

Sepsis: California Indian Health Program Data

Key Findings

- In 2016, sepsis impacted around 90 per 100,000 Active Indian Users throughout California.
- Sepsis increased among California Active Indian Users over the past decade.
- The most common illnesses leading to sepsis among California Active Indian Users were Pneumonia, skin and soft tissue infections, and urinary tract infections.

Background

Sepsis is a serious medical condition in which a person's immune system sends an overwhelming response to fight an infection. If left untreated, sepsis can lead to tissue damage, organ failure, and even death. Sepsis presents many unique challenges as it can arise suddenly and has a relatively quick progression from a simple infection to septic shock. However, sepsis does not simply arise spontaneously. Infections leading to sepsis can come from different sources, including bacterial infections; skin wounds; urinary, respiratory, and gastrointestinal tract systems; and invasive medical procedures (e.g., IVs, surgery)

that introduce bacteria into the bloodstream. Although sepsis is likely to affect those who are either very young or very old, have chronic diseases, and/or a weakened immune system, sepsis can impact people of all ages and levels of health.¹

California Active Indian Users Sepsis Data

Among 67,497 "Active Indian Users" who visited a Tribal or Urban Indian Health Program clinic in California between October 1, 2015 and September 30, 2016 (Fiscal Year 2016), 61 had received a confirmed diagnosis of sepsis, severe sepsis, or septic shock – a rate of about 90 per 100,000; severe sepsis diagnosis was over 7 per 100,000 (Figure 1). Data show an increase in the overall rate of sepsis among California Active Indian Users over the past ten years.

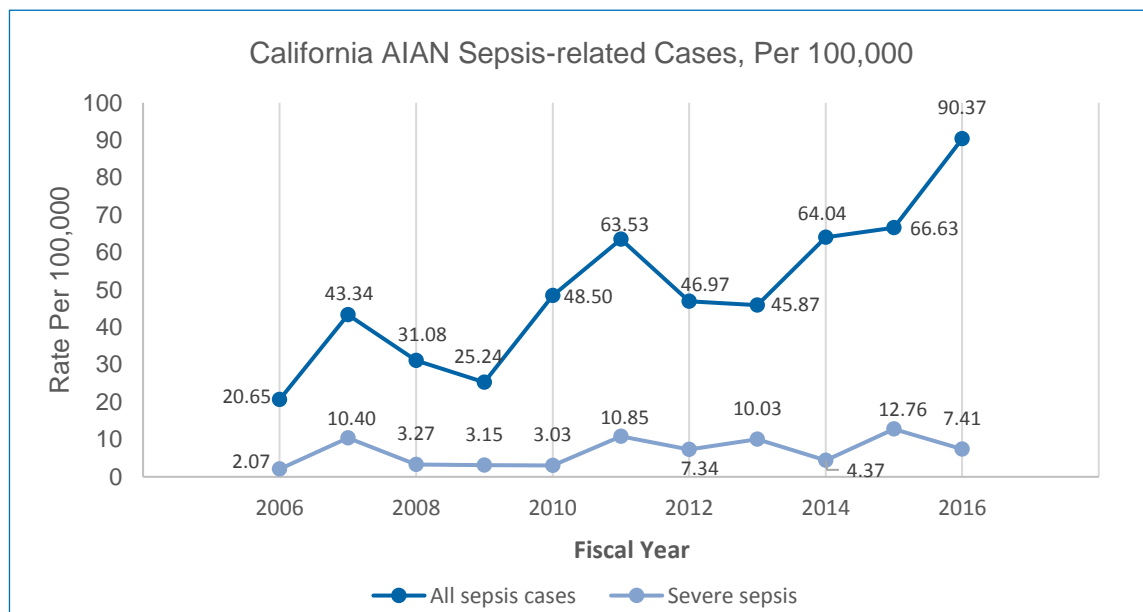


Figure 1

¹ Cohen J., Vincent, J.L., Adhikari N., K. et al., . (2015) Sepsis: a roadmap for future research. *Lancet Infect Dis.*, 15(5), 581-614. doi: 10.1016/S1473-3099(15)70112-X.

Among Active Indian Users in 2016 that had a confirmed sepsis diagnosis, 52% were female and 48% were male. The median age of patients with sepsis was 61 years old; nearly 80% were 45 years old or older. Over 60% of the sepsis cases were caused by unspecified organisms, while just over 13% of the cases were cause by Escherichia coli (E.Coli) or gram negative bacterial infections (Figure 2).

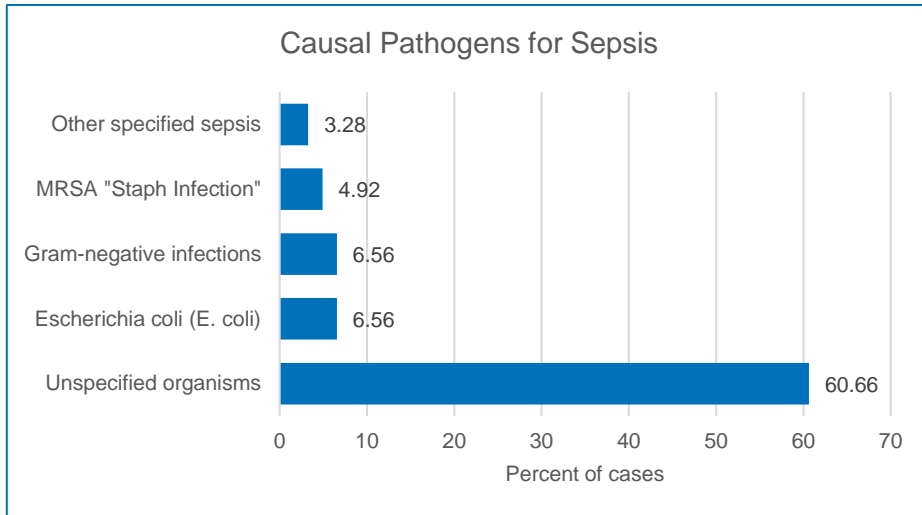


Figure 2

Early Sepsis Symptoms

- Temperature above 101 degrees Fahrenheit or below 96.8 degrees Fahrenheit (e.g., Fever or "chills")
- Rapid heart rate
- Elevated breathing rate or shortness of breath
- Development of an infection

The most common illnesses leading to sepsis among Active Indian Users were Pneumonia (34%), skin and soft tissue infections (16.4%), and urinary tract infections (UTI) (11.4%) (Figure 3). Active Indian Users with any of these infections had greater risk of sepsis than Active Indian Users without these infections present. In fact, Active Indian Users with Pneumonia had over 31 times the risk of sepsis compared to Active Indian Users without Pneumonia* (Figure 3). Chronic conditions present among Active Indian Users with sepsis included diabetes (55.7%), chronic kidney disease (13.1%), stroke (3.3%), and obesity (3.3%). Multiple chronic conditions occurred in 13.1% of the people with sepsis.*

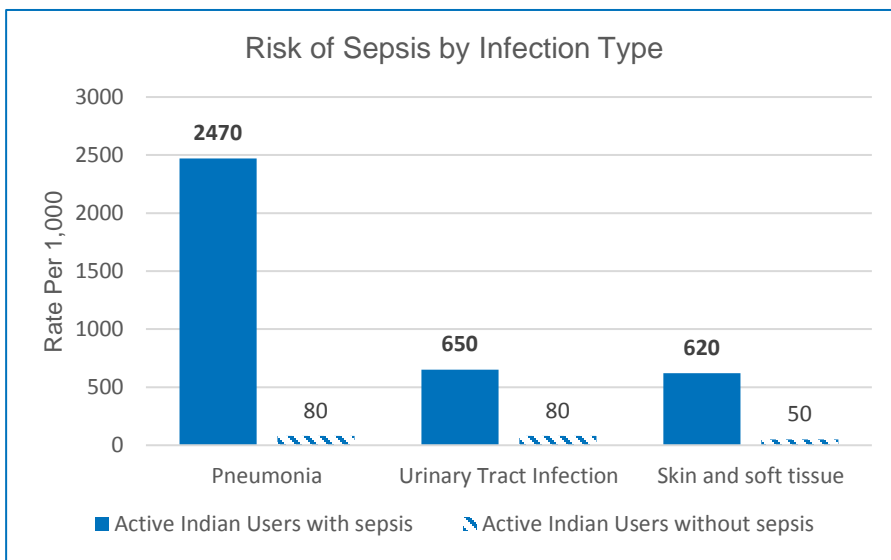


Figure 3

Prevention

Sepsis may not always be avoidable, but steps can be taken to reduce the risk of an infection leading to sepsis:

- Get vaccinated against pneumonia, flu, and other infections that can lead to sepsis
- Wash hands and bathe properly
- Clean wounds and infections properly
- Cover coughs and sneezes

Talk with your medical provider for more information.

* Pneumonia Relative Risk = 31.29, CI:21.91-62.54, P<0.01; Skin and soft tissue Relative Risk = 6.55, CI: 3.33-12.88, P<0.01; Urinary Tract Infection Relative Risk = 7.99, CI:3.64-17.52, P<0.01

Summary

Understanding sepsis and sepsis-related data is an important step in promoting public health among American Indian/Alaska Natives throughout California. It is important to interpret these data with caution: sepsis may be under reported in clinic-only patient encounter data, especially cases of severe sepsis and septic shock, which may require hospitalization.

Acknowledgements

This data brief was developed by Michael Mudgett, MPH, and Maureen Wimsatt, PhD, MSW, from the California Tribal Epidemiology Center (CTEC) housed within the California Rural Indian Health Board, Inc. (CRIHB) in Sacramento, CA. The document was funded by Indian Health Service Cooperative Agreement #U1B1IHS300189/03 as part of the core activities of CTEC.



California Tribal Epidemiology Center
California Rural Indian Health Board, Inc.
4400 Auburn Blvd. 2nd Floor
Sacramento, CA 95841
Ph: (916)929-9761
epicenter@crihb.org

