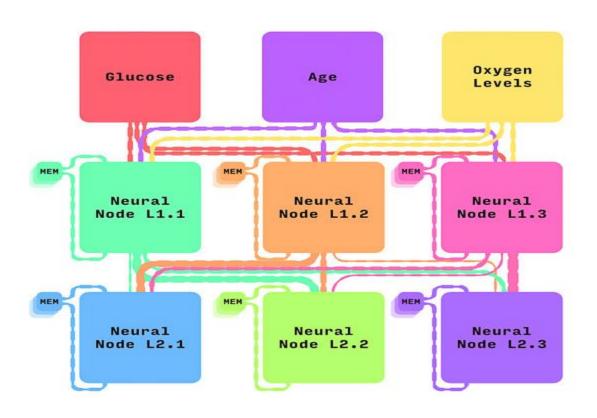


www.worldsepsisday.org www.global-sepsis-alliance.org



Often hard to diagnose

- There are symptoms that can appear to be other issues
- There are many factors that go into determining if someone is septic
- If it is not caught early and treated, there is a <u>high</u>
 <u>likelihood that a person will</u>
 <u>die</u>

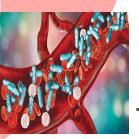




Algorithms better at predicting than humans

- Duke University is at the forefront of developing Artificial intelligence systems that integrate neural networks with data from thousands of patients
- These systems have decreased death due to sepsis by 20%

Factors the algorithm considers



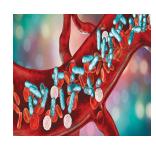
Temperature

>100.4 F



Heart Rate

> 90 bpm



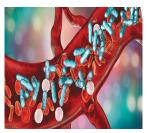
Respiratory Rate

< 32 mmHg



White Blood Cells

> 12,000/mm³, < 4,000/mm³



Suspected Infection

Suspected or present source of infection



Organ Failure

Evidence of ≥ 2 organs failing

AI and TRAINING

The AI is trained by scientists with large datasets of thousands of individuals

 After this training period, the algorithm can adapt with new information without human intervention

 However, doctors are able to use this information as a tool to determine how to proceed. The AI is not the end all be all of how to proceed with individual patients

PROS OF SYSTEM

- Uses patient data from thousands of patients to pinpoint where doctors can intervene
- Has reduced mortality due to sepsis
- Ultimately, it is the doctor's decision whether to intervene on a warning of sepsis



CONS OF SYSTEM

- There are a lot of false alarms and doctors working in the ICU and ER often undergo alarm fatigue and sometimes it is hard for them to determine when to take the alarms seriously
- Treatment due to false alarm can lead to antibiotic resistance and pulmonary edema from giving excessive fluids
- Medical Al systems such as this are not currently regulated by the FDA -there is not as much oversight as other medical tools
 - Epic System tool was worse than advertised

Last updated a few seconds ago.

. · 72 F

SEP Bed 197 · Admit 9/24 05:33 AM T 37.9 · P 69 · BP 111/70 · MAP 2 · R 22

MONI

SCRE

TRE

- © Ewalav hilog ep zizvecjuv su tochir oru secal no

70 F

SEP Unk Loc · Admit 9/24 05:53 AM T 37.5 · P Unk · BP 113/69 · MAP 70 · R Unk SCRE

MONI

TRE

- Suuvi izomaw alma tisiize wisij mungigret jilepo