



SEPSIS ALLIANCE

Suspect Sepsis. Save Lives.

Sepsis and Cancer Fact Sheet

Definition: Sepsis is the body's overwhelming and life-threatening response to infection which can lead to tissue damage, organ failure, and death.

Who it Hurts: While sepsis is an equal-opportunity killer, impacting the sick, the well, and people of all ages, some groups are more likely to be affected. These include very young children, older adults, and those with a weakened immune system.

Prevention: The risk of sepsis can be reduced by preventing or quickly identifying and managing infections. This includes practicing good hygiene, staying current with vaccinations, and seeking treatment when infections are suspected.

Treatment: Sepsis is a medical emergency that requires urgent attention and rapid treatment for survival. Sepsis can be treated and, in many instances, lives are saved by using existing and proven protocols.

Recovery: Many people fully recover from sepsis while others may have long-lasting effects, such as amputations or organ dysfunction, like kidney failure. Other after-effects of sepsis are less obvious, such as memory loss, anxiety, or depression.

Symptoms: When it comes to sepsis, remember **It's About TIME™**:

T – Temperature - higher or lower than normal

I - Infection – may have signs or symptoms of infection

M – Mental Decline - confused, sleepy, difficult to rouse

E – Extremely Ill – “I feel like I might die,” severe pain or discomfort

If you **suspect sepsis** (observe a combination of these symptoms), see your medical professional immediately, CALL 911, or go to a hospital with an advocate and say, **“I AM CONCERNED ABOUT SEPSIS.”**

Critical Facts

- Cancer occurs, on average, in 17-20% of all sepsis patients.^{1,2}
- People with sepsis often have other illnesses and cancer is one of the most common ones.^{1,2}
- The risk of developing sepsis is increased 10 times by the presence of any type of cancer.^{3,4}
- More than 1 in 5 sepsis hospitalizations is cancer-related.⁹
- In a study of hospital discharge data, cancer patients had 4 times the incidence of severe sepsis as did patients who did not have cancer. There were 16.4 cases per 1,000 people who had cancer.⁵

- The incidence of severe sepsis in cancer patients is not related to how old patients are. However, in patients who do not have cancer, the incidence of sepsis does increase with age.⁵
- The rate of severe sepsis in cancer patients varies with the type of cancer. The rate of severe sepsis in patients with hematologic (blood) tumors is almost 9 times higher than the rate in patients with solid tumors, such as colon cancer or breast cancer.⁵
- The likelihood of developing severe sepsis is 1.8 times higher for patients with solid tumors and 15 times higher for patients with hematologic tumors compared to the risk for patients who do not have cancer.⁵
- Severe sepsis is associated with 8.5% of all cancer deaths.⁵
- A sepsis diagnosis in cancer patients increases their risk of death by two to three times.^{3,4,5}
- In-hospital death rates for severe sepsis in cancer patients are 43-55% higher than in patients who don't have cancer. Severe sepsis death rates in cancer patients range from 18-45%.^{1,3,5,6,9}
- In one study of ICU patients in Europe, patients with hematologic tumors had considerably higher severe sepsis death rates (40-58%) than patients who did not have cancer (27%). Patients with solid tumors had severe sepsis death rates that were close to those of patients who did not have cancer.⁶
- Hospital length of stay and hospital costs are nearly 3 times higher in cancer patients with severe sepsis than in those without severe sepsis.⁵
- The readmission rate 30 days after hospitalization is higher after a cancer-related sepsis admission (23.2%) than a non-cancer related sepsis admission (20.1%).⁹
- Cancer survivors have more than double the risk of developing sepsis compared to patients without a history of cancer.⁴
- Sepsis-related mortality rates in cancer patients are improving. A recent study reported a mortality rate of 26% in sepsis patients with cancer based on data from 2014, a reduction from the mortality rate of 31% in this population in 2003.⁸

Pediatric Facts

- Severe sepsis death rates are higher in pediatric cancer patients than in patients without cancer of similar ages.⁵
- 16% of pediatric cancer patients with febrile neutropenia (fever and abnormally low count of white blood cells) were also diagnosed with sepsis. Sepsis in these patients more than doubled the length of hospital stay and resulted in a 10 times higher risk of death.⁷

Sources:

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Sepsis takes more lives than cancer worldwide, According to the WHO there were 9.6 million cancer deaths in 2018. (<https://www.who.int/news-room/fact-sheets/detail/cancer>) Per Rudd 2020, there are 11 million sepsis deaths annually worldwide.

Cooper et al 2019 Improvements in Sepsis-Associated Mortality in Hospitalized Cancer vs Non-Cancer Patients: A 12-Year Analysis Using Clinical Data.

LA comments on Rhee paper:

After looking over the recent sepsis and cancer mortality abstract, I think we can say that the sepsis-associated mortality rate among cancer patients in the study was 26% (based on 2012-2014 data)– meaning that approximately one-quarter of cancer patients with sepsis die – so therefore, it is important to be able to recognize and know how to treat sepsis in this patient population to reduce these deaths.

This is different from saying 26% of all cancer patients die from sepsis.

This mortality rate was down from 31.3% based on 2003-2005 data. I have requested the full article from the authors.

Hensley et al Critical Care Medicine 2019

More than 1 in 5 sepsis hospitalizations is cancer-related. (Tom slide) –

In-hospital mortality in cancer-related sepsis was 27.9% versus 19.5% in non-cancer-related sepsis.

Cancer-related sepsis was associated with an adjusted absolute increase in in-hospital mortality ranging from 2.2% to 15.2% compared with non-cancer-related sepsis.

In this cohort of over 1 million U.S. sepsis hospitalizations, more than one in five were cancer related. More than 23% of patients discharged with cancer-related sepsis were readmitted within 30 days.