



Reducing Preventable Deaths From Sepsis

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PSMF Summit 2023

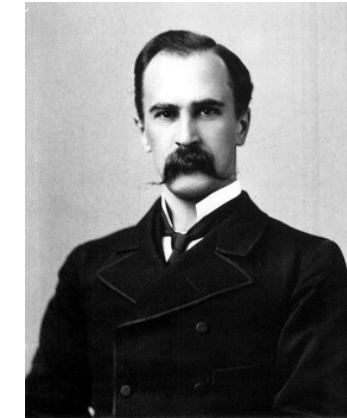
WHO DG Tedros Called it a Tragedy That Most of the Annual 11 million Deaths From Sepsis Are Preventable



**Zero Preventable Deaths
From Sepsis**

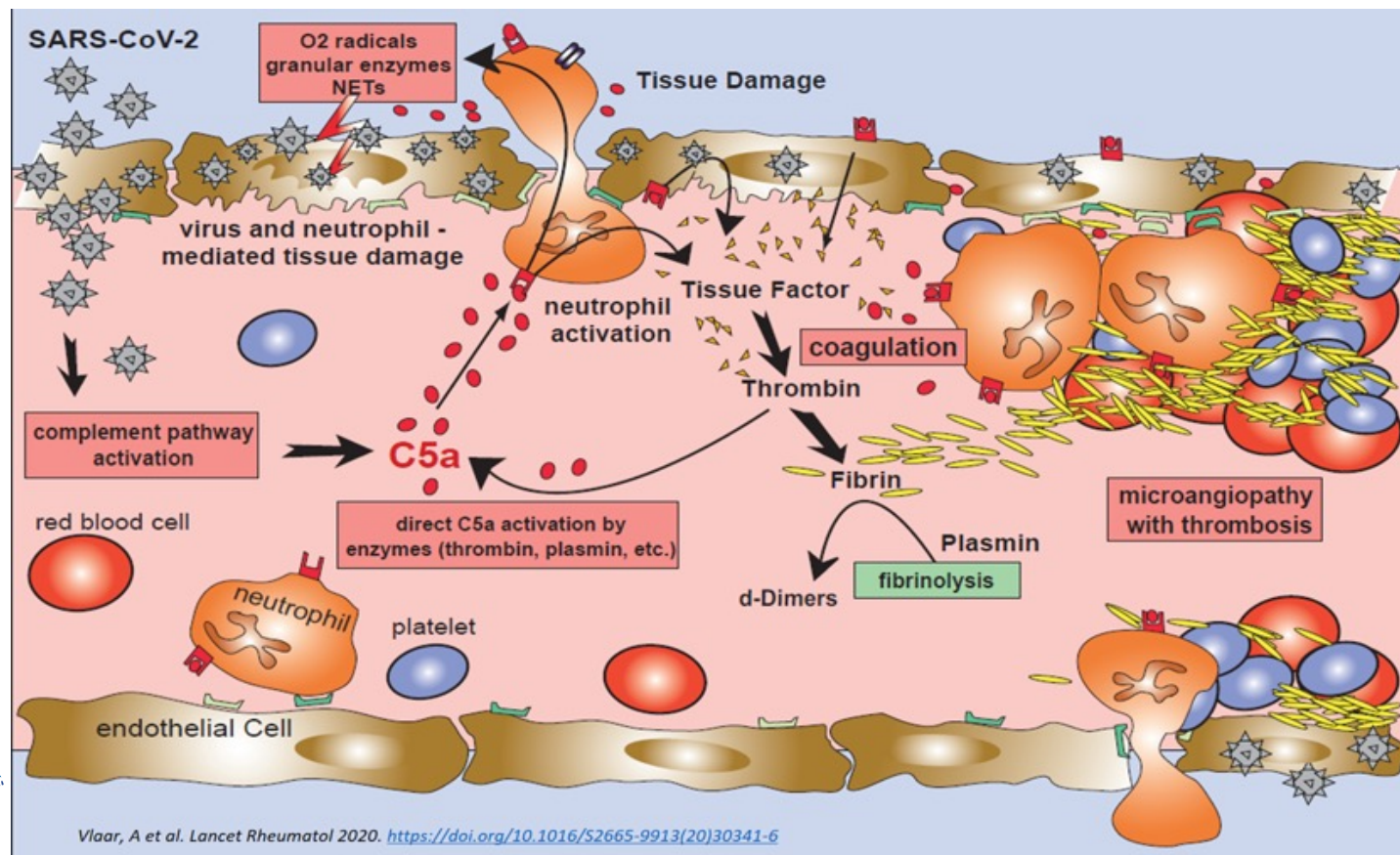
**Is the Vision of the GSA and the
World Sepsis Day Movement**

Sepsis is a life-threatening condition that arises when the body's response to an infection injures its own tissues and organs



„Except on few occasions, the patient seems to die from the body's response to infection rather than from it.“

- Sir William Osler; 1904

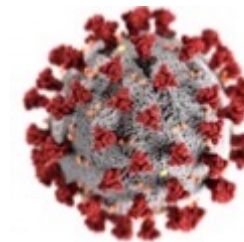
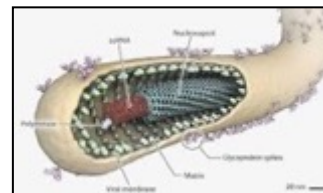
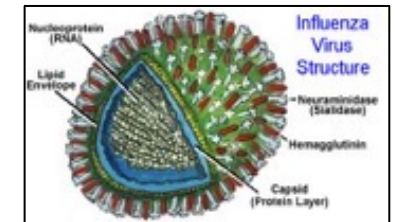


COVID-19 adds to the burden of sepsis

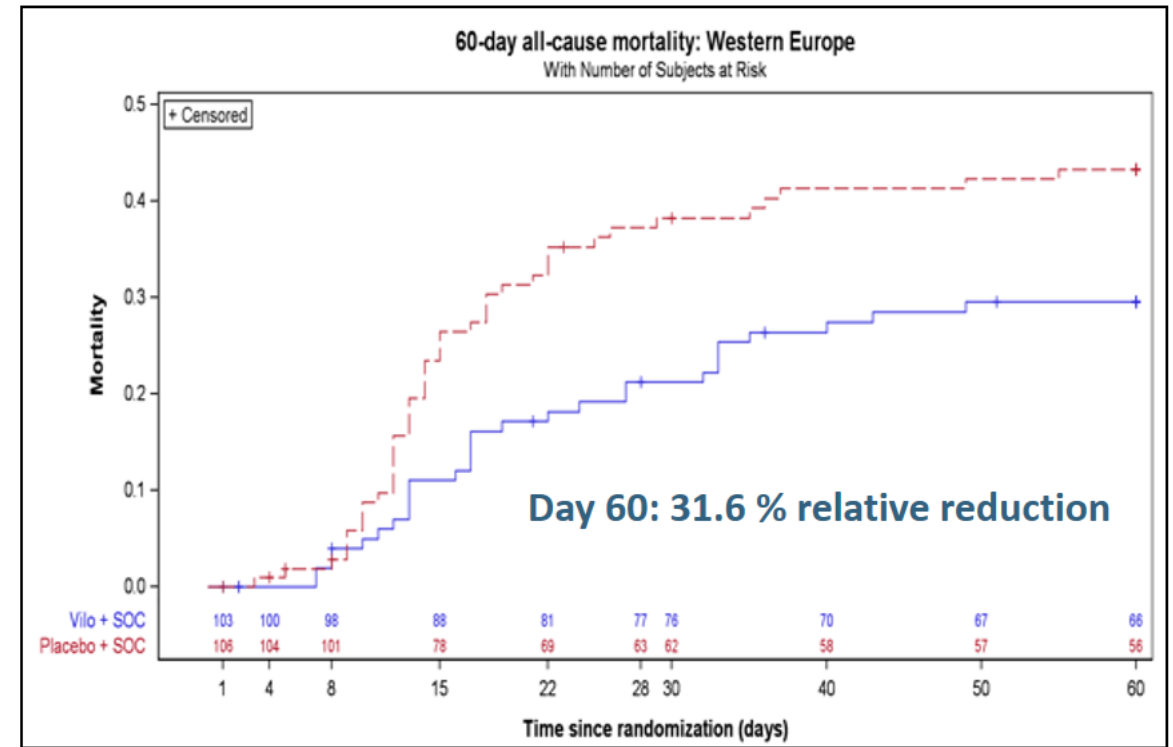
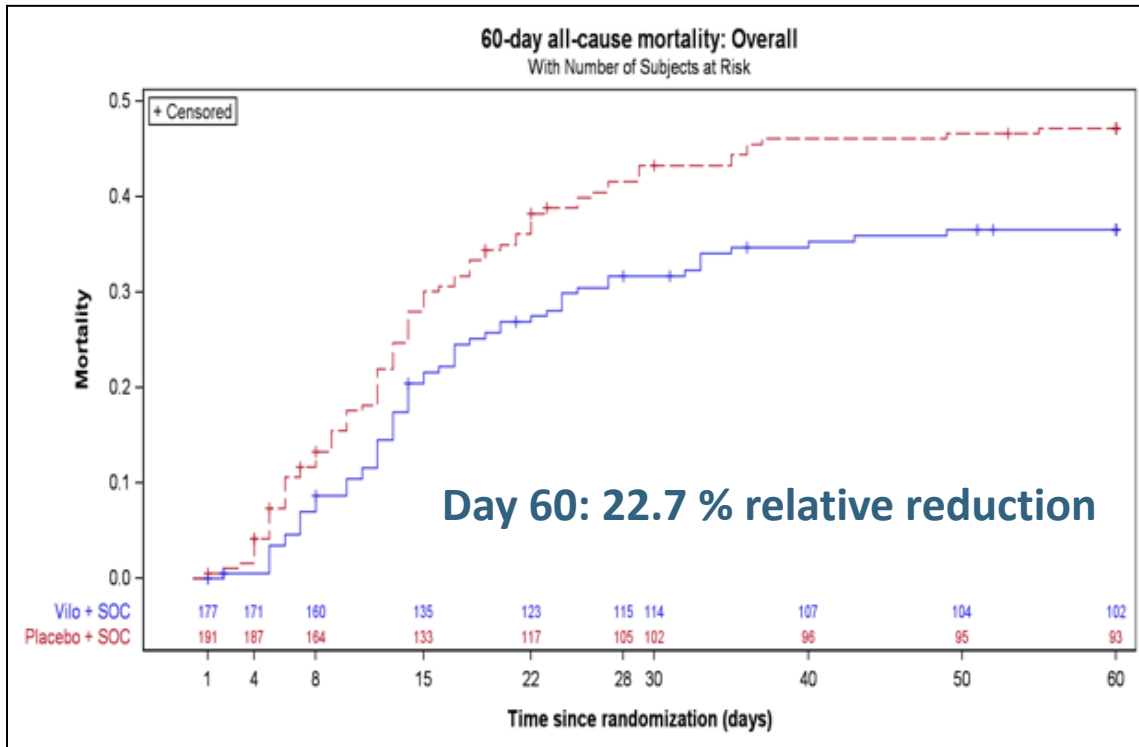
“Manifestations of sepsis and septic shock can be the fatal frequent pathway of infections with:

- Seasonal **influenza** viruses
- **Dengue** viruses
- **SARS CoV** virus
- MERS CoV virus
- **Corona** virus
- Yellow fever viruses.”*

*SEVENTIETH WORLD HEALTH ASSEMBLY 2017
Report by the Secretariat



Treatment of Patients with COVID-19 Sepsis the C5a Antibody Vilobelimab Reduced 60 Day All cause Mortality



FDA Emergency Use Authorization granted

“Humanity has but three great enemies: fever, famine, and war; of these the greatest, by far the most terrible, is fever.”



- Sir William Osler; 1898

Sepsis	11 Million	2017
Sepsis	13 Million	2019
COVID-19	> 6.8 Million	3/2023
HIV	0.69 Million	2019
Hunger	7.6 Million	2018
War*	0.75 Million	1945 - 2000
Cancer	9.6 Million	2019
AMR attributable	1.27 Million	2018
AMR associated	4.97 Million	2018



Each year:

- More than 1.7 million people in the U.S develop sepsis ¹
- Nearly 270,000 adult Americans die as a result of sepsis ¹
- **More than \$62 billion is spent on sepsis healthcare costs²**

¹ <https://www.cdc.gov/sepsis/>

² Buchman TG, Simpson SQ, Sciarretta KL, et al: Sepsis Among Medicare Beneficiaries: 3. The Methods, Models, and Forecasts of Sepsis, 2012-2018. Crit Care Med 2020; 48:302-318

SEVENTIETH WORLD HEALTH ASSEMBLY

WHA70.7

Agenda item 12.2

29 May 2017

Improving the prevention, diagnosis and clinical management of sepsis

The majority of sepsis deaths and disabilities are preventable by:

- Infection prevention – vaccination, sanitation and clean care
- Early recognition and treatment of sepsis as emergency
- Improving the quality of health care systems and access to appropriate care

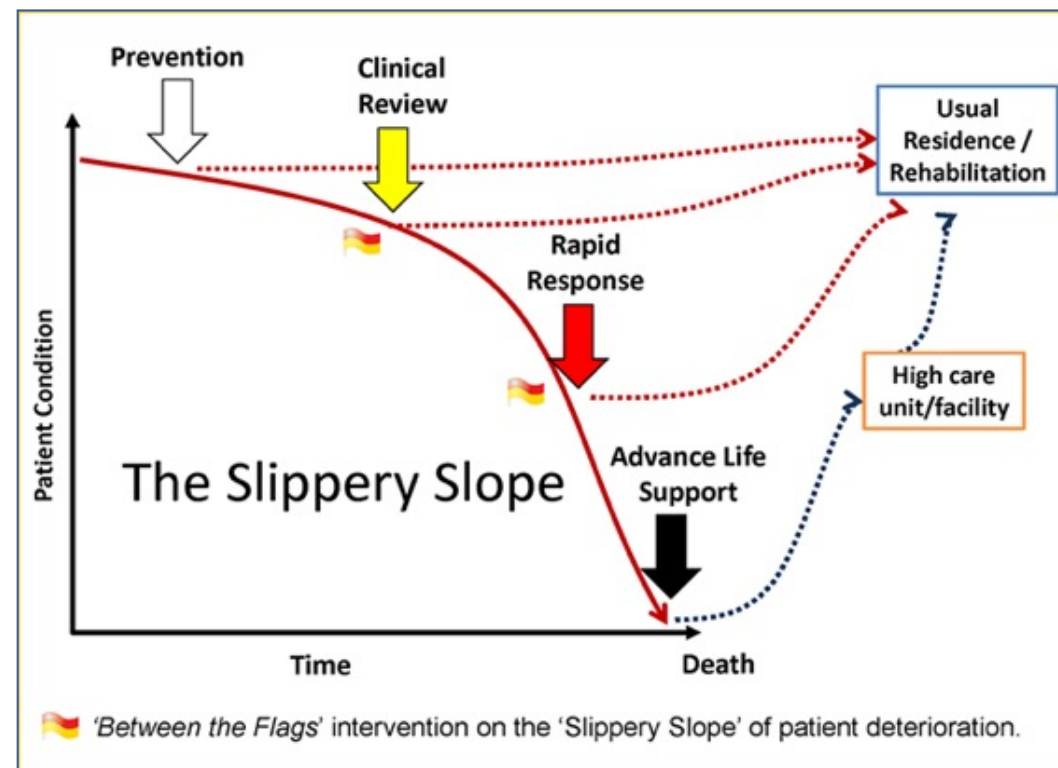
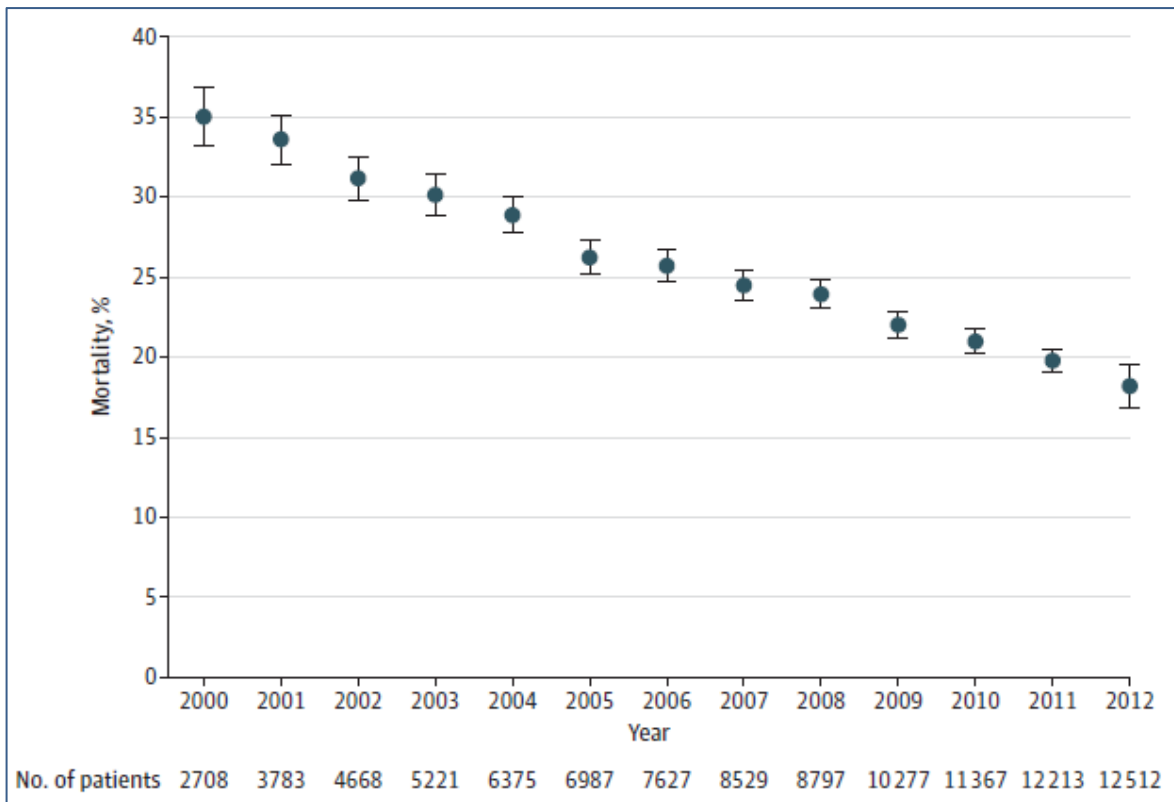
Original Investigation | CARING FOR THE CRITICALLY ILL PATIENT

Mortality Related to Severe Sepsis and Septic Shock Among Critically Ill Patients in Australia and New Zealand, 2000-2012

Kirsi-Maija Kaukonen, MD, PhD, EDIC; Michael Bailey, PhD; Satoshi Suzuki, MD; David Pilcher, FCICM; Rinaldo Bellomo, MD, PhD

JAMA 2015

The quality of the health care system matters!



A National Early Warning Score for Deteriorating Patients and Rapid Response Teams Became Mandatory During This Time Period

Six simple physiological parameters form the basis of the scoring system:

- Respiration rate
- Oxygen saturation
- Systolic blood pressure
- Pulse rate
- Level of consciousness or new confusion
- Temperature.

Physiological parameter	Score						
	3	2	1	0	1	2	3
Respiration rate (per minute)	≤8		9–11	12–20		21–24	≥25
SpO ₂ Scale 1 (%)	≤91	92–93	94–95	≥96			
SpO ₂ Scale 2 (%)	≤83	84–85	86–87	88–92 ≥93 on air	93–94 on oxygen	95–96 on oxygen	≥97 on oxygen
Air or oxygen?		Oxygen		Air			
Systolic blood pressure (mmHg)	≤90	91–100	101–110	111–219			≥220
Pulse (per minute)	≤40		41–50	51–90	91–110	111–130	≥131
Consciousness				Alert			CVPU
Temperature (°C)	≤35.0		35.1–36.0	36.1–38.0	38.1–39.0	≥39.1	



The NEW ENGLAND JOURNAL of MEDICINE

Perspective

Recognizing Sepsis as a Global Health Priority — A WHO Resolution

Konrad Reinhart, M.D., Ron Daniels, M.D., Niranjana Kissoon, M.D., Flavia R. Machado, M.D.,
Raymond D. Schachter, L.L.B., and Simon Finfer, M.D.

“Some very important clinical... them affecting... burden of... ed preven-... nagement... disease aris-... sepsis remains unknown. ... current estimates of 30 mil-... lion episodes and 6 million deaths... per year come from a systematic... review that extrapolated from pub-... lished national or local popula-... tion estimates to the global pop-... ulation.³ The likelihood that the... result was a significant underes-

... The public and political space is the
space in which [sepsis] needs to be in
order for things to change.”
Sir Liam Donaldson, Geneva ; May 2017

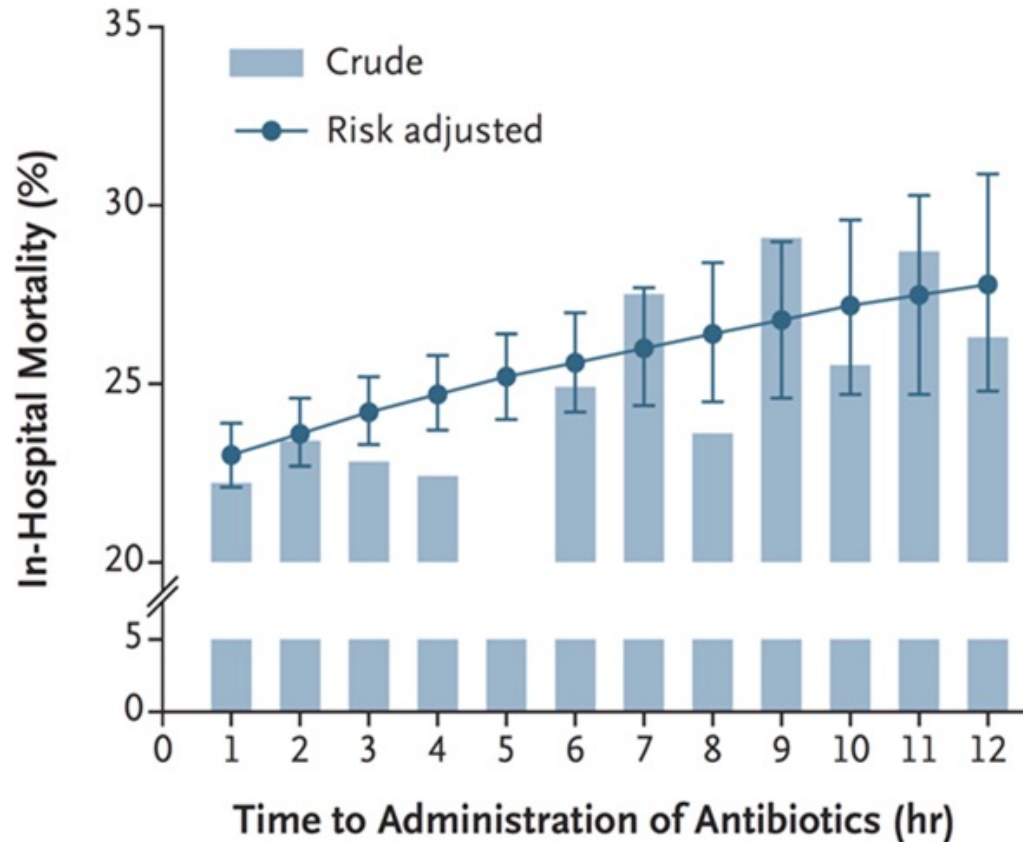
and prof... at the clinic... but not visib... litical leaders... care systems... and political s... in which [sepsis] needs to be in... order for things to change.”

So said Sir Liam Donaldson, described by Donaldson, and as a

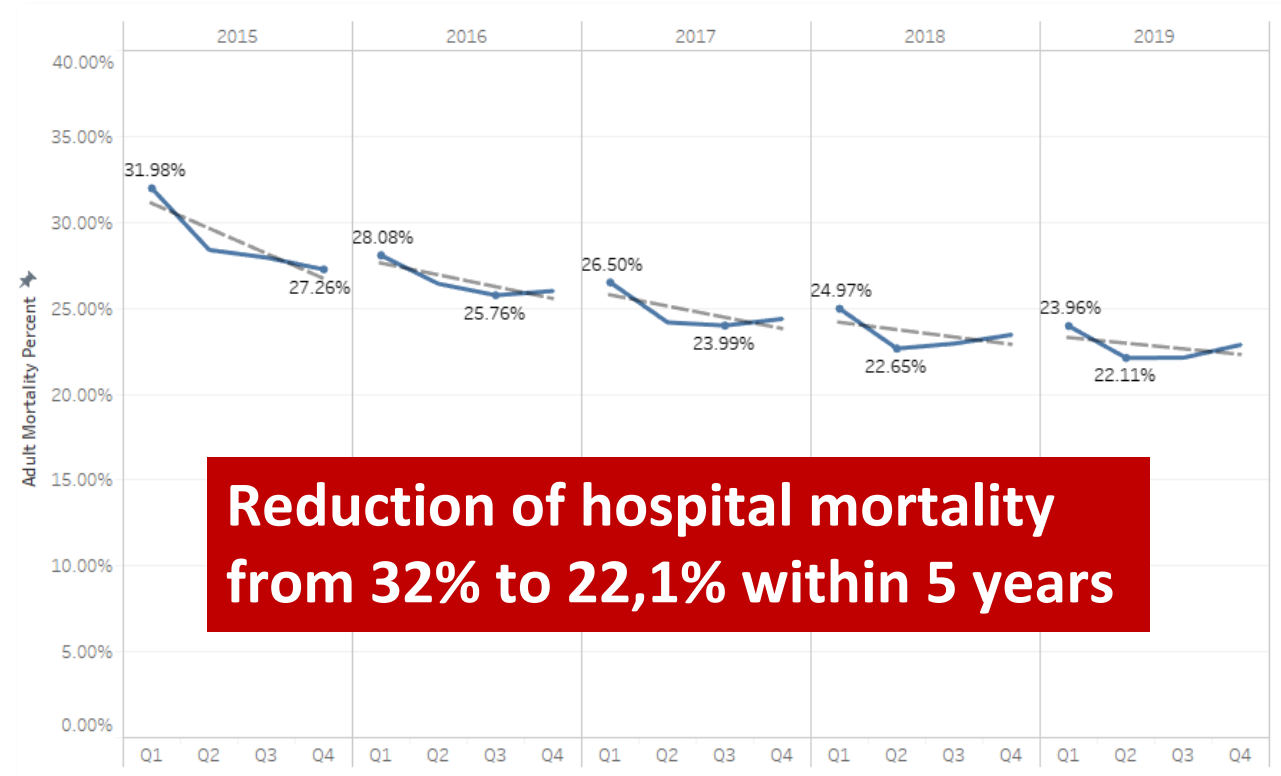


Increased awareness and QI efforts improve survival

Administration of Antibiotics



Seymour CW, Gesten F, Prescott HC et al. (2017)
The New England Journal of Medicine 376:2235-2244



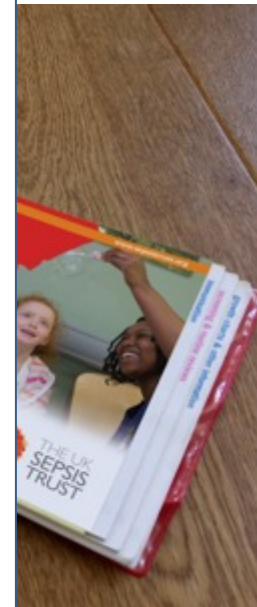
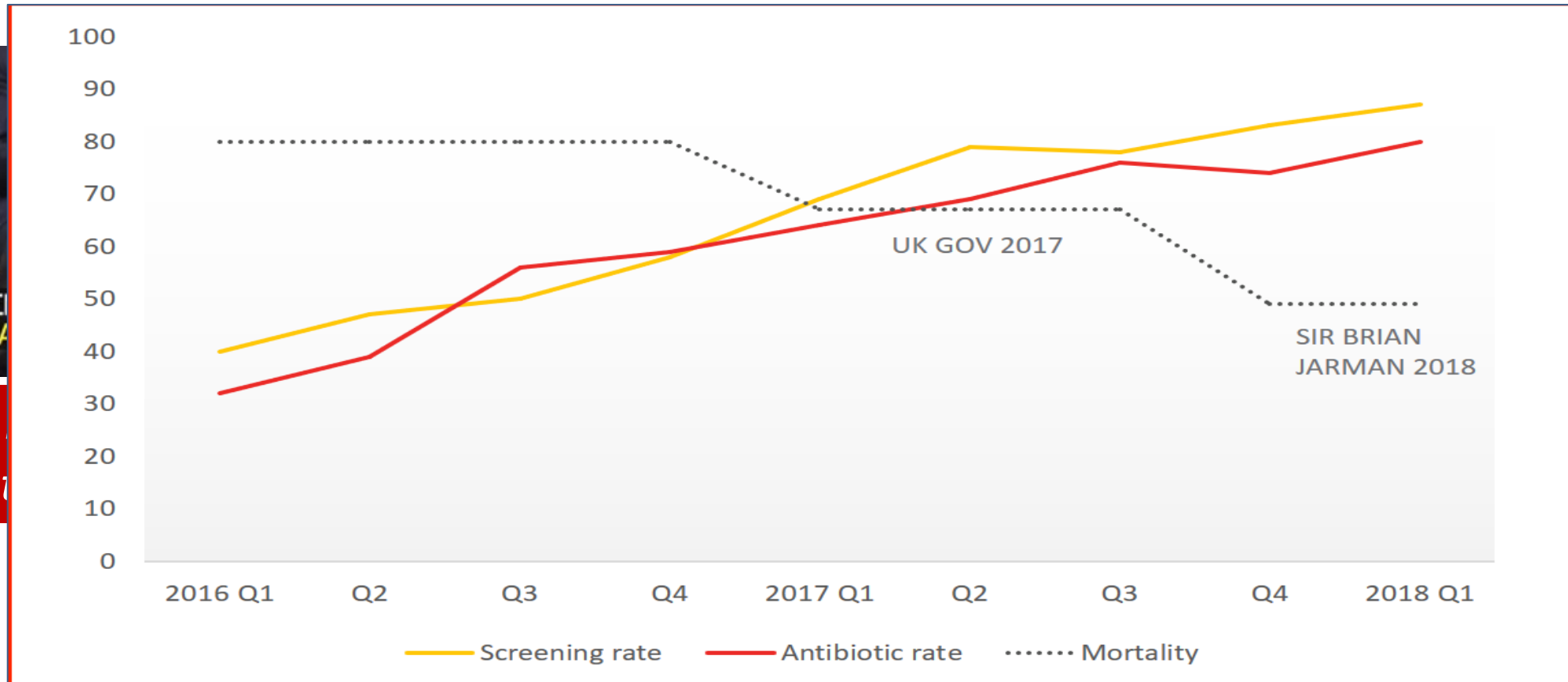
**Reduction of hospital mortality
from 32% to 22,1% within 5 years**

Courtesy Marcus Friedrich
<https://www.health.ny.gov/diseases/conditions/sepsis/>

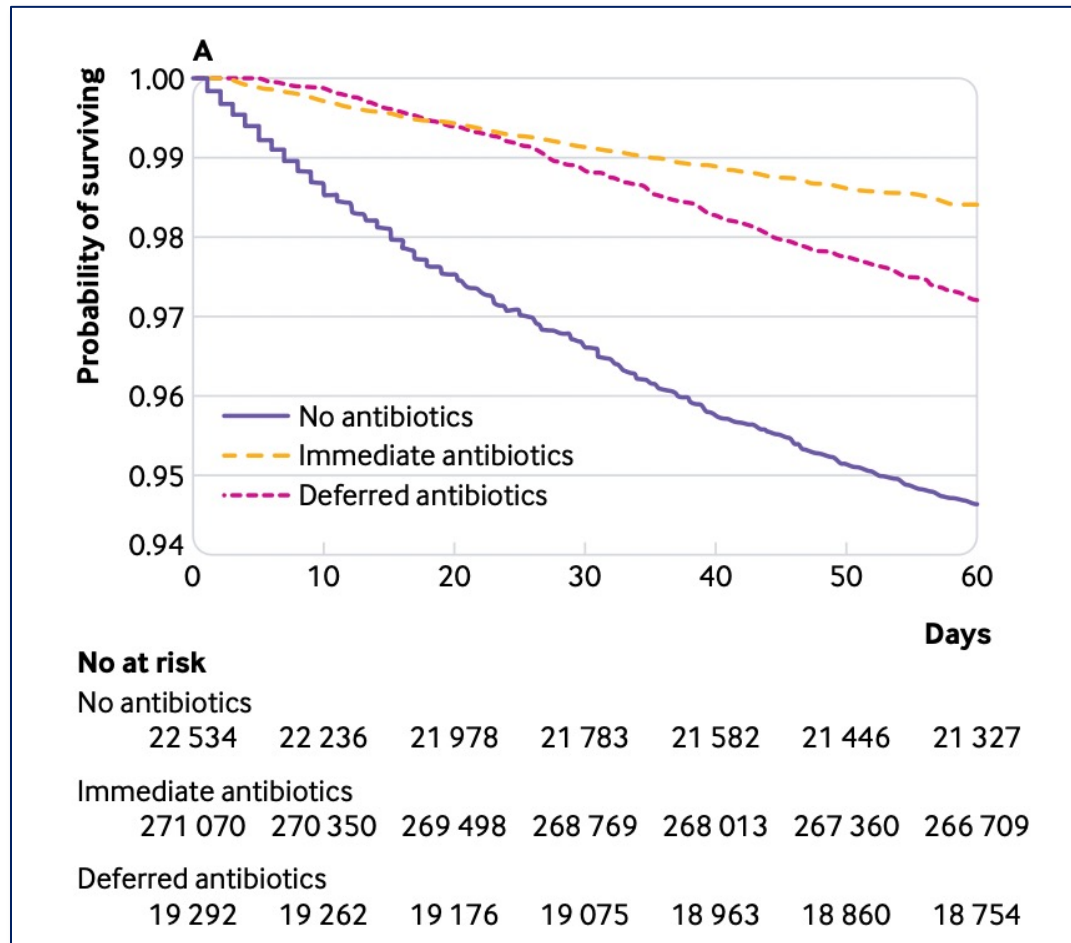
Increased awareness and QI efforts improve outcome on the national level



'Sepsis
whose t



Early antibiotic management in elderly in primary care improves survival



Gharbi et al. Antibiotic management of urinary tract infection in elderly patients in primary care and its association with bloodstream infections and all cause mortality: population based cohort study BMJ 2019;364:l525..

Prehospital delay is an important risk factor for mortality in community-acquired bloodstream infection/sepsis



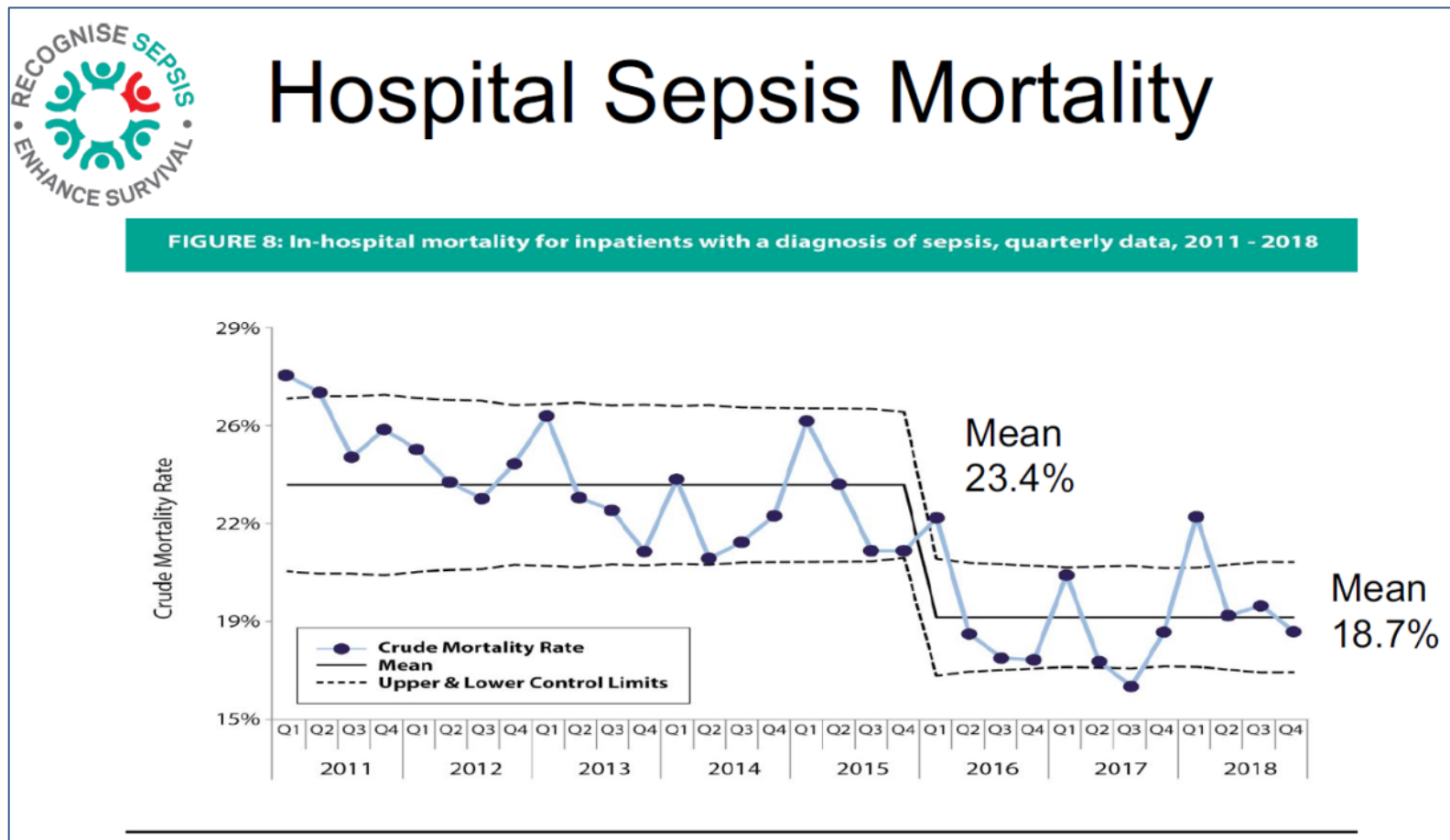
Open access

Table 3 Risk factors for 30-day mortality

Risk factor	Univariate analysis			Multivariable analysis		
	OR	95% CI	P value	OR*	95% CI	P value
Time from first prehospital contact to admission (intervals)	1.26	1.07 to 1.47	0.01			
0–6 hours	1†			1†		
6–12 hours	1.46	0.73 to 2.94	0.28	1.35	0.48 to 3.79	0.56
12–24 hours	0.97	0.42 to 2.25	0.94	0.56	0.15 to 2.10	0.39
>24 hours	4.09	2.02 to 8.28	<0.01	6.17	2.19 to 17.38	<0.01
No prehospital contact	1.83	1.05 to 3.19	0.03	2.56	1.02 to 6.41	0.05
Updated Charlson	1.13	1.05 to 1.22	<0.01	1.02	0.91 to 1.15	0.70
Ambulance transport	1.84	1.14 to 2.97	0.01	1.59	0.68 to 3.71	0.29
Admission through ED	0.55	0.29 to 1.03	0.06	1.35	0.43 to 4.25	0.61
In SOFA score	1.60	1.40 to 1.83	<0.01	1.35	1.16 to 1.57	<0.01
Inappropriate empirical antibiotic therapy‡	3.92	1.64 to 9.33	<0.01	5.50	1.62 to 18.63	0.01
Rapid deterioration in general condition	1.79	1.06 to 3.02	0.03	2.27	0.98 to 5.28	0.06
Any care restrictions before or within 24 hours after admission	9.95	5.95 to 16.64	<0.01	10.37	4.96 to 21.67	<0.01
Matching	1	0.99 to 1.00	>0.99	1	0.99 to 1.0	0.20

doi: 10.1136/bmj.l525 | BMJ 2019;364:l525 | [the bmj](#)

Impact of a national quality improvement campaign in Ireland



Former MoH
Primeminster
Leo Varadkar

A call to EU action

Sepsis -
The Most Preventable Cause
of Death and Disability
in Europe



stop
sepsis
save
lives

A Call to EU Action
Brussels, March 20th, 2018
14:30 – 19:45
Venue to be announced at a later date

MORE INFORMATION & FREE REGISTRATION
<https://www.global-sepsis-alliance.org/acalltoeuaction>

"The time to act on sepsis is now. I encourage EU Member States to:

- strengthen efforts to prevent infections
- foster the appropriate use of antimicrobials.
- improve the quality of life of sepsis survivors.



Vytenis Andriukaitis
former EU Commissioner for
Health and Food Safety

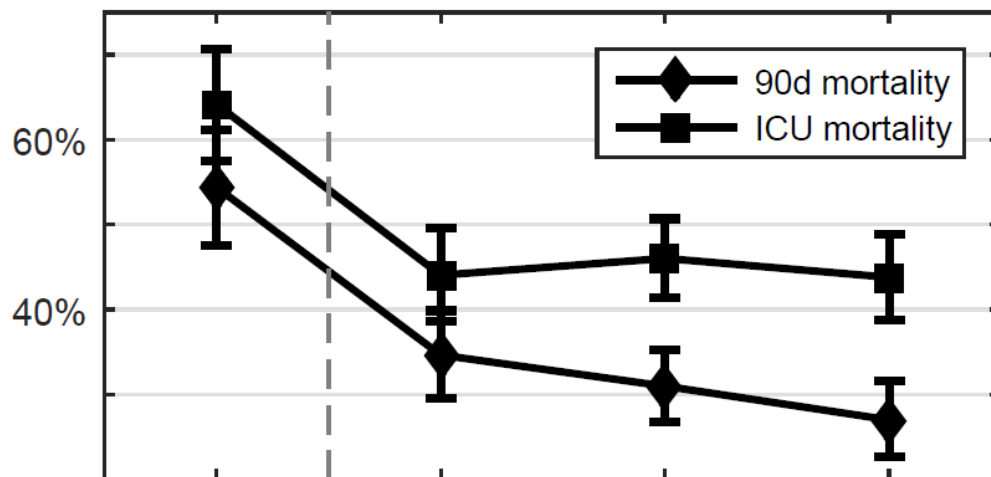
Also statements in the G7 Health Ministers' Communiqué is encouraging

- We will intensify our efforts to strengthen early detection, diagnosis and therapy of sepsis and **ensure synergy with antimicrobial stewardship and IPC programmes e.g., through national educational campaigns***
- **Boost the implementation of the WHA Resolution “Improving the Prevention, Diagnosis and Clinical Management of Sepsis” (WHA Res. 70.7).***

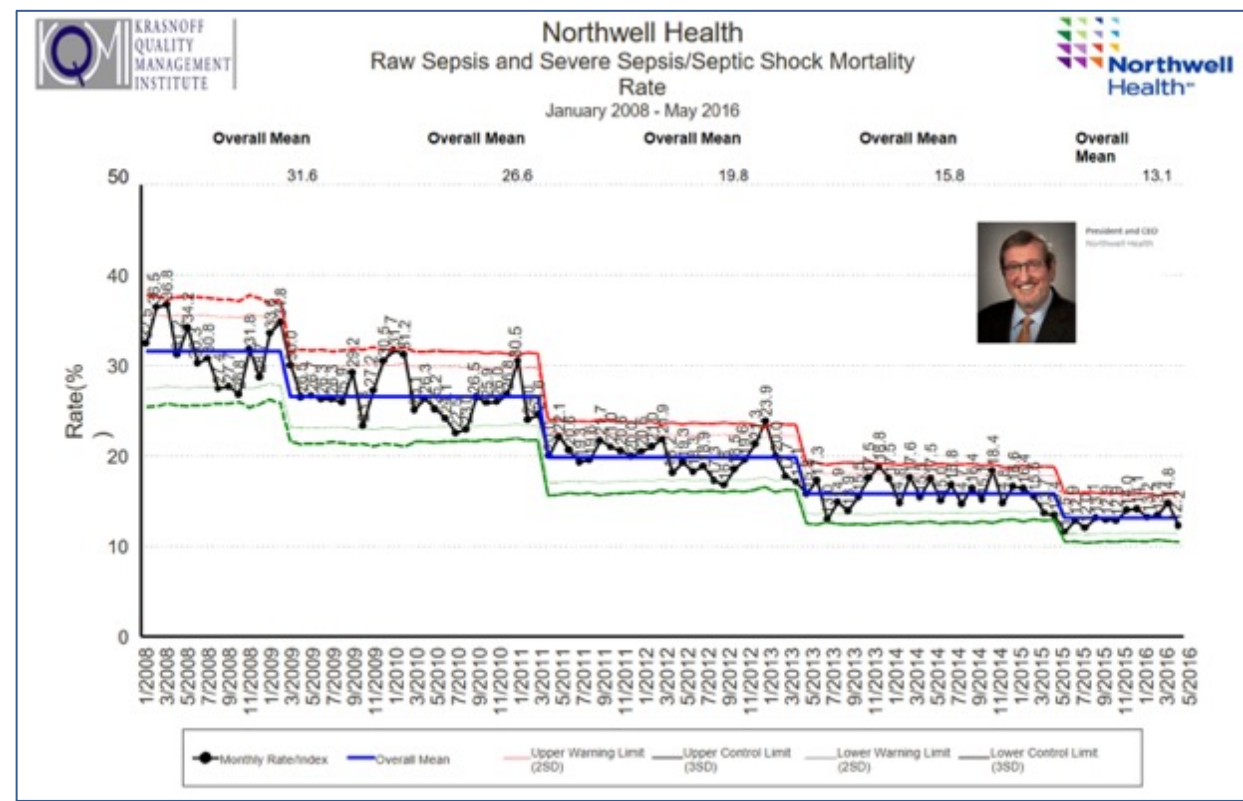


MoH Karl Lauterbach

Quality improvement of sepsis care also requires leadership and dedication on the hospital level



Reduction 28 Mortality between 2007-2011 from 53,5% auf 31,7% University Hospital Greifswald, Germany



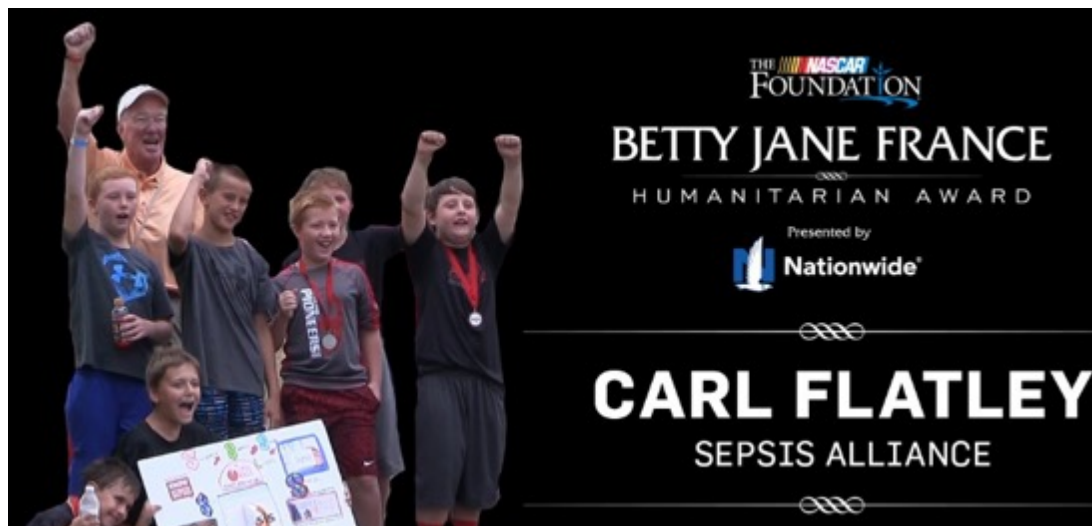
Scheer et al CCM 2016 DOI:

10.1097/CCM.0000000000000000

2069



The engagement of family members was key to make this happen!




Sepsis and the little ones who never should have died: Heartbreaking stories that prove why it's so vital families and doctors are taught how to spot symptoms sooner

- The Daily Mail is campaigning to end the sepsis scandal
- 1,500 children have died from sepsis in the last 14 months
- Jeremy Hunt promised to consider a national awareness campaign
- Sepsis is an over-reaction of the body's immune system to infection
- If caught early enough, it's treated with intravenous antibiotics and fluids

By JONATHAN GORNALL FOR THE DAILY MAIL

PUBLISHED: 00:05, 15 March 2016 | UPDATED: 10:29, 15 March 2016

Join the fight and share our vision:



**Zero preventable deaths from
sepsis**