

Access matters: Lack of resources is associated with increased mortality in childhood cancer survivors

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Matthew J. Ehrhardt, MD, MS, and Melissa M. Hudson, MD. Credit: St. Jude Children's Research Hospital

St. Jude Children's Research Hospital scientists have found that

socioeconomic deprivation, the presence of treatable chronic health conditions and frailty are independently associated with increased late mortality in childhood cancer survivors. The work utilized the well-characterized group of survivors, the St. Jude lifetime cohort study ([St. Jude LIFE](#)).

The research shows that treating [chronic health conditions](#) alone may be inadequate to improve survivors' lifespans without policies to improve local environments. The findings were published today in *JAMA Network Open*.

"The new discovery was the relationship between social determinants of health at the regional level and increased mortality," said corresponding author Matthew Ehrhardt, M.D., M.S., St. Jude Department of Oncology. "Living in Census blocks with high deprivation was associated with increased [mortality rates](#) for [childhood cancer survivors](#)."

A double whammy for survivors

Scientists found the association between increased mortality and resource deprivation using the area deprivation index (ADI). ADI measures housing quality, education level, employment status and poverty to a Census block level (~600–1,000 people). They found that survivors living in the most resource-deprived places, as measured by ADI, had a five-to-eight times increased risk of mortality compared to those in the places with the least deprivation.

Modifiable chronic health conditions are those that have effective treatments. They are graded in increasing severity from 1 to 4. Even though treatments for these modifiable chronic health conditions exist they can be difficult to access, and survivors still experienced a two-to-four-fold increase in mortality compared to community controls.

"We found that having both a greater number of modifiable chronic health conditions and conditions of higher severity was associated with a higher risk of mortality in survivors," Ehrhardt said.

Increases in mortality associated with poor local socioeconomic conditions was statistically independent from the risk associated with chronic health conditions. That means that living in an impoverished area and having untreated chronic health conditions, especially severe ones, may combine to form an unfortunate "double whammy" to a survivor's risk of increased mortality.

Clues for how to help survivors

The association with modifiable chronic health conditions emphasizes the importance of efforts to ensure access to interventions that may improve these health conditions and subsequently reduce mortality risk. Separately, the association with local measures of poverty suggests that the local environment impacts mortality beyond lack of access to specific treatments.

"The biggest take-home is that when we develop interventions, we need to account for not only the intervention itself, but the supporting factors that help with the delivery and effectiveness of the intervention," Ehrhardt said. "And in this case, we show some evidence that those [environmental factors](#) included in the ADI are important contributors to risk that need to be considered."

The study also has a direct implication for [clinical care](#)—especially how clinicians interact with patients.

"It is important for clinicians to ask patients about their specific situation," Ehrhardt said. "It's easy to prescribe medications or to tell people to exercise. It takes more time and more thoughtfulness to sit and

understand environments in which they are residing. As clinicians, we may have limited ability to modify some of those factors. But we can work closely with the rest of the health care team, such as social workers, for example, to help survivors to identify and access local resources."

More information: Association of Modifiable Health Conditions and Social Determinants of Health With Late Mortality in Survivors of Childhood Cancer, *JAMA Network Open* (2023). [DOI: 10.1001/jamanetworkopen.2022.55395](https://doi.org/10.1001/jamanetworkopen.2022.55395)

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