

IHPI BRIEF: WHAT YOU NEED SEPSIS



WHAT IS SEPSIS?

Sepsis is a life-threatening, extreme immune response to infection. Without early detection and appropriate treatment, sepsis can rapidly lead to tissue damage, organ failure, and death. More than 1 million Americans develop sepsis each year, and 250,000 will die. Sepsis most often occurs in people over the age of 65, infants less than one year of age, and those who have other chronic diseases or weakened immune systems. It is also one of the most expensive conditions to treat in U.S. hospitals.

TAKEAWAYS FROM OUR RESEARCH ON SEPSIS

SEPSIS IS A MAJOR PUBLIC **HEALTH CONCERN**



Sepsis remains significantly underrecognized, and contributes to 1/3 of all deaths in hospitals.



Complications and rehospitalizations among sepsis patients are common.



Sepsis causes cognitive impairment and/or disability in 3 out of 5 older survivors.

OUR EVIDENCE SHOWS HOW TO IMPROVE SEPSIS CARE ACROSS THE DELIVERY SYSTEM



More rapid sepsis identification and treatment saves lives.



Better follow-up care is needed to improve outcomes and prevent rehospitalizations.



More intensive sepsis treatment in intensive care units (ICUs) can save lives without increased costs.



Post-ICU clinics and peer support can help patients and families recover from sepsis.



Requirements for hospitals to adopt evidence-based sepsis response plans (such as New York's "Rory's Regulations") have contributed to reduced deaths from sepsis, lengths of stay, and average time to treatment.

EVIDENCE-BASED

treatment of sepsis.

POLICIES ARE NEEDED TO

Our research indicates that states

should consider reforms such as

protocols for early diagnosis and

New York's "Rory's Regulations" to support hospitals in developing

IMPROVE SEPSIS CARE

Hospital response plans should:

- Develop ways that work for their hospital to promptly identify patients with sepsis and quickly deliver antibiotics, and, as appropriate, intravenous fluids.
- Distinguish patients for whom standard therapy should be customized.
- Ensure post-discharge support and follow-up care.
- Use the CDC-recommended definition of sepsis for benchmarking and ongoing quality improvement.



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SEPSIS CARE STUDIES BY IHPI MEMBERS:

Mortality changes associated with mandated public reporting for sepsis: the results of the New York state initiative.

Levy MM, Gesten FC, Phillips GS, Terry KM, Seymour CW, Prescott HC, Friedrich M, IwashynaTJ, OsbornT, Lemeshow S.

Am J Respir Crit Care Med. 2018 Sep 7. PMID: 30189749 doi:10.1164/rccm.201712-2545OC

Reporting of sepsis cases for performance measurement versus for reimbursement in New York state.

Prescott HC, CopeTM, Gesten FC, Ledneva TA, Friedrich ME, IwashynaTJ, OsbornTM, Seymour CW, Levy MM.

Crit Care Med. 2018 May;46(5):666-673. PMID: 29406420 doi:10.1097/CCM.000000000003005

Enhancing recovery from sepsis: a review. Prescott HC, Angus DC.

JAMA. 2018 Jan 2;319(1):62-75. PMID: 29297082 doi:10.1001/jama.2017.17687

Postsepsis morbidity.

Prescott HC, Angus DC.

JAMA. 2018 Jan 2;319(1):91. PMID: 29297079 doi:10.1001/jama.2017.19809

Increased healthcare facility use in veterans surviving sepsis hospitalization.

DeMerle KM, Vincent BM, Iwashyna TJ, Prescott HC.

J Crit Care. 2017 Dec;42:59-64. PMID: 28688238 doi:10.1016/j.jcrc.2017.06.026

Incidence and trends of sepsis in US hospitals using clinical vs claims data, 2009-2014.

Rhee C, Dantes R, Epstein L, Murphy DJ, Seymour CW, Iwashyna TJ, Kadri SS, Angus DC, Danner RL, Fiore AE, Jernigan JA, Martin GS, Septimus E, Warren DK, Karcz A, Chan C, Menchaca JT, Wang R, Gruber S, Klompas M; CDC Prevention Epicenter Program.

JAMA. 2017 Oct 3;318(13):1241-9. PMID: 28903154 doi:10.1001/jama.2017.13836

Time to treatment and mortality during mandated emergency care for sepsis.

Seymour CW, Gesten F, Prescott HC, Friedrich ME, IwashynaTJ, Phillips GS, Lemeshow S, Osborn T, Terry KM, Levy MM.

N Engl J Med. 2017 Jun 8;376(23):2235-44. PMID: 28528569 doi:10.1056/NEJMoa1703058

Late mortality after sepsis: propensity matched cohort study.

Prescott HC, Osterholzer JJ, Langa KM, Angus DC, Iwashyna TJ.

BMJ. 2016 May 17;353:i2375. PMID: 27189000 doi:/10.1136/bmj.i2375

Peer support as a novel strategy to mitigate post-intensive care syndrome.

Mikkelsen ME, Jackson JC, Hopkins RO, Thompson C, Andrews A, Netzer G, Bates DM, Bunnell AE, Christie LM, Greenberg SB, Lamas DJ, Sevin CM, Weinhouse G, IwashynaTJ.

AACN Adv Crit Care. 2016 Apr-Jun;27(2):221-9. PMID: 27153311 doi:10.4037/aacnacc2016667

Variation in the contents of sepsis bundles and quality measures: A systematic review. Kramer RD, Cooke CR, Liu V, Miller RR 3rd, lwashynaTJ.

Ann Am Thorac Soc. 2015 Nov;12(11):1676-84. PMID: 26397842

doi:10.1513/AnnalsATS.201503-163BC

Association of intensive care unit admission with mortality among older patients with pneumonia.

ValleyTS, Sjoding MW, Ryan AM, Iwashyna TJ, Cooke CR.

JAMA. 2015 Sep 22-29;314(12):1272-9. PMID: 26393850 doi:10.1001/jama.2015.11068

Readmission diagnoses after hospitalization for severe sepsis and other acute medical conditions.

Prescott HC, Langa KM, Iwashyna TJ.

JAMA. 2015 Mar 10;313(10):1055-7. PMID: 25756444 doi:10.1001/jama.2015.1410

Sepsis mandates: improving inpatient care while advancing quality improvement.

Cooke CR, Iwashyna TJ.

JAMA. 2014 Oct 8;312(14):1397-8. PMID: 25291572 doi:10.1001/jama.2014.11350

Hospital deaths in patients with sepsis from 2 independent cohorts.

Liu V, Escobar GJ, Greene JD, Soule J, Whippy A, Angus DC, Iwashyna TJ.

JAMA. 2014 Jul 2;312(1):90-2. PMID: 24838355 doi:10.1001/jama.2014.5804

Increased 1-year healthcare use in survivors of severe sepsis.

Prescott HC, Langa KM, Liu V, Escobar GJ, IwashynaTJ.

Am J Respir Crit Care Med. 2014 Jul 1; 190(1):62-9. PMID: 24872085 doi:10.1164/rccm.201403-0471OC

Long-term cognitive impairment and functional disability among survivors of severe sepsis.

IwashynaTJ, Ely EW, Smith DM, Langa KM.

JAMA. 2010 Oct 27;304(16):1787-94. PMID: 20978258 doi:10.1001/jama.2010.1553

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