LIFE AFTER SEPSIS

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Outline

Characterize Sepsis Survivors

Describe short and long term recovery

Identify Resources

CHARACTERIZE SEPSIS SURVIVORS

The NEW ENGLAND JOURNAL of MEDICINE

REVIEW ARTICLE

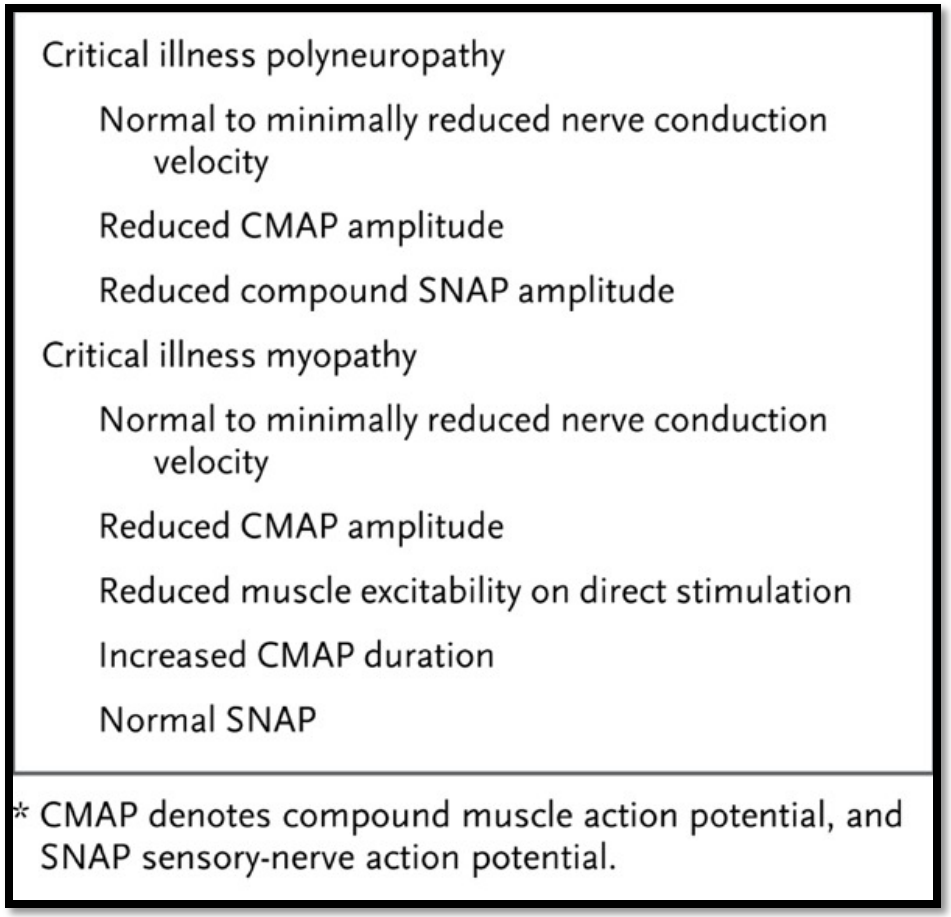
CRITICAL CARE MEDICINE

ICU-Acquired Weakness and Recovery from Critical Illness

John P. Kress, M.D., and Jesse B. Hall, M.D.

N Engl J Med 2014;370:1626-35.

Electrophysiological Features of ICU-Acquired Weakness



Critical illness polyneuropathy
Normal to minimally reduced nerve conduction velocity
Reduced CMAP amplitude
Reduced compound SNAP amplitude
Critical illness myopathy
Normal to minimally reduced nerve conduction velocity
Reduced CMAP amplitude
Reduced muscle excitability on direct stimulation
Increased CMAP duration
Normal SNAP

* CMAP denotes compound muscle action potential, and SNAP sensory-nerve action potential.

N Engl J Med 2014;370:1626-35. DOI: 10.1056/NEJMra1209390

Neuromuscular weakness is common

- 25% of patients receiving prolonged mechanical ventilation develop ICU-acquired weakness (ICU-AW)
- Duration of mechanical ventilation is associated with increased mortality.
- Functional impairments can persist for years after discharge.

De Jonghe et al. JAMA 2002;288(22);2859-2867; Fan E et al. Am J Respir Crit Care Med. 2014;190(12)1437-1446. Jolley SE et al. Chest. 2016;150(5);1129-1140.

Impact of Vasoactive Medications on ICU-Acquired Weakness in Mechanically Ventilated Patients

Krysta S. Wolfe, MD; Bhakti K. Patel, MD; Erica L. MacKenzie, MD; Shewit P. Giovanni, MD; Anne S. Pohlman, MSN; Matthew M. Churpek, MD, MPH, PhD; Jesse B. Hall, MD; and John P. Kress, MD

- Secondary analysis of 172 mechanically ventilated patients enrolled in a RCT of early occupational and physical therapy vs conventional therapy, which evaluated the end point of ICU-acquired weakness on hospital discharge.

- Patients underwent bedside muscle strength testing by a therapist blinded to study allocation to evaluate for ICU-acquired weakness.

Wolfe, KS. et al. Chest 2018

Univariable Analysis of Baseline & Outcome Characteristics

Variable	ICU-AW (N = 80)	No ICU-AW (N = 92)	*P* Value
Baseline characteristics			
Age, y	61 (49-72)	50 (31-64)	.0002
Female, No. (%)	41 (51.3%)	45 (48.9%)	.76
BMI, kg/m^2	28.1 (23.7-34.4)	27.5 (24.4-33.5)	.96
APACHE II	24 (20-30)	17 (13-22)	< .0001
Sepsis	66 (82.5%)	60 (65.2%)	.01
Diabetes	24 (30%)	26 (28.3%)	.8
Outcome characteristics			
Early mobility	33 (41.3%)	50 (54.4%)	.09
Ventilator use, d	5 (2.8-8.3)	2.9 (1.7-4.6)	< .0001
Hospital length of stay, d	17.1 (9-27.9)	10.6 (6.7-15.9)	.0001
ΔSOFA (0-48 h)	0 (−2 to 2)	0 (−2 to 1)	.24
MRC score on hospital discharge	34.5 (0-43.5)	56 (51-59)	< .0001
Mean arterial pressure[a]	79 (73-87)	86 (79-93)	.0008
Median glucose[b]	135 (116-152)	125 (113-142)	.11
Medications received			
No. (%) receiving corticosteroids in ICU	55 (68.8%)	62 (67.4%)	.85
No. (%) receiving neuromuscular blocker	5 (6.25%)	3 (3.3%)	.35
No. (%) receiving vasopressors	59 (73.8%)	31 (33.7%)	< .0001
No. (%) receiving multiple vasopressors	45 (56.3%)	17 (18.5%)	< .0001

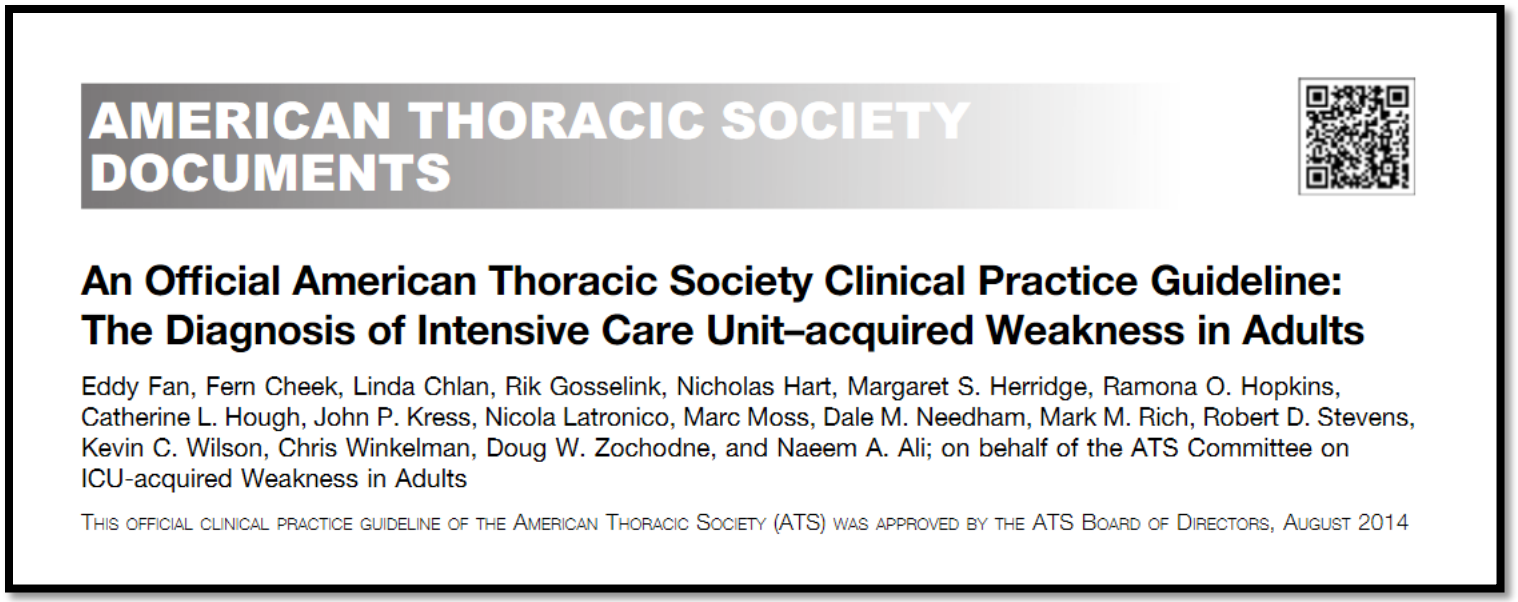
Multivariable Analysis of ICU-Acquired Weakness

TABLE 2] Multivariable Analysis of ICU-Acquired Weakness

Variable	OR	95% CI	*P* Value
Vasoactive medication	3.2	1.29-7.95	.01
APACHE II	1.08	1.01-1.15	.02
Sepsis	0.91	0.32-2.62	.85
Hospital length of stay, d	1.05	1.01-1.08	.009
Age, y	1.03	1.0-1.05	.03
Ventilator use, d	1.07	0.98-1.16	.15
Early mobilization	0.38	0.17-0.85	.02
Mean arterial pressure[a]	0.97	0.92-1.02	.21
Study group	0.34	0.14-0.8	.01

For every day that a patient received a vasoactive medication the odds of developing ICU-AW

increased 35%.



Pooled analysis from 7 studies recruiting patients with severe sepsis found the incidence of significant weakness was significantly higher than observed in studies of other patient groups.

In 4 prospective studies the prevalence of sepsis at any time during their presentation was no different whether they developed weakness or not.

Am J Resp and Crit Care Med. 2014;190(12)

Table 1. Recommendation to Aid in Decisions Regarding Diagnostic Testing for Intensive Care Unit–acquired Weakness

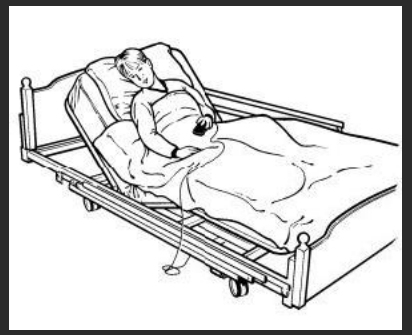
Recommendation	Remarks	Values and Preferences
1. We recommend well-designed, adequately powered and executed randomized controlled trials comparing physical rehabilitation or other alternative treatments with usual care in patients with ICUAW that measure and report patient-important outcomes. (strong recommendation, very low-quality evidence) 2. We recommend clinical research to determine the role of prior patient disability in the development of and recovery from ICUAW. (strong recommendation, very low-quality evidence) 3. We recommend clinical research that determines whether or not patients would want to know if they have ICUAW even though no specific therapy currently exists and how patient preferences influence medical decision making or the perception of prognosis. (strong recommendation, very low-quality evidence)	The recommendations are strong because the guideline development committee is certain that additional research is necessary to prove whether physical rehabilitation or other interventions improve outcomes in patients with ICUAW, and such evidence is necessary before deciding whether or not routine diagnostic testing for ICUAW is indicated.	These recommendations place a higher value on avoiding potentially burdensome diagnostic testing if it will not lead to improved outcomes and a lower value on an uncertain improvement in the rate of discharges home rather than to a rehabilitative facility.

Definition of abbreviation: ICUAW = intensive care unit–acquired weakness.

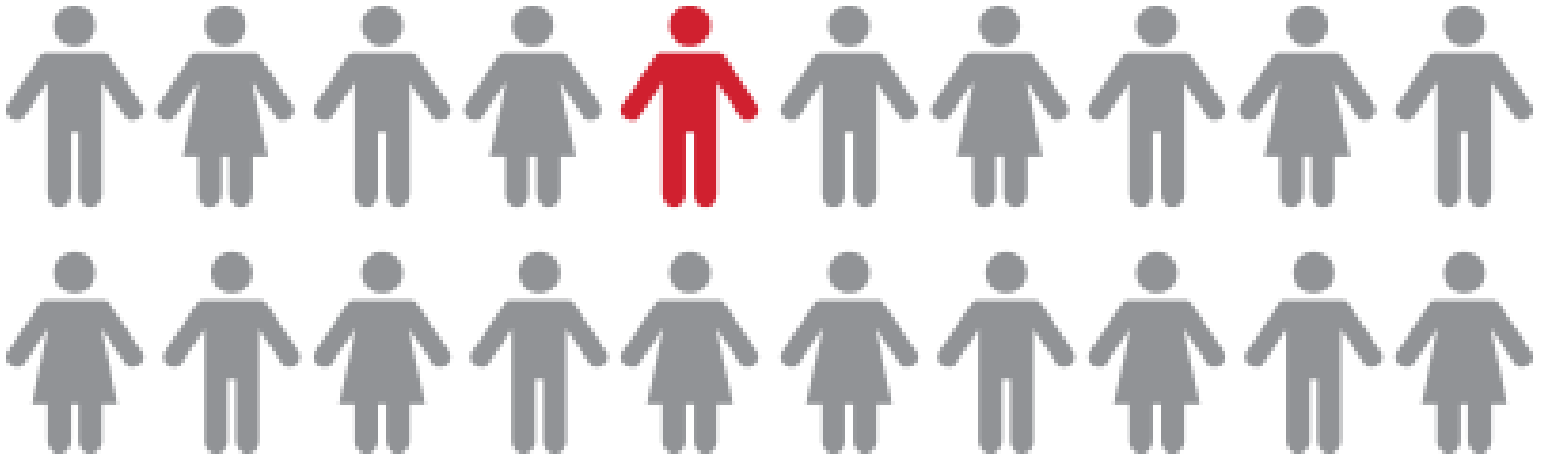
Additional well-designed research is needed

Am J Resp and Crit Care Med. 2014;190(12

SHORT AND LONG TERM RECOVERY IN SEPSIS SURVIVORS



Unplanned Readmission Within 7 days



1 in 20

(Median 6.6 days)

Donnelly, J. P., Hohmann, S. F., & Wang, H. E. (2015). Unplanned readmissions after hospitalization for severe sepsis at academic medical Center–Affiliated hospitals. *Critical Care Medicine, 43*(9), 1916-1927. doi:10.1097/CCM.0000000000001147

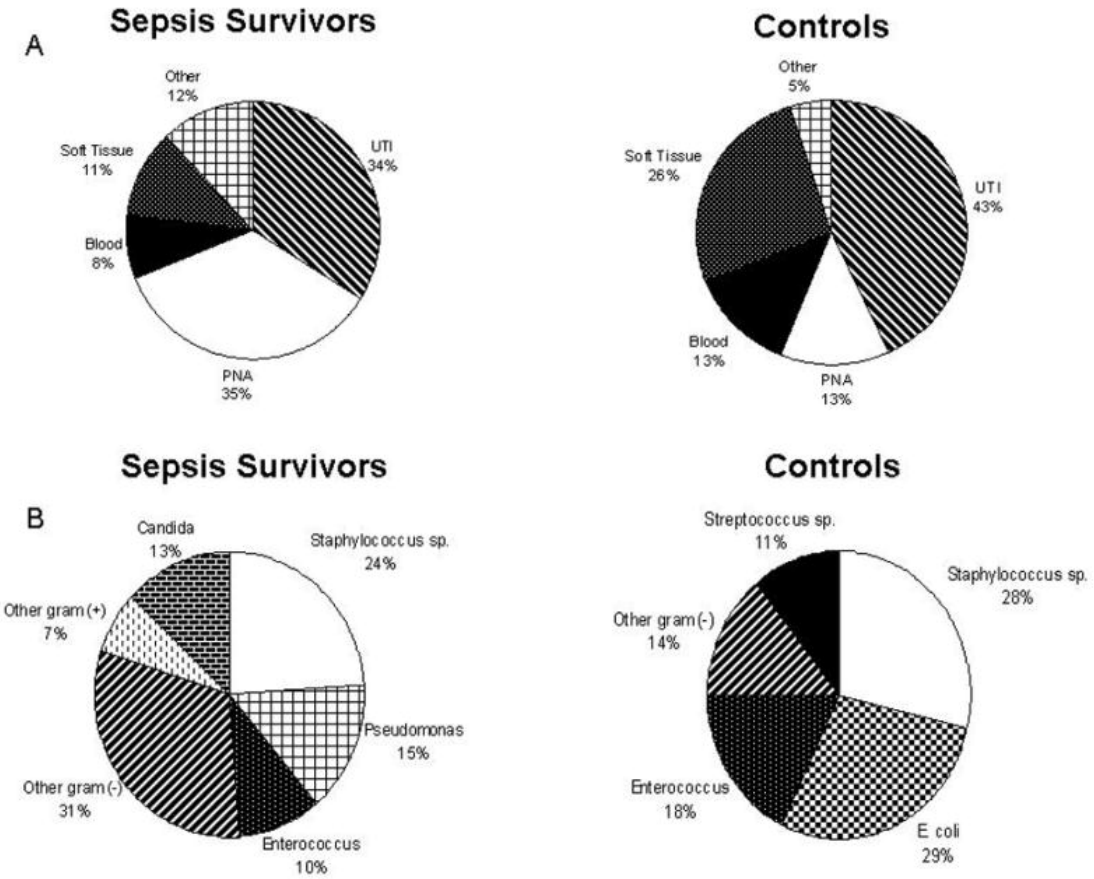
Characteristics

- Most common infections were urinary tract and respiratory
- Most common organ dysfunction respiratory, cardiovascular and renal

Severe sepsis patients readmitted within 30 days (median 19.3).

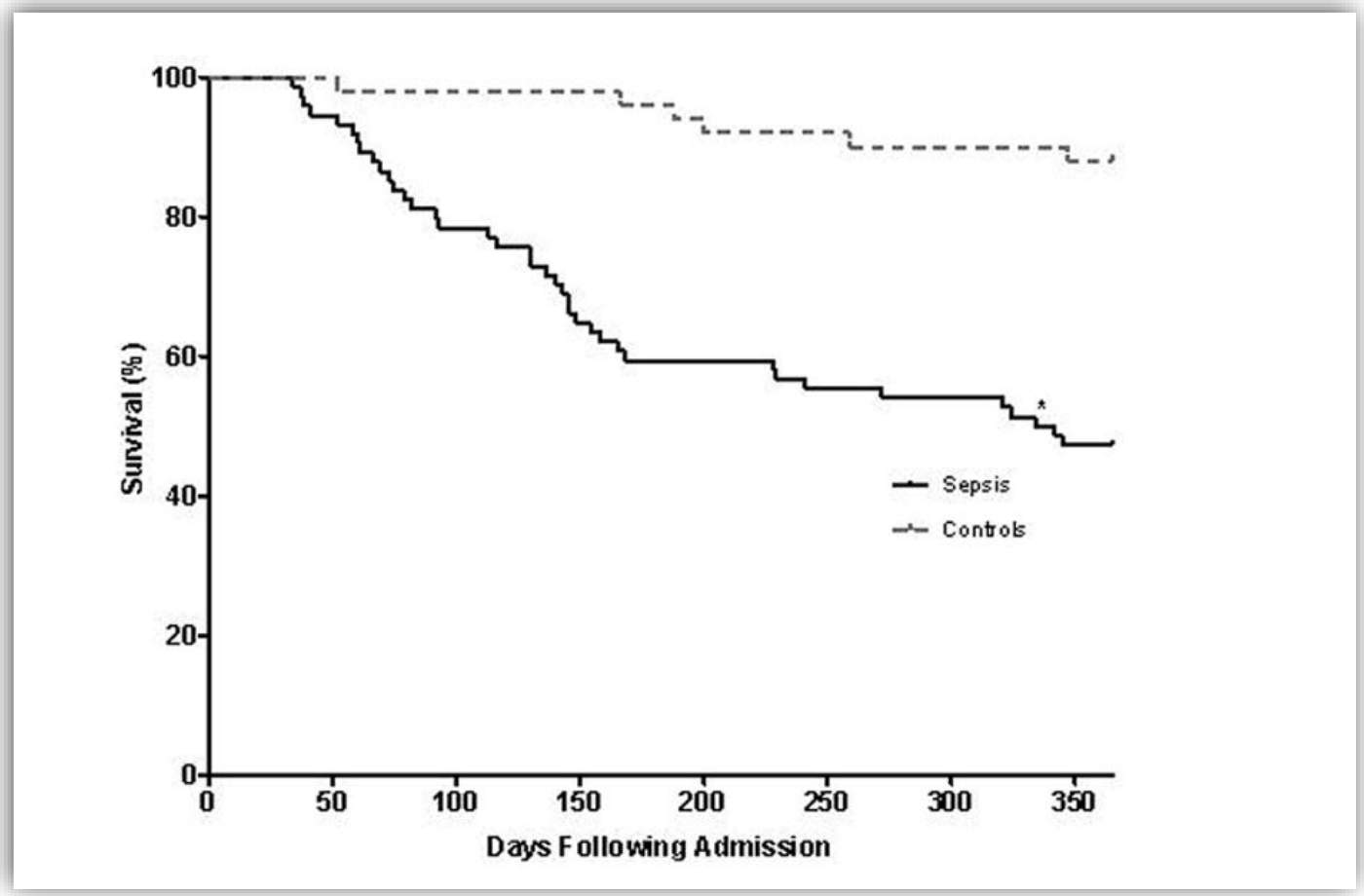
Donnelly, J. P., Hohmann, S. F., & Wang, H. E. (2015). Unplanned readmissions after hospitalization for severe sepsis at academic medical Center–Affiliated hospitals. *Critical Care Medicine, 43*(9), 1916-1927. doi:10.1097/CCM.0000000000001147

Recurrent Sites of Infection and Microorganisms Implicated



Wang et al. J Intensive Care Med. 2014 Mar-Apr; 29(2): 87–95.

One-year Survival - Sepsis vs Controls



Factors Associated with Readmission

Variables	Cohort n=444	No Readmission n=340	Readmission n=104	P
Sepsis- POA- present on admission	320 (72.1)	249 (73.2)	71 (68.3)	0.04
Any transfusion	211 (47.5)	150 (44.1)	61 (58.6)	0.009
Total parenteral nutrition use	48 (10.8)	26 (7.6)	22 (21.2)	< 0.001
Duration of antibiotics	9 (5–15)	8 (5–14)	12 (6–18)	< 0.001

Patient characteristics: Average age 59 years old, 50% women, 64% admitted through emergency department, and 50% were admitted to the hospital in the past year. Pneumonia was the most common infection source.

Sun, A., Netzer, G., Small, D. S., Hanish, A., Fuchs, B. D., Gaieski, D. F., & Mikkelsen, M. E. (2016). Association between index hospitalization and hospital readmission in sepsis survivors. *Critical Care Medicine, 44*(3), 478-487. doi:10.1097/CCM.0000000000001464

Table. Length of Stay and Cost for Unplanned 30-Day Readmissions After an Index Admission for Sepsis, Acute Myocardial Infarction, Heart Failure, Pneumonia, and Chronic Obstructive Pulmonary Disease

	National Readmission Data[a]		$$$	Weighted Proportion of Cases in the United States	
	No. of All Index Admissions Readmitted Within 30 Days	Estimated Mean Length of Stay (95% CI), d[b]	Estimated Mean Cost per Readmission (95% CI), $[b]	Percentage of Index Admissions Readmitted Within 30 Days (95% CI)	Percentage of Total Estimated Cost of All Readmissions (95% CI)
Admissions associated with 30 d readmission	1 187 697	6.4 (6.4-6.5)	8242 (8225-8258)	NA	100.0
Primary Analyses[c]					
Sepsis	147 084	7.4 (7.3-7.4)	10 070 (10 021-10 119)	12.2 (11.9-12.4)	14.5 (14.2-14.8)
Acute myocardial infarction	15 001	5.7 (5.6-5.8)	9424 (9279-9571)	1.2 (1.2-1.3)	1.4 (1.3-1.5)
Heart failure	79 480	6.4 (6.4-6.5)	9051 (8990-9113)	6.7 (6.5-6.8)	7.5 (7.3-7.7)
Pneumonia	59 378	6.7 (6.6-6.7)	9533 (9466-9600)	5.2 (5.0-5.3)	5.5 (5.4-5.7)
Chronic obstructive pulmonary disease	54 396	6.0 (5.9-6.0)	8417 (8355-8480)	4.6 (4.5-4.8)	4.3 (4.1-4.4)
Sensitivity Analyses[d]					
Sepsis	89 800	7.6 (7.6-7.7)	10 828 (10 760-10 897)	7.3 (7.1-7.5)	9.1 (8.8-9.4)
Acute myocardial infarction	21 281	6.0 (5.9-6.1)	9530 (9408-9654)	1.8 (1.7-1.8)	2.0 (1.9-2.1)
Heart failure	236 636	6.5 (6.5-6.5)	9248 (9211-9285)	20.0 (19.6-20.4)	22.1 (21.6-22.6)
Pneumonia	130 904	6.9 (6.9-7.0)	9749 (9700-9797)	11.1 (10.9-11.4)	12.5 (12.2-12.8)
Chronic obstructive pulmonary disease	201 867	6.3 (6.3-6.4)	8677 (8641-8713)	17.4 (17-17.7)	17.2 (16.7-17.7)

Mayr, F. B., Talisa, V. B., Balakumar, V., Chang, C. H., Fine, M., & Yende, S. (2017). Proportion and cost of unplanned 30-day readmissions after sepsis compared with other medical conditions. *Journal of the American Medical Association, 317*(5), 530. doi:10.1001/jama.2016.20468

ORIGINAL ARTICLE

Increased 1-Year Healthcare Use in Survivors of Severe Sepsis

Hallie C. Prescott[1], Kenneth M. Langa[1,2,3], Vincent Liu[4], Gabriel J. Escobar[4], and Theodore J. Iwashyna[1,2,3]

[1]Department of Medicine, University of Michigan, Ann Arbor, Michigan; [2]VA Center for Clinical Management Research, HSR&D Center for Excellence, Ann Arbor, Michigan; [3]Institute for Social Research, Ann Arbor, Michigan; and [4]Kaiser Permanente Division of Research, Oakland, California

Abstract

Rationale: Hospitalizations for severe sepsis are common, and a growing number of patients survive to hospital discharge. Nonetheless, little is known about survivors' post-discharge healthcare use.

Objectives: To measure inpatient healthcare use of severe sepsis survivors compared with patients' own presepsis resource use and the resource use of survivors of otherwise similar nonsepsis hospitalizations.

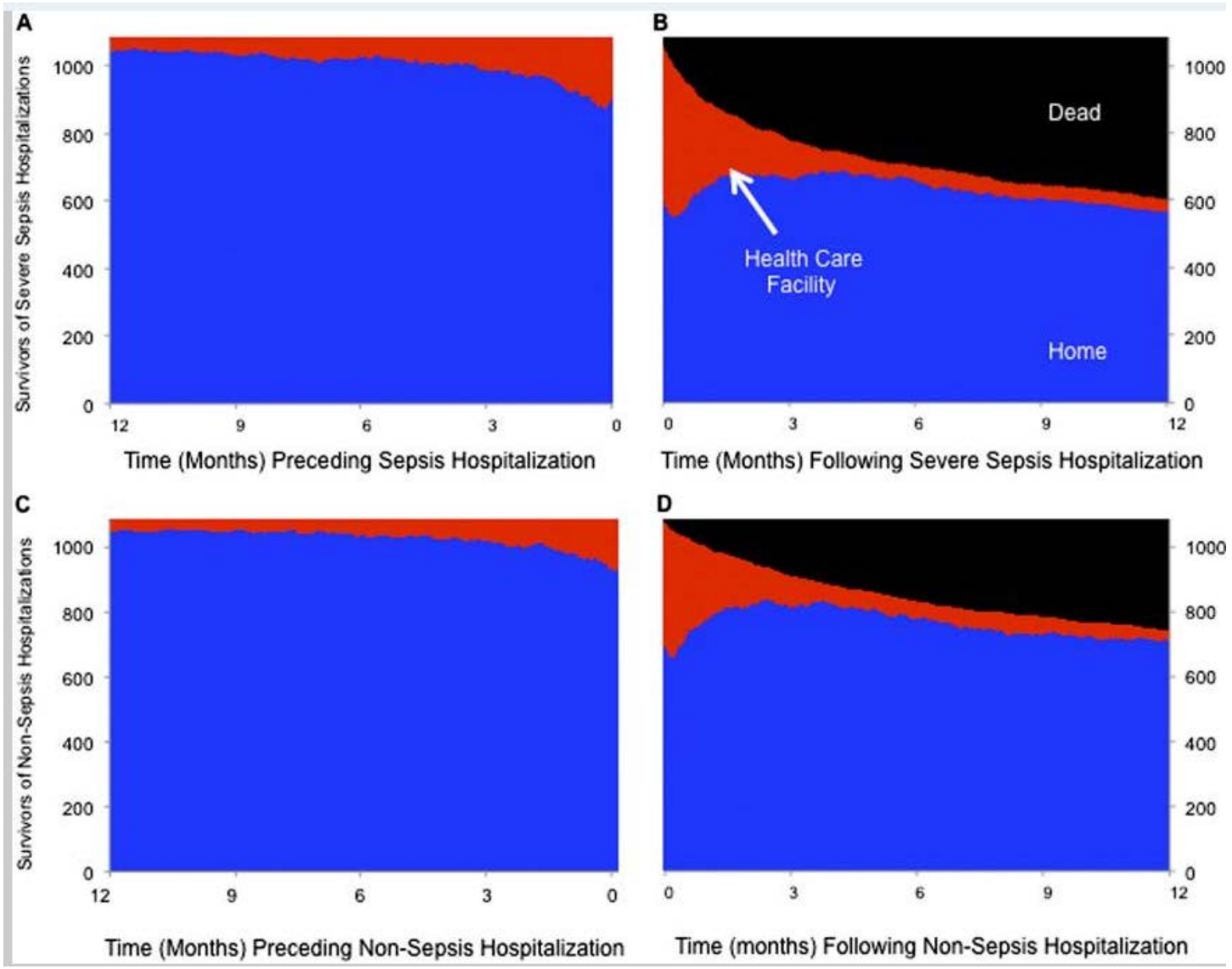
Methods: This is an observational cohort study of survivors of severe sepsis and nonsepsis hospitalizations identified from participants in the Health and Retirement Study with linked Medicare claims, 1998–2005. We matched severe sepsis and nonsepsis hospitalizations by demographics, comorbidity burden, premorbid disability, hospitalization length, and intensive care use.

Measurements and Main Results: Using Medicare claims, we measured patients' use of inpatient facilities (hospitals, long-term acute care hospitals, and skilled nursing facilities) in the 2 years surrounding hospitalization. Severe sepsis survivors spent more days (median, 16 [interquartile range, 3–45] vs. 7 [0–29]; $P < 0.001$) and a higher proportion of days alive (median, 9.6% [interquartile range, 1.4–33.8%] vs. 1.9% [0.0–7.9%]; $P < 0.001$) admitted to facilities in the year after hospitalization, compared with the year prior. The increase in facility-days was similar for nonsepsis hospitalizations. However, the severe sepsis cohort experienced greater post-discharge mortality (44.2% [95% confidence interval, 41.3–47.2%] vs. 31.4% [95% confidence interval, 28.6–34.2%] at 1 year), a steeper decline in days spent at home (difference-in-differences, −38.6 d [95% confidence interval, −50.9 to 26.3]; $P < 0.001$), and a greater increase in the proportion of days alive spent in a facility (difference-in-differences, 5.4% [95% confidence interval, 2.8–8.1%]; $P < 0.001$).

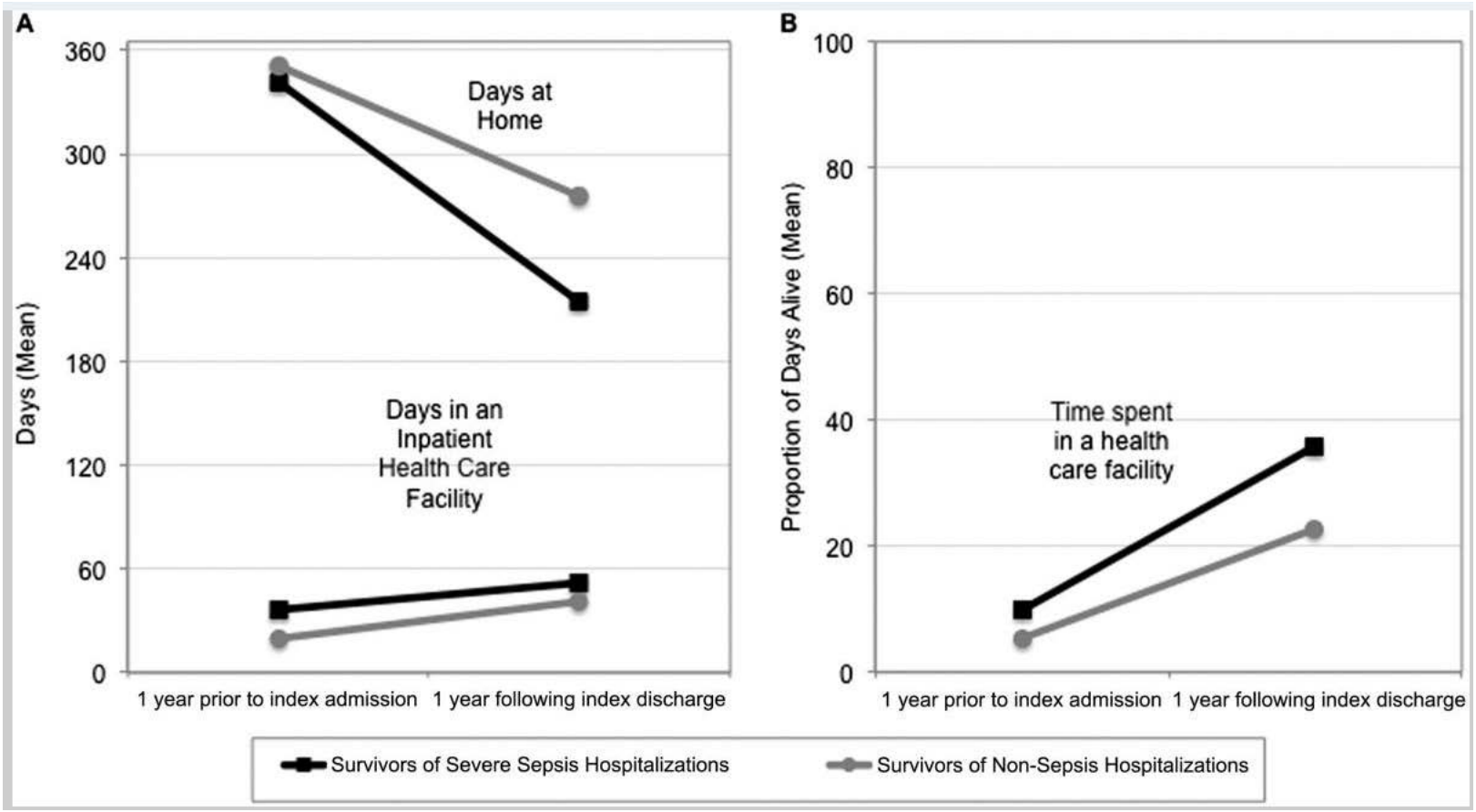
Conclusions: Healthcare use is markedly elevated after severe sepsis, and post-discharge management may be an opportunity to reduce resource use.

Keywords: patient outcomes assessment; hospitalization; patient readmission; skilled nursing facility; healthcare facilities

Am J Respir Crit Care Med. 2014 Jul 1; 190(1): 62–69.



Prescott HC et al. Am J Respir Crit Care Med. 2014 Jul 1; 190(1): 62–69.



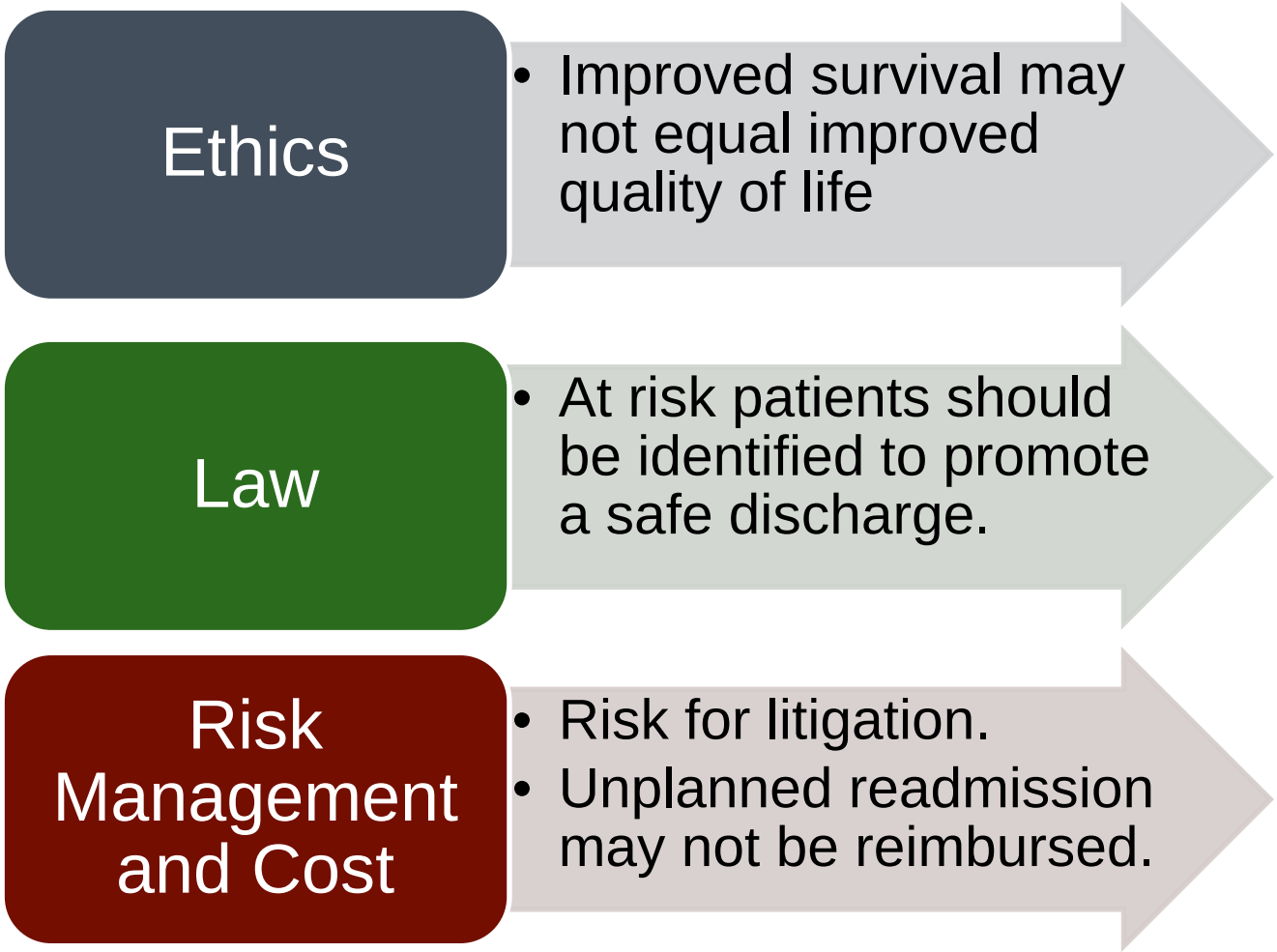
Prescott et al. Am J Respir Crit Care Med. 2014 Jul 1; 190(1): 62–69.

Sepsis survivors often have long-term sequelae

- Readmissions after sepsis more likely to result in death or hospice care.
- Coordinated care between the hospital, patient and providers has been successful in other diseases.

Donnelly, J (2015). *Critical Care Medicine, 43*(9), 1916-1927.
Jones. (2015). *Annals of the American Thoracic Society*, *12*(6), 904-913.

Ethical and Legal Issues



(CMS, 2014, CMS, 2015)

To Your Health

The Washington Post

A father went to the hospital with stomach pain. He left without his hands and feet.[6]

Holley, P. Father went to the hospital with stomach pain-he left without his hands and feet. Washington Post. March 18, 2017. Retrieved from https://www.washingtonpost.com/news/to-your-health/wp/2017/03/18/a-father-went-to-the-hospital-with-stomach-pain-he-left-without-his-hands-and-feet/?utm_term=.2834bb00f45c

Published in final edited form as:
JAMA. 2010 October 27; 304(16): 1787–1794. doi:10.1001/jama.2010.1553.

Long-term Cognitive Impairment and Functional Disability Among Survivors of Severe Sepsis

Theodore J. Iwashyna, MD, PhD[1], **E. Wesley Ely, MD, MPH**[2], **Dylan M. Smith, PhD**[3], and **Kenneth M. Langa, MD, PhD**[1,4,5]

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[2]Department of Medicine, Vanderbilt University, Nashville, Tennessee and the VA Tennessee Valley Geriatric Research and Education Clinical Center (GRECC)

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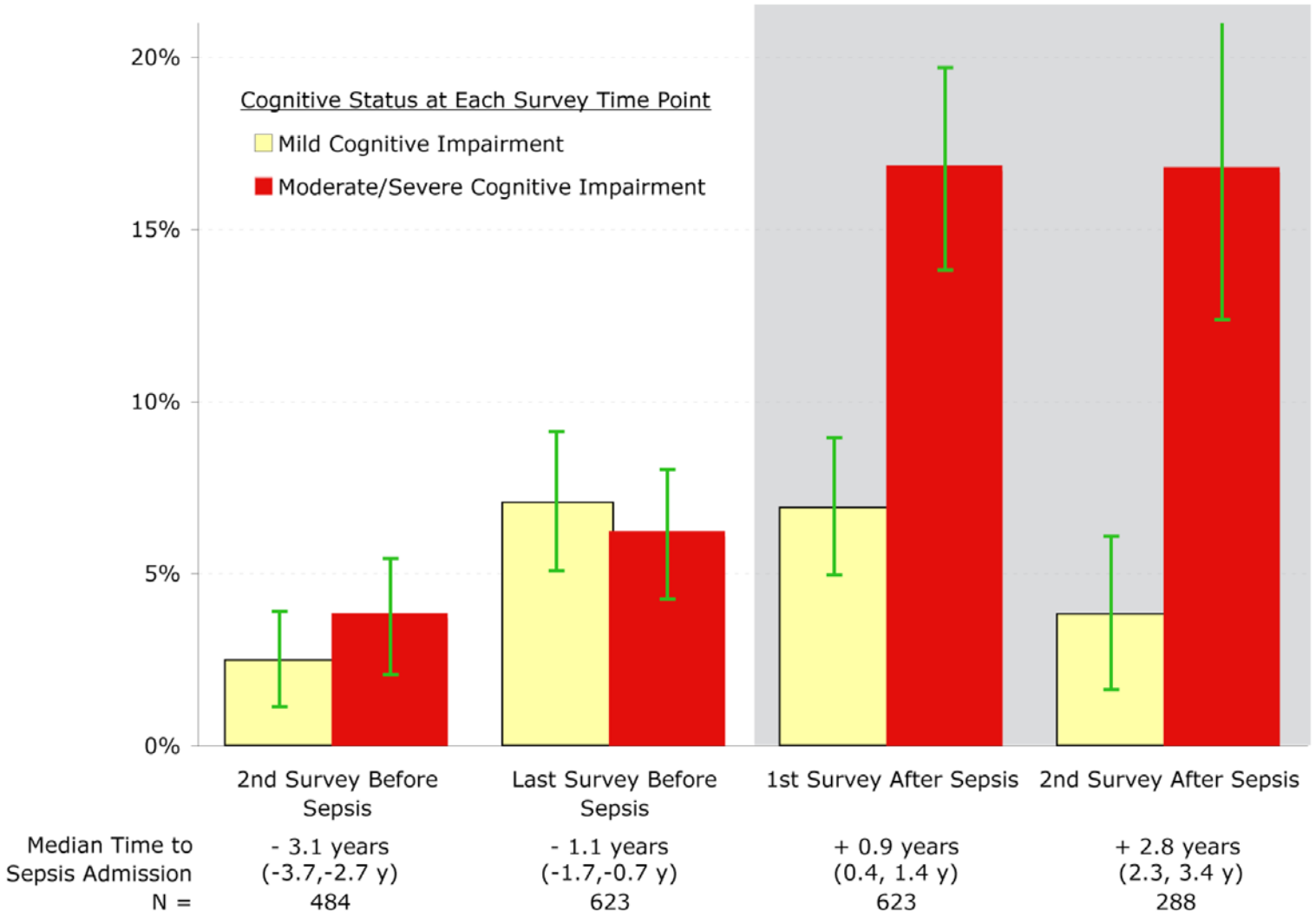


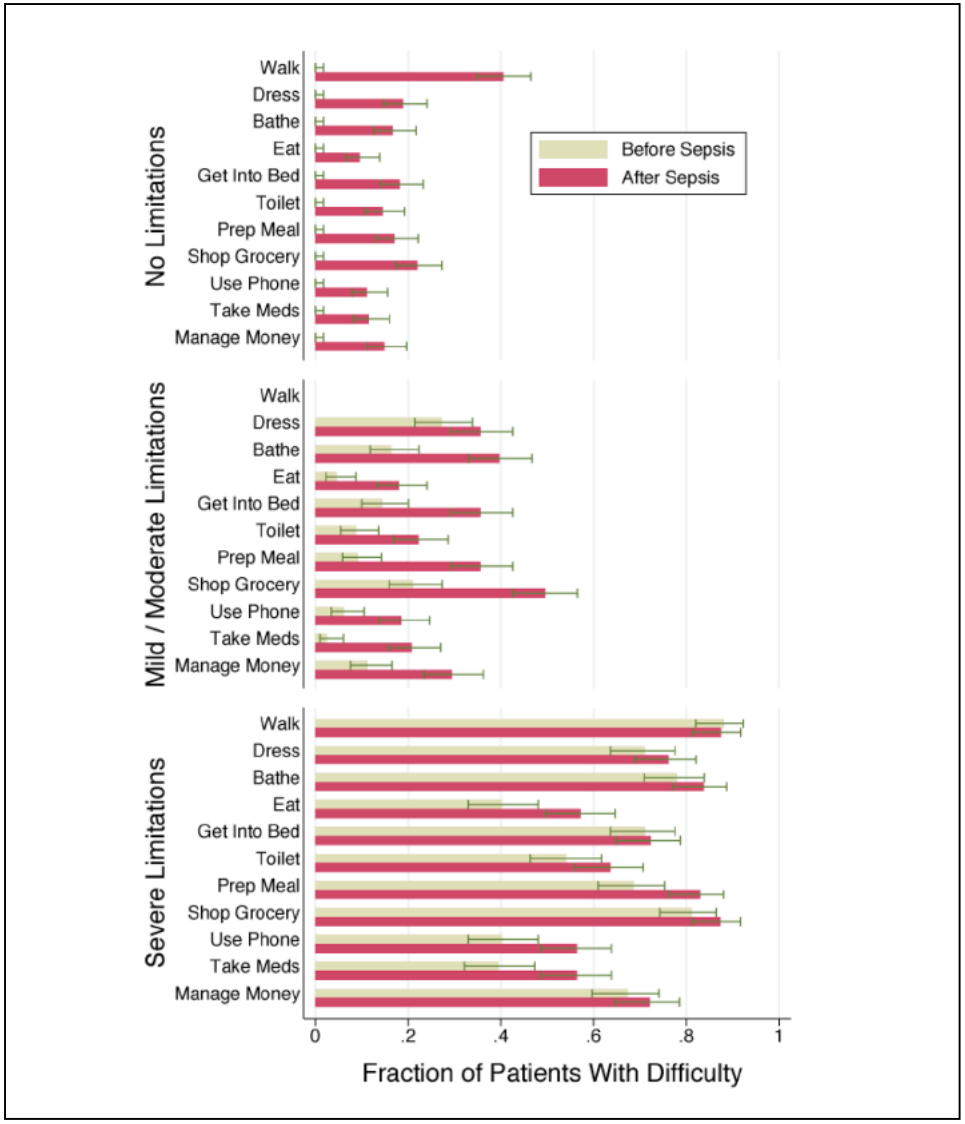
Iwashyna TJ et al. JAMA. 2010;304(16):1787-1794. doi:10.1001/jama.2010.1553

Severe Sepsis and Moderate to Severe Cognitive Impairment Among Survivors

	Odds Ratio (95% Confidence Interval)	*P* Value
Before sepsis (per additional year)	1.35 (1.11-1.65)	.002
Effect of sepsis	3.34 (1.53-7.25)	.002
After sepsis (per additional year)	1.68 (1.28-2.21)	.001

- With each passing year, patients were modestly more likely to develop moderate to severe cognitive impairment.
- After severe sepsis, survivors had a 3.3 fold greater odds of having moderate to severe cognitive impairment than before sepsis

Iwashyna TJ et al. JAMA. 2010;304(16):1787-1794


No Limitations
Walk
Dress
Bathe
Eat
Get Into Bed
Toilet
Prep Meal
Shop Grocery
Use Phone
Take Meds
Manage Money
Before Sepsis
After Sepsis
Mild / Moderate Limitations
Walk
Dress
Bathe
Eat
Get Into Bed
Toilet
Prep Meal
Shop Grocery
Use Phone
Take Meds
Manage Money
Severe Limitations
Walk
Dress
Bathe
Eat
Get Into Bed
Toilet
Prep Meal
Shop Grocery
Use Phone
Take Meds
Manage Money
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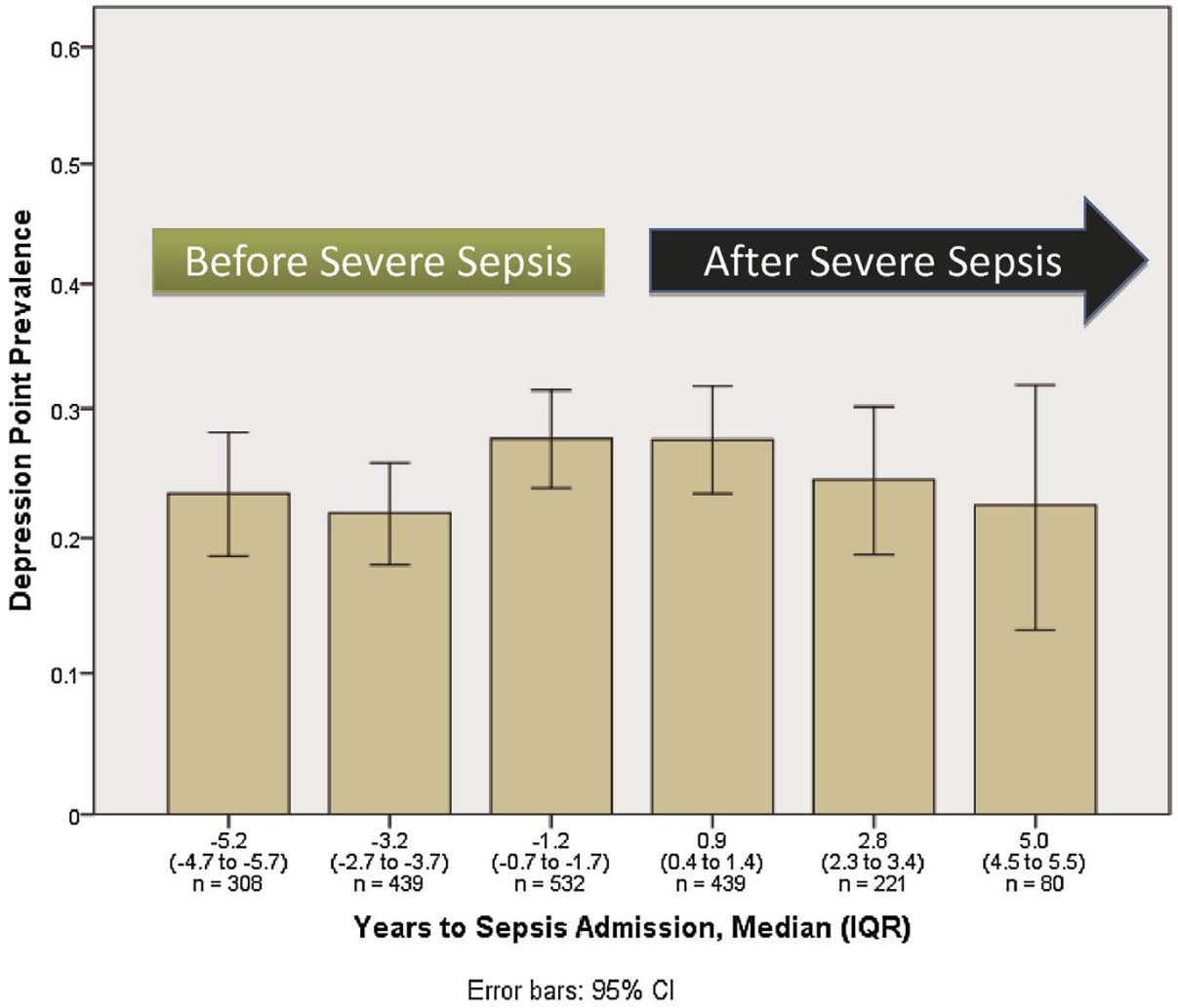
1
Fraction of Patients With Difficulty

Conclusion

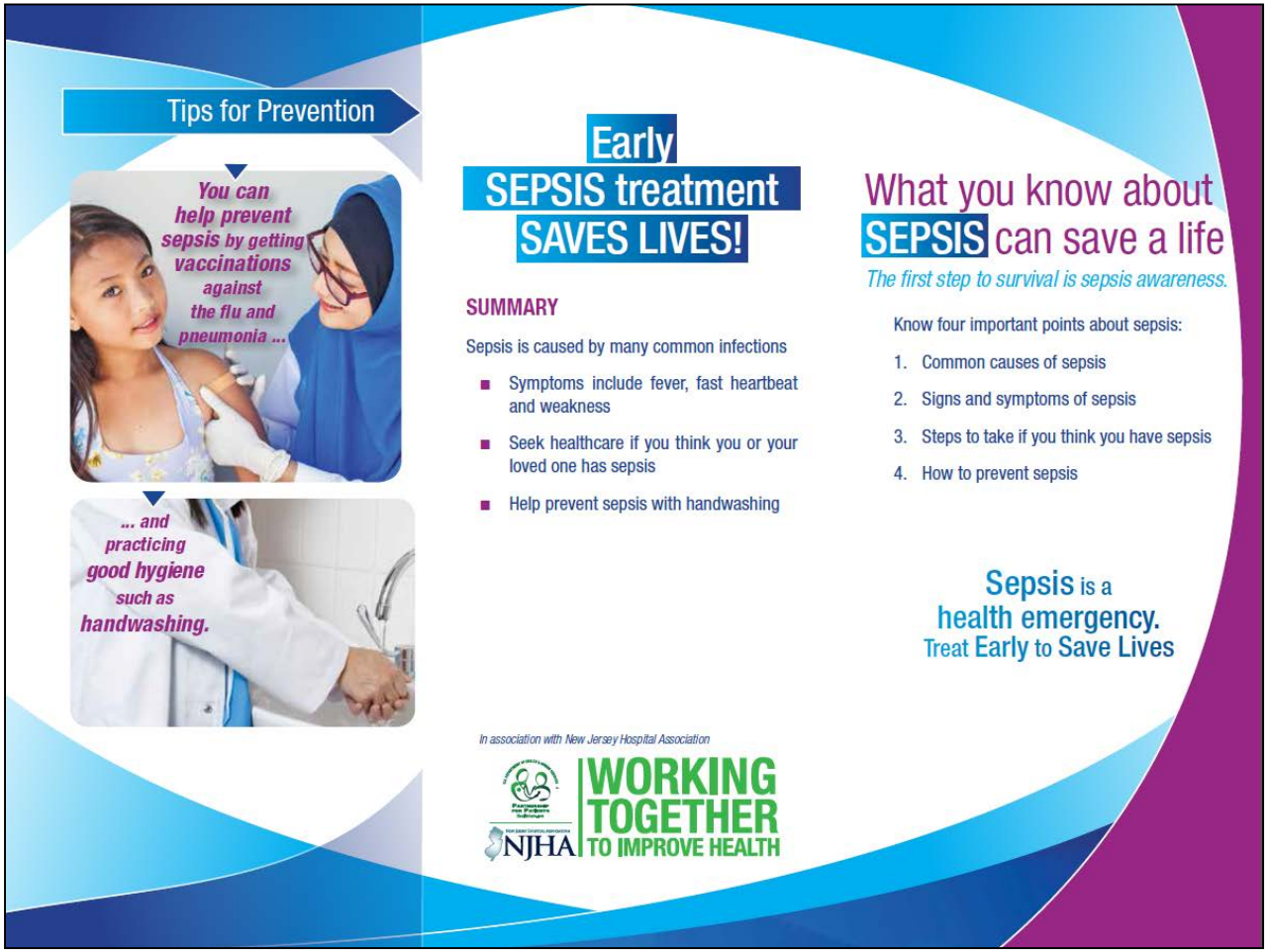
- Severe sepsis in this older population was independently associated with significant new cognitive impairment and functional disability among survivors.
- These new deficits likely result in a decline in patients‘ ability to live independently.
- Identifying modifiable components of hospital and rehabilitation care to prevent these disabilities would be valuable for patients and their families.

Symptoms of Depression in Survivors of Severe Sepsis



RESOURCES & FUTURE RESEARCH

Educate Patients and Families



http://www.njha.com/media/469020/NJHA-Sepsis-Patient-Education.pdf

Many survivors are left with **LIFE-CHANGING** *challenges.*

LIFE AFTER SEPSIS FACT SHEET

WHAT SEPSIS SURVIVORS NEED TO KNOW

ABOUT SEPSIS

What is sepsis?

Sepsis is a complication caused by the body's overwhelming and life-threatening response to an infection, which can lead to tissue damage, organ failure, and death.

What causes sepsis?

Any type of infection that is anywhere in your body can cause sepsis. It is often associated with infections of the lungs (e.g., pneumonia), urinary tract (e.g., kidney), skin, and gut. An infection occurs when germs enter a person's body and multiply, causing illness and organ and tissue damage.

LIFE AFTER SEPSIS

What are the first steps in recovery?

After you have had sepsis, rehabilitation usually starts in the hospital by slowly helping you to move around and look after yourself: bathing, sitting up, standing, walking, taking yourself to the restroom, etc. The purpose of rehabilitation is to restore you back to your previous level of health or as close to it as possible. Begin your rehabilitation by building up your activities slowly, and rest when you are tired.

How will I feel when I get home?

You have been seriously ill, and your body and mind need time to get better. You may experience the following physical symptoms upon returning home:

- General to extreme weakness and fatigue
- Breathlessness
- General body pains or aches
- Difficulty moving around
- Difficulty sleeping
- Weight loss, lack of appetite, food not tasting normal
- Dry and itchy skin that may peel
- Brittle nails
- Hair loss

Centers for Disease Control and Prevention
National Center for Emerging and Zoonotic Infectious Diseases

CS257671D

It is also not unusual to have the following feelings once you're at home:

- Unsure of yourself
- Not caring about your appearance
- Wanting to be alone, avoiding friends and family
- Flashbacks, bad memories
- Confusing reality (e.g., not sure what is real and what isn't)
- Feeling anxious, more worried than usual
- Poor concentration
- Depressed, angry, unmotivated
- Frustration at not being able to do everyday tasks

What can I do to help myself recover at home?

- Set small, achievable goals for yourself each week, such as taking a bath, dressing yourself, or walking up the stairs
- Rest and rebuild your strength
- Talk about what you are feeling to family and friends
- Record your thoughts, struggles, and milestones in a journal
- Learn about sepsis to understand what happened
- Ask your family to fill in any gaps you may have in your memory about what happened to you
- Eat a balanced diet
- Exercise if you feel up to it
- Make a list of questions to ask your doctor when you go for a check up

Are there any long-term effects of sepsis?

Many people who survive sepsis recover completely and their lives return to normal. However, as with some other illnesses requiring intensive medical care, some patients have long-term effects. These problems may not become apparent for several weeks (post-sepsis), and may include such consequences as:

- Insomnia, difficulty getting to or staying asleep
- Nightmares, vivid hallucinations, panic attacks
- Disabling muscle and joint pains
- Decreased mental (cognitive) functioning
- Loss of self-esteem and self-belief
- Organ dysfunction (kidney failure, respiratory problems, etc.)
- Amputations (loss of limb(s)

THE RORY STAUNTON FOUNDATION FOR SEPSIS PREVENTION

SEPSIS ALLIANCE

This fact sheet was developed in collaboration with CDC, Sepsis Alliance® and the Rory Staunton Foundation for Sepsis Prevention.

What's normal and when should I be concerned?

Generally, the problems described in this fact sheet do improve with time. They are a normal response to what you have been through.

Some hospitals have follow-up clinics or staff to help patients and families once they have been discharged. Find out if yours does or if there are local resources available to help you while you get better.

However, if you feel that you are not getting better, or finding it difficult to cope, or continue to be exhausted call your doctor.

Where can I get more information?

- Centers for Disease Control and Prevention (CDC)—CDC works 24/7 protecting America's health, safety and security. Whether diseases start at home or abroad, are curable or preventable, chronic or acute, stem from human error or deliberate attack, CDC is committed to responding to America's most pressing health challenges. cdc.gov/sepsis cdc.gov/cancer/preventinfections
- The Rory Staunton Foundation for Sepsis Prevention—Supports education and outreach efforts aimed at rapid diagnosis and treatment of sepsis, particularly in children. rorystauntonfoundationforsepsis.org
- Sepsis Alliance®—Created to raise sepsis awareness among both the general public and healthcare professionals. Sepsis Alliance offers information on a variety of sepsis-related topics. Visit sepsis.org/library to view the complete series of titles. sepsis.org

https://www.cdc.gov/sepsis/pdfs/life-after-sepsis-fact-sheet.pdf

SCCM.org | My SCCM | Learn ICU | Patients & Families

Search this site... SEARCH

Society of Critical Care Medicine
The Intensive Care Professionals

STORE email/ID # Password Log In
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ABOUT CRITICAL CARE | DURING THE ICU | AFTER THE ICU

- Connect With Patients and Families
- What To Expect Before and After Discharge
- Patient and Family Resources
- I Am A Healthcare Provider
- Ask A Healthcare Provider
- Post-intensive Care Syndrome

Patients and Families > After the ICU

Tweet

THRIVE

Every year, millions of Americans survive critical illness; but despite the efforts of their ICU, many are left with ongoing problems. The current health care system often does not meet the needs of these survivors, or their families, during their weeks to years of recovery. SCCM seeks to improve patient and family support after critical illness through the THRIVE Initiative.

CONNECT WITH PATIENTS AND FAMILIES
Connect with other ICU survivors, including former ICU patients and/or family members of ICU patients.

WHAT TO EXPECT BEFORE AND AFTER DISCHARGE
Learn what to expect with the physical and psychological aspects of recovery.

THRIVE: REDEFINING RECOVERY
Learn more about the THRIVE initiative and post-intensive care syndrome.

PATIENT AND FAMILY RESOURCES
Find resources to help patients and families THRIVE after the ICU.

I AM A HEALTHCARE PROVIDER
Learn more about how to get involved with THRIVE initiatives.

ASK A HEALTHCARE PROVIDER
Get answers to frequently asked questions regarding ICUs.

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SCCM 中国

Physician Letter Template

DATE:

TO: Dr.

FROM: Dr.

PHONE:

RE: Patient:

I recently cared for your patient, referenced above, in our intensive care unit. This patient had the following diagnoses and hospital course.

Diagnoses:

Hospital course (insert narrative):

Surgeries/procedures:

Discharge medications (mark psychotropic medications with asterisks):

I would also like to make you aware of **post-intensive care syndrome (PICS)**, a pattern of symptoms experienced by some patients who have been hospitalized in the ICU. Often these symptoms go unrecognized; sometimes patients are reluctant to admit that they are experiencing them.

What are the symptoms of PICS?

- **Functional deficits.** Patients may experience this even if they were not in the ICU for a long period of time. They may report:
  - Chronic fatigue and weakness
  - Inability to perform even basic activities of daily living
  - *It is important to note that the deficit may appear to be unrelated to the reason for the patient's ICU admission (eg, a patient admitted for urosepsis may have upper extremity weakness). Other medical causes must be ruled out, but PICS should be considered a possibility.*
- **Posttraumatic stress symptoms.** Patients sometimes experience depression, be easily startled, have nightmares, have avoidance symptoms that might manifest as missing appointments due to fear of going to the hospital/medical center.
- **Anxiety, depression, and/or sleep problems.**
- **Memory loss and/or other cognitive deficits.** Patients may say that they are unable to perform cognitive functions that were easy for them before their illness.

PICS can also affect family members (this is called PICS-F); they may experience symptoms of depression and anxiety for months after the patient comes home.

What should be done if a patient or family member exhibits symptoms consistent with PICS or PICS-F?

It is very important to reassure patients and families with PICS that what they are experiencing is not unusual for people who have been hospitalized in the ICU. Although we are still learning about how best to treat PICS, here are some articles that you may find useful:

Davidson JE, Harvey MA, Schuller J. Post-intensive care syndrome: what it is and how to help prevent it. *Am Nurse Today.* 2013;8(5):32-37.

Davidson JE, Jones C, Bienvenu OJ. Family response to critical illness: postintensive care syndrome - family. *Crit Care Med.* 2012 Feb;40(2):618-624.

Needham DM, Davidson J, Cohen H, et al. Improving long-term outcomes after discharge from intensive care unit: report from a stakeholders' conference. *Crit Care Med.* 2012 Feb;40(2):502-509.

The **Society of Critical Care Medicine (SCCM)** website also has a wealth of information that may assist you, the patient, and the family. Here's how to find it:

- On the website www.sccm.org, the initial screen has four tabs at the top.
- Click on the "Patient and Families" tab.
- Click on the drop-down menu "After the ICU."
- Click on "Post-Intensive Care Syndrome" to get additional information.
- Information can also be obtained at http://www.myicucare.org/Thrive, the new THRIVE Initiative website specifically devoted to PICS information.

Finally, patients and family members with symptoms of PICS or PICS-F may benefit from referral to a mental health professional—a psychiatrist, psychologist, social worker, or other mental health counselor can often assist patients and families in developing coping strategies for dealing with this syndrome.

I would be happy to speak with you any time if you have questions about this patient's ICU course or about PICS. Feel free to contact me at the phone number shown above.

The University of Michigan Post ICU Longitudinal Survivor Experience Clinic (U-M PULSE)

What does the first clinic include?

- Surveys to assess QOL & Limitations
- Testing for pulmonary function, fitness & mobility
- Meet with pharmacist to review medication
- Social work consult and cognitive testing

http://ihpi.umich.edu/news/one-stop-shop-new-clinic-bundles-key-services-after-icu-discharge

A Personal Comprehensive Approach

The 3-providers meet to discuss their exams and determine service and follow-up patient needs.

- The team meets with the patient to outline the plan, establish referrals and assist in access to care.
- A six-month follow-up, telephone and virtual check-ins are scheduled

http://ihpi.umich.edu/news/one-stop-shop-new-clinic-bundles-key-services-after-icu-discharge

Open Access Protocol

BMJ Open

IMPOSE (IMProving Outcomes after Sepsis)—the effect of a multidisciplinary follow-up service on health-related quality of life in patients postsepsis syndromes—a double-blinded randomised controlled trial: protocol

Jennifer D Paratz,[1,2,3,4] Justin Kenardy,[5] Geoffrey Mitchell,[6] Tracy Comans,[7] Fiona Coyer,[8] Peter Thomas,[1,2,4] Sunil Singh,[9] Louise Luparia,[1,3] Robert J Boots[1,2]

204 postsepsis syndromes randomized to ususal care vs. attending an outpatient clinic two monthly for 6 months and receive screening and targeted intervention outpatient clinic.
Australian and New Zealand Clinical Trials Registry ACTRN12613000528752.

BMJ Open 2014;4:e004966

Raise the alarm on sepsis.

HELP RAISE AWARENESS OF

SEPSIS SURVIVORSHIP

SEPSIS ALLIANCE
Suspect Sepsis. Save Lives.

SEPSIS.ORG

Society of Critical Care Medicine
The Intensive Care Professionals

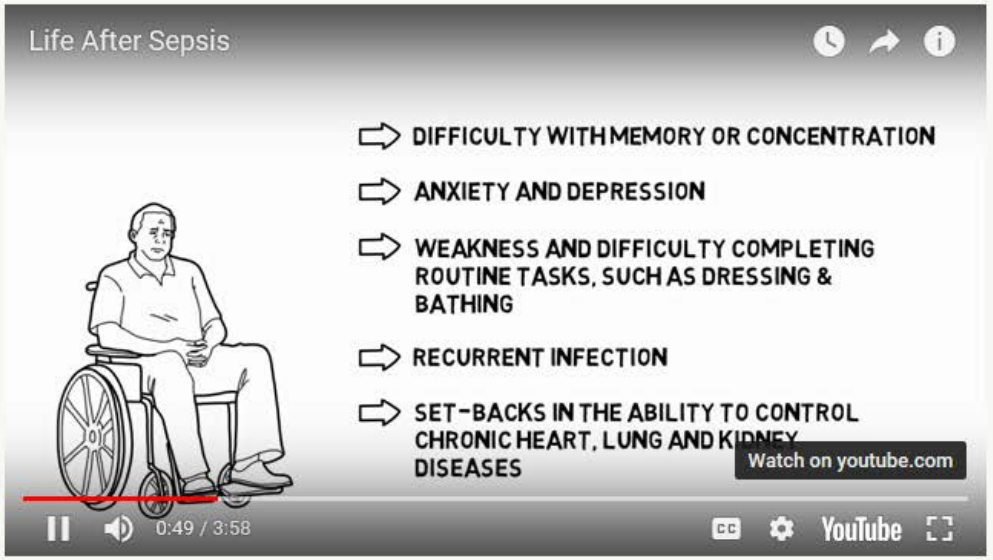
SCCM.ORG

Life After Sepsis

Sepsis Alliance

Subscribe 865

Post-Sepsis Syndrome – PSS



https://www.youtube.com/watch?v=HIk64wdy44Q

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Thank you for your time