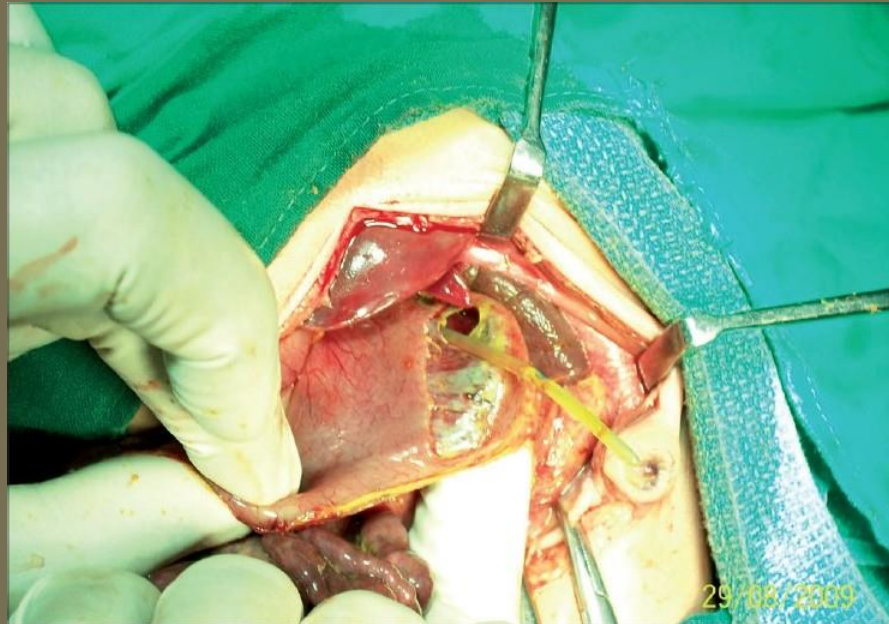


Prof. Dr. P. Soetamto Wibowo, Sp.B-KBD

SURGICAL COMPLICATION & SEPSIS



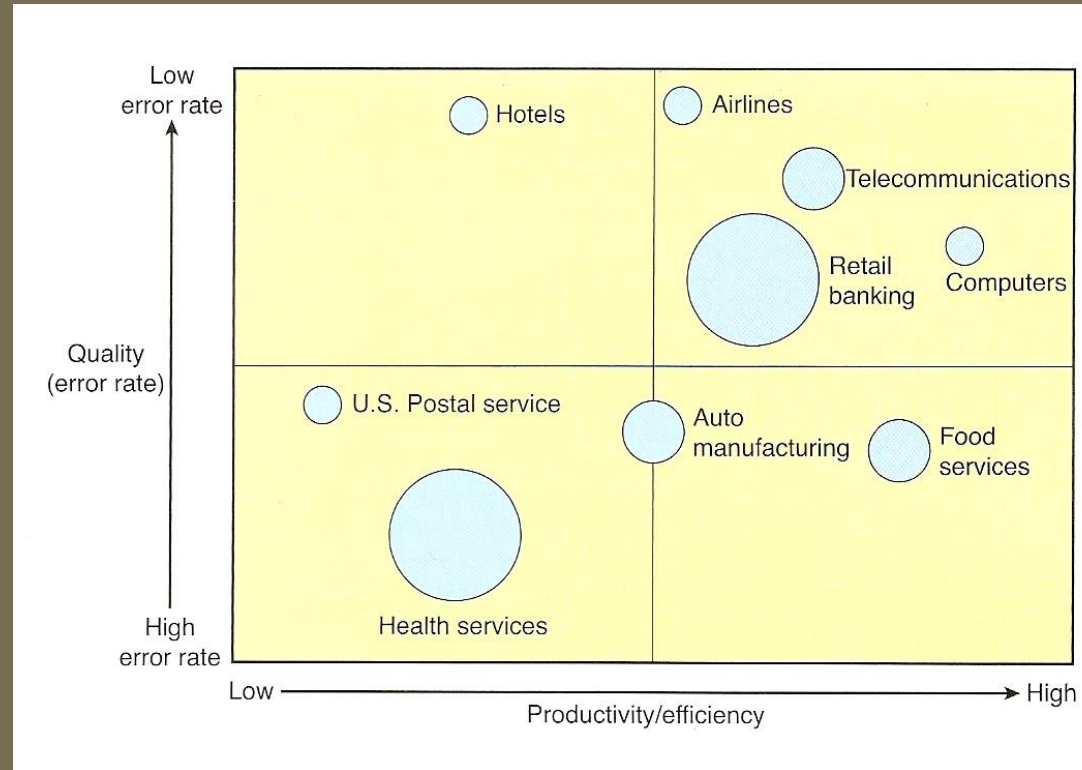
It's not about what happen to you.

It's about how you response to what happen to you

Rene Suhartono

WHY ?

- Medicine : High Risk System with High Error Rate



Cross Industry Comparison of size, productivity and efficiency
(the Advisory Board Company 2005)



Complications and Adverse Events in Surgery

- ▶ 10% of hospital admission suffer harm, half is preventable [1,2]
- ▶ 50% - 75% of hospital wide adverse events are attributable to surgical care.

Most errors occur in the OR [2]

[1] Thomas EJ, Clinical Risk Management Enhancing Patient Safety, BMJ Publ. 2001 : 31-44

[2] Vincent C. System Approaches to Surgical Quality and Safety, Ann. Surg. 2004; 239 : 475-482

[3] Healey MA, Complications of Surgical Patients, Arch Surg. 2002; 137 : 611 – 618



3 Types of negative outcome

- Complication : any deviation from the normal post operative course
- Sequela : “after effect” of surgery that inherent to the procedure (eq. amputation)
- “Failure to cure” : original purpose of surgery has no been achieve (eq. residual tumor)

Emergency General Surgery (EGC)

Hospital Cost and Utilization Project's National in patient Sample USA (2008 – 2011)

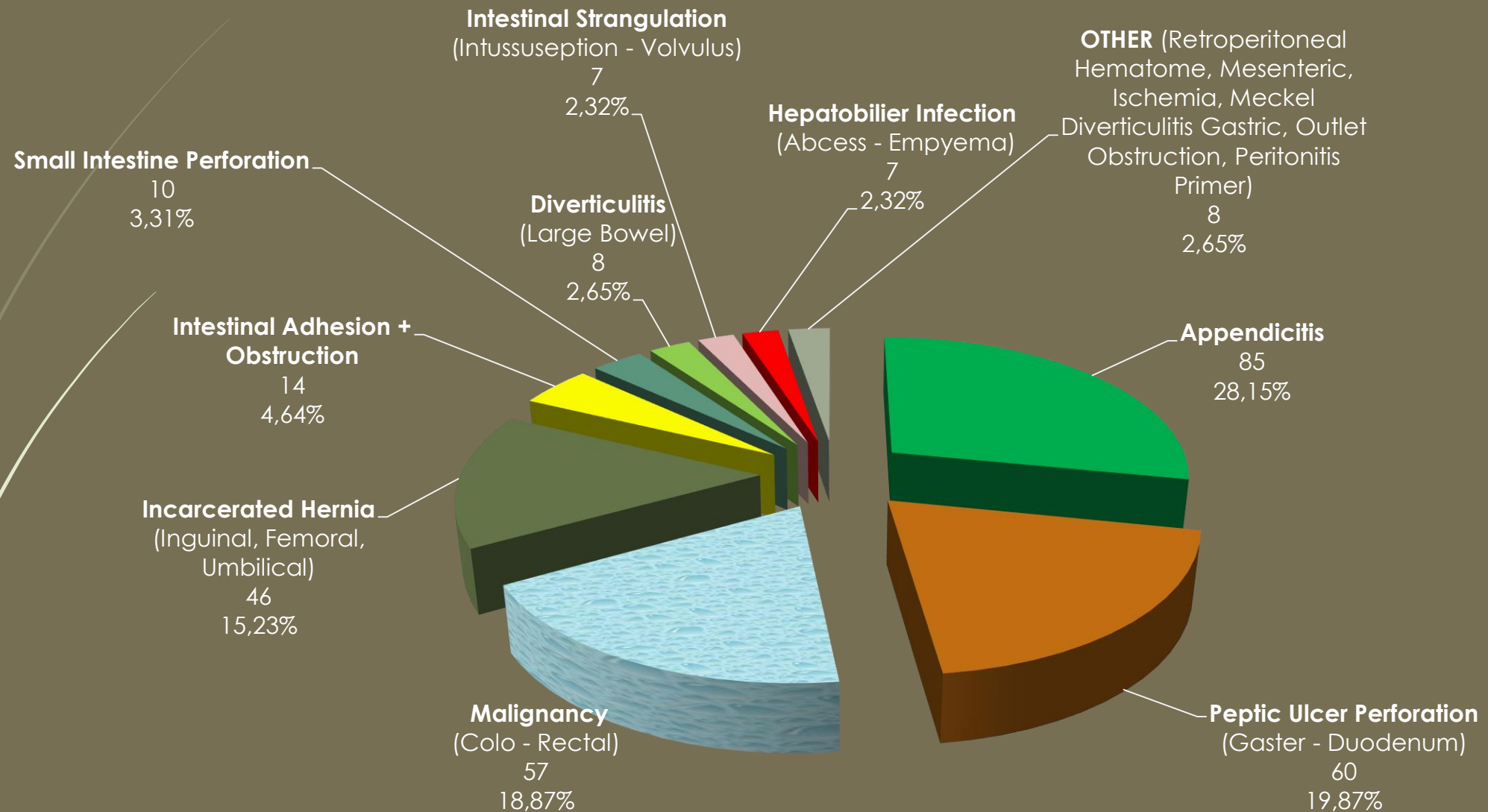
7 Types of surgery account 80.1% of EGS, 80.3% deaths, 78.9% complications

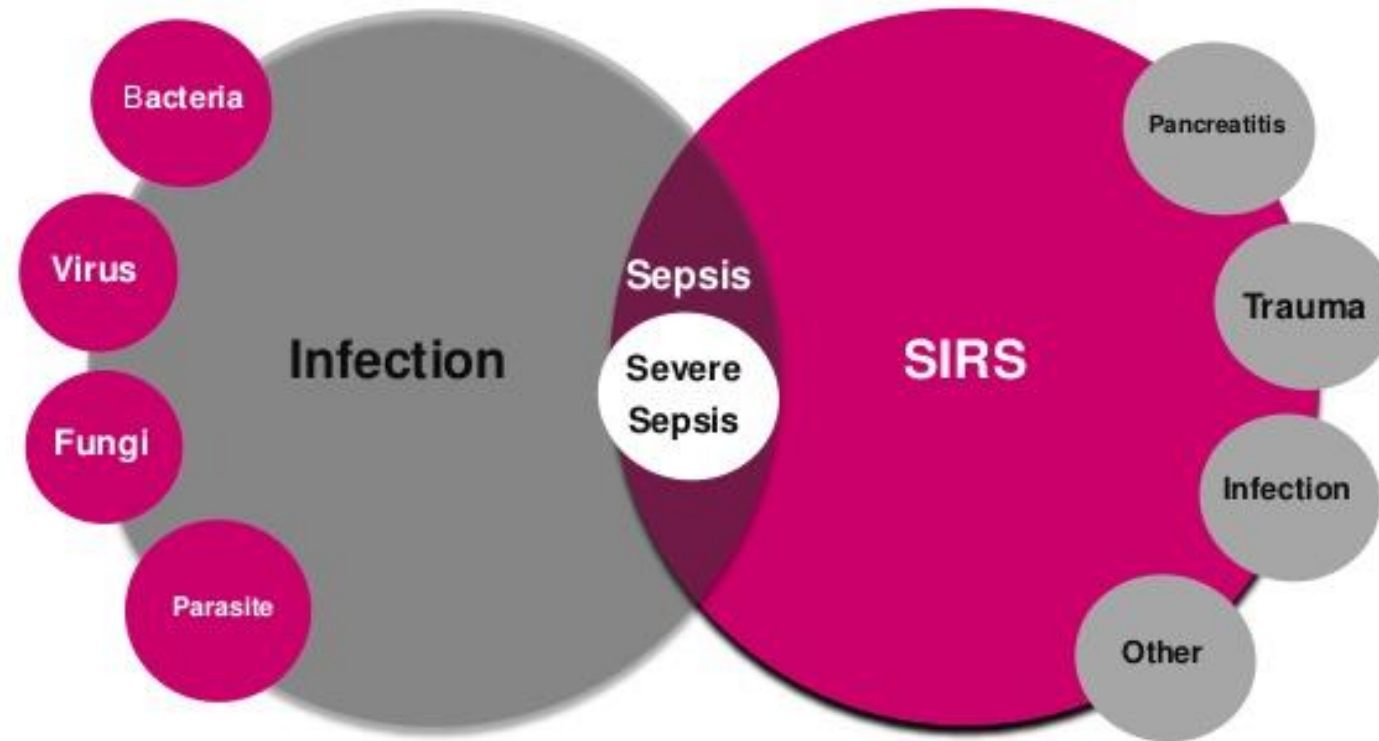
SURGERY	n	Mortality Rate (%)	Morbidity Rate (%)
Appendectomy	682,043	0,08	7,27
Cholecystectomy	619,197	0,22	8,06
Partial Colectomy	138,992	5,33	42,80
Peritoneal Adhesion	102,856	1,59	28,09
Small Bowel Resection	78,478	6,47	46,94
Peptic Ulcer Disease	31,571	6,83	42,00
Laparotomy	9,412	23,76	40,15

Departemen - SMF Ilmu Bedah FK Unair - RSUD Dr. Soetomo
ACUTE ABDOMEN DIGESTIVE OPERATION 2016

	DIAGNOSIS	n	%
1	Appendicitis	85	28,15
2	Peptic Ulcer Perforation (Gaster - Duodenum)	60	19,87
3	Malignancy (Colo - Rectal)	57	18,87
4	Incarcerated Hernia (Inguinal, Femoral, Umbilical)	46	15,23
5	Intestinal Adhesion + Obstruction	14	4,64
6	Small Intestine Perforation	10	3,31
7	Diverticulitis (Large Bowel)	8	2,65
8	Intestinal Strangulation (Intussuseption - Volvulus)	7	2,32
9	Hepatobilier Infection (Abcess - Empyema)	7	2,32
10	OTHER (Retroperitoneal Hematome, Mesenteric, Ischemia, Meckel Diverticulitis Gastric, Outlet Obstruction, Peritonitis Primer)	8	2,65
	TOTAL	302	100
	Operative Complication (Re-Open) Clavien Dindo Cl.3/4/5	62	20,53
	Abdominal Trauma Surgery	50	

ACUTE ABDOMEN DIGESTIVE OPERATION 2016





Assessment of Clinical Criteria for Sepsis For the Third International Consensus Definitions for Sepsis and Septic Shock (Sepsis-3)

Christopher W. Seymour, MD, MSc; Vincent X. Liu, MD, MSc; Theodore J. Iwashyna, MD, PhD; Frank M. Brunkhorst, MD; Thomas D. Rea, MD, MPH; André Scherag, PhD; Gordon Rubenfeld, MD, MSc; Jeremy M. Kahn, MD, MSc; Manu Shankar-Hari, MD, MSc; Mervyn Singer, MD, FRCP; Clifford S. Deutschman, MD, MS; Gabriel J. Escobar, MD; Derek C. Angus, MD, MPH

IMPORTANCE The Third International Consensus Definitions Task Force defined sepsis as “life-threatening organ dysfunction due to a dysregulated host response to infection.” The performance of clinical criteria for this sepsis definition is unknown.

OBJECTIVE To evaluate the validity of clinical criteria to identify patients with suspected infection who are at risk of sepsis.

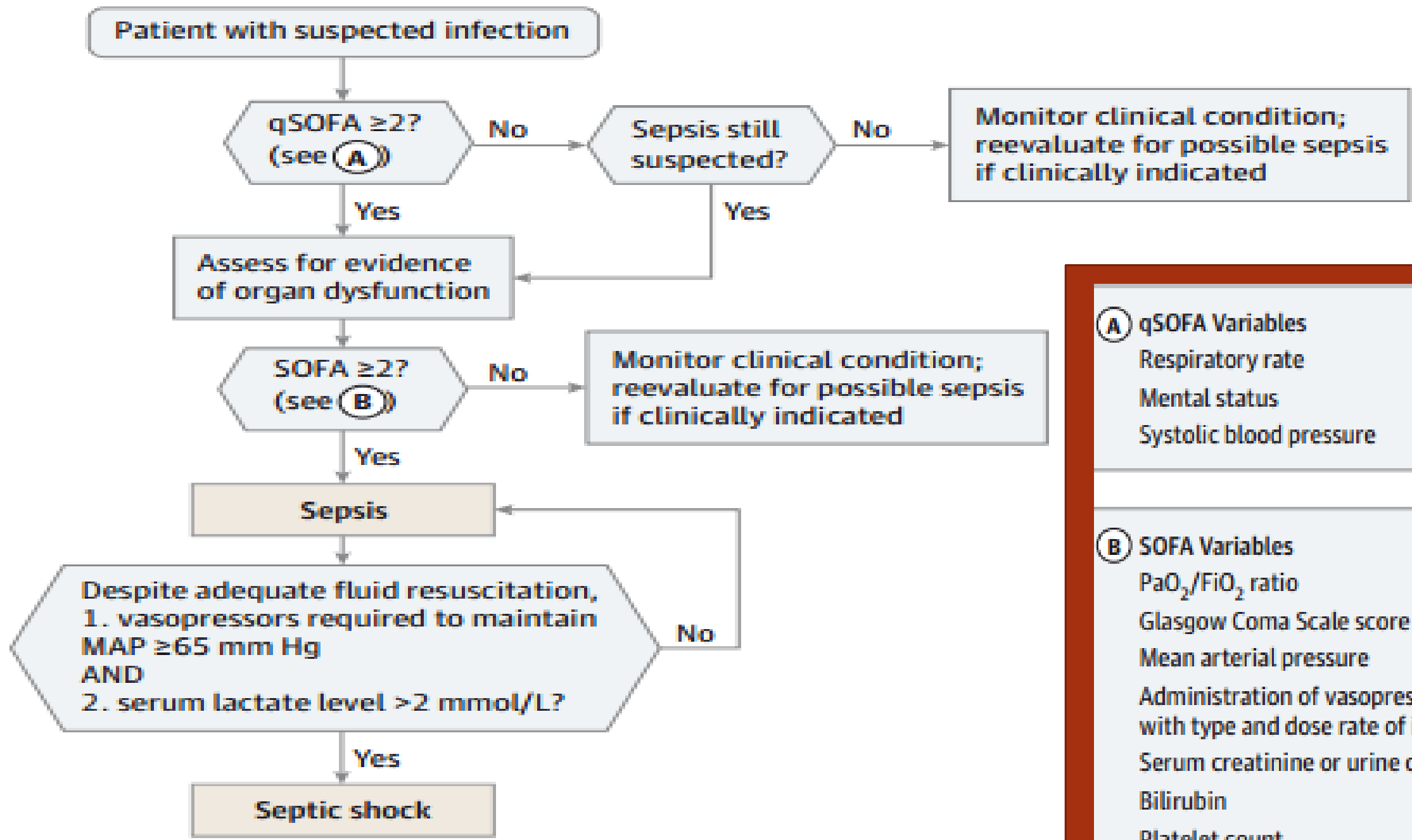
DESIGN, SETTINGS, AND POPULATION Among 1.3 million electronic health record encounters from January 1, 2010, to December 31, 2012, at 12 hospitals in southwestern Pennsylvania, we identified those with suspected infection in whom to compare criteria. Confirmatory analyses were performed in 4 data sets of 706 399 out-of-hospital and hospital encounters at 165 US and non-US hospitals ranging from January 1, 2008, until December 31, 2013.

Table 1. Variables for Candidate Sepsis Criteria Among Encounters With Suspected Infection

Systemic Inflammatory Response Syndrome (SIRS) Criteria (Range, 0-4 Criteria)	Sequential [Sepsis-related] Organ Failure Assessment (SOFA) (Range, 0-24 Points)	Logistic Organ Dysfunction System (LODS) (Range, 0-22 Points) ^a	Quick Sequential [Sepsis-related] Organ Failure Assessment (qSOFA) (Range, 0-3 Points)
Respiratory rate, breaths per minute	PaO ₂ /FiO ₂ ratio	PaO ₂ /FiO ₂ ratio	Respiratory rate, breaths per minute
White blood cell count, 10 ⁹ /L	Glasgow Coma Scale score	Glasgow Coma Scale score	Glasgow Coma Scale score
Bands, %	Mean arterial pressure, mm Hg	Systolic blood pressure, mm Hg	Systolic blood pressure, mm Hg
Heart rate, beats per minute	Administration of vasopressors with type/dose/rate of infusion	Heart rate, beats per minute	
Temperature, °C	Serum creatinine, mg/dL, or urine output, mL/d	Serum creatinine, mg/dL	
Arterial carbon dioxide tension, mm Hg	Bilirubin, mg/dL	Bilirubin, mg/dL	
	Platelet count, 10 ⁹ /L	Platelet count, 10 ⁹ /L	
		White blood cell count, 10 ⁹ /L	
		Urine output, L/d	
		Serum urea, mmol/L	
		Prothrombin time, % of standard	

Abbreviation: FiO₂, fraction of inspired oxygen.

^a Measurement units for LODS variables per original description by Le Gall et al.⁹



- (A) qSOFA Variables**
- Respiratory rate
 - Mental status
 - Systolic blood pressure

- (B) SOFA Variables**
- PaO₂/FiO₂ ratio
 - Glasgow Coma Scale score
 - Mean arterial pressure
 - Administration of vasopressors with type and dose rate of infusion
 - Serum creatinine or urine output
 - Bilirubin
 - Platelet count

Box 1. SIRS (Systemic Inflammatory Response Syndrome)

Two or more of:

Temperature $>38^{\circ}\text{C}$ or $<36^{\circ}\text{C}$

Heart rate $>90/\text{min}$

Respiratory rate $>20/\text{min}$ or $\text{Paco}_2 <32 \text{ mm Hg}$ (4.3 kPa)

White blood cell count $>12\,000/\text{mm}^3$ or $<4000/\text{mm}^3$
or $>10\%$ immature bands

From Bone et al.⁹

Box 4. qSOFA (Quick SOFA) Criteria

Respiratory rate $\geq 22/\text{min}$

Altered mentation

Systolic blood pressure $\leq 100 \text{ mm Hg}$

