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- Despite an increase in awareness, sepsis remains a growing problem for high-income countries like Australia
- We found that sepsis affects young children, people living in very remote areas, and First Nations people more than others
- This is the first national report on hospitalisations and in-hospital deaths associated with sepsis in all Australian public hospitals

BACKGROUND

- ▶ Sepsis is responsible for 20% of all global deaths annually¹ and remains one of the deadliest conditions in the world²
- ▶ World Health Organization declared that sepsis is a global health priority in 2017³
- ▶ A significant proportion of hospital and intensive care unit (ICU) admissions is due to sepsis⁴

AIM

- ▶ To determine the incidence and mortality of sepsis in Australian public hospitals and investigate variations over time

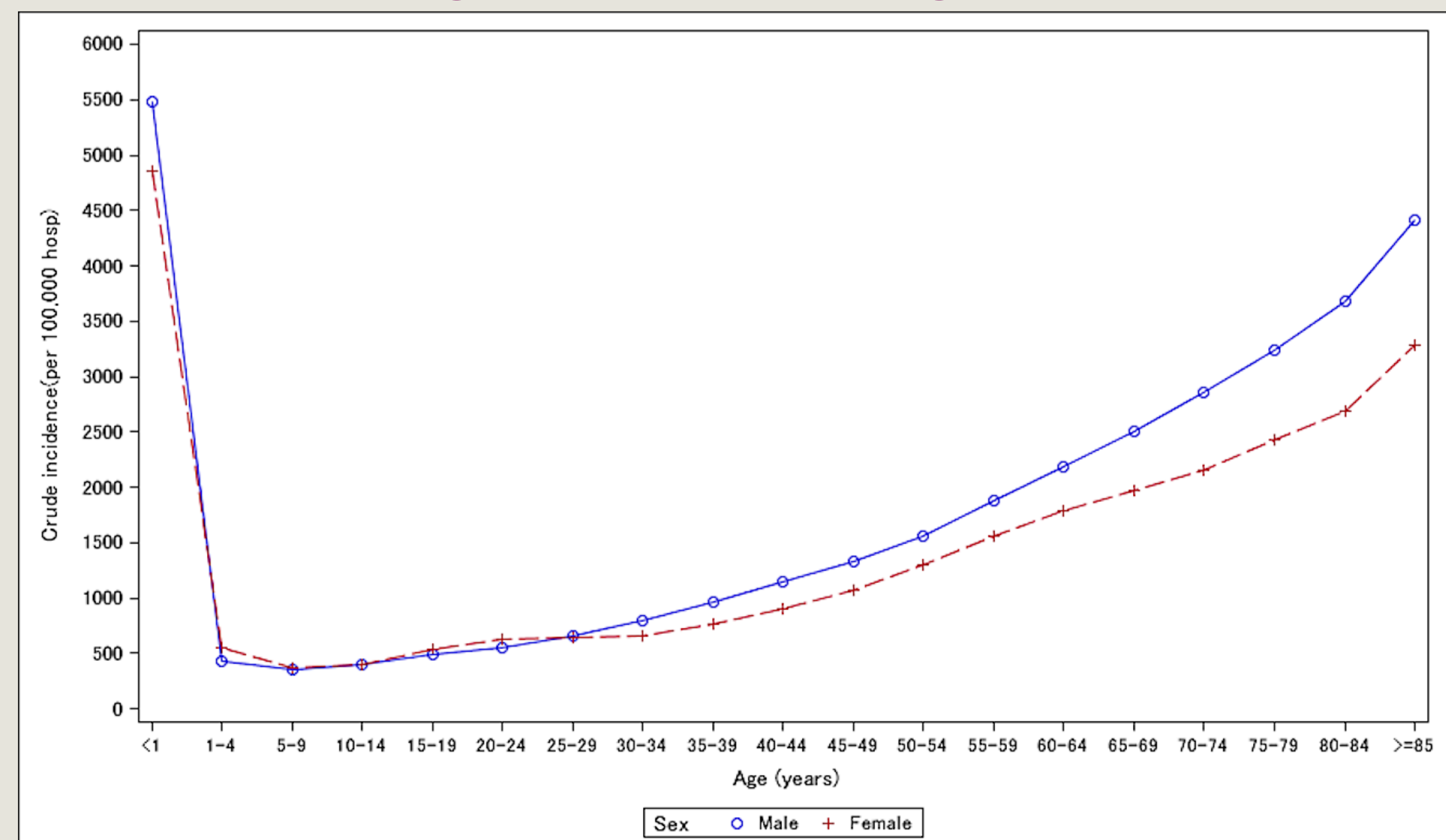
METHODS

- ▶ Patients admitted to any Australian public hospital between 2013 – 2018 were included
- ▶ Sepsis patients were identified based on the recorded diagnosis codes
- ▶ Age standardised sepsis incidence rates were calculated
- ▶ Generalised estimating equations were applied to examine changes in mortality rates over time

RESULTS

- ▶ Of 23,827,061 hospitalisations from 739 hospitals, 437,354 had a coded diagnosis of sepsis over 5 years
 - 87,470 sepsis cases per year
 - 12.0% of these patients (n = 52,297) died in hospital
 - 11 times more likely to die in hospital than other patients
 - Stayed 7 times longer than non-sepsis patients
- ▶ Overall age standardised sepsis incidence was 1,162.8 cases/100,000 population (95% CI: 1158.4 – 1167.0)
- ▶ Males were 19% more likely to have sepsis than females (Rate ratio: 1.19, 95% CI: 1.18 – 1.20)

The Oldest and Youngest Patients had the Highest Incidence of Sepsis



Age specific sepsis incidence by sex

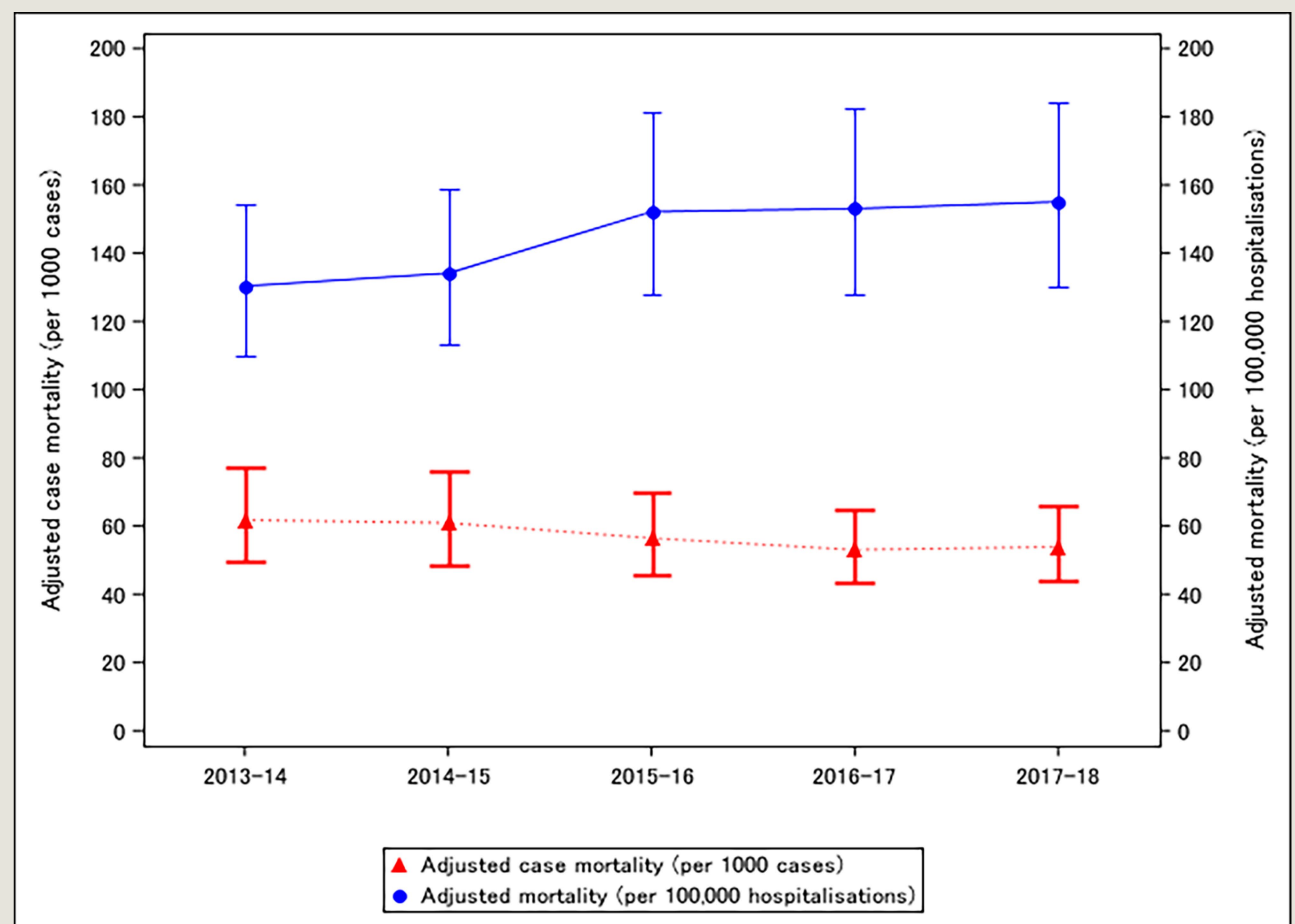
RESULTS CONTINUED

- ▶ Age standardised incidence rates per 100,000 population for:
 - Patients in very remote areas was 1,995.1 (95% CI: 1,947.3 – 2,042.9) and 1,157.8 for patients in major cities (95% CI: 1,152.4 – 1,163.3).
 - First Nations patients was 1,878.4 (95% CI: 1,852.5 – 1,904.3) and 1,119.5 for other Australians (95% CI: 1,115.0 – 1,123.9)
 - Septic shock was 162.9 (95% CI: 161.2 – 164.5) and 999.9 for all other sepsis (95% CI: 995.8 – 1,004.0)

The Age Standardised Incidence Increased by 27%,
an Average Annual Increase of 7%

Year	Number of Sepsis Cases	Age Standardised Incidence/100,000 Population (95% CI)
2013-2014	66,062	994.1 (984.5 – 1,003.8)
2014-2015	70,383	1,007.3 (997.7 – 1,016.8)
2015-2016	93,527	1,246.2 (1,236.0 – 1,256.4)
2016-2017	102,470	1,272.2 (1,262.2 – 1,282.1)
2017-2018	104,912	1,260.5 (1,250.8 – 1,270.3)

Sepsis Mortality Rates Remained Relatively Stable After Adjusting for Risk Factors and Hospital Clustering



CONCLUSIONS

- ▶ This first Australian nationwide study of sepsis hospitalisations demonstrated that sepsis remains a significant healthcare problem
- ▶ Findings provide grounds for further investigation into the health burden and financial cost of sepsis on individuals, the community and health system

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