

# 敗血症の定義と診断の変更について

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名古屋市立大学大学院医学研究科

先進急性期医療学

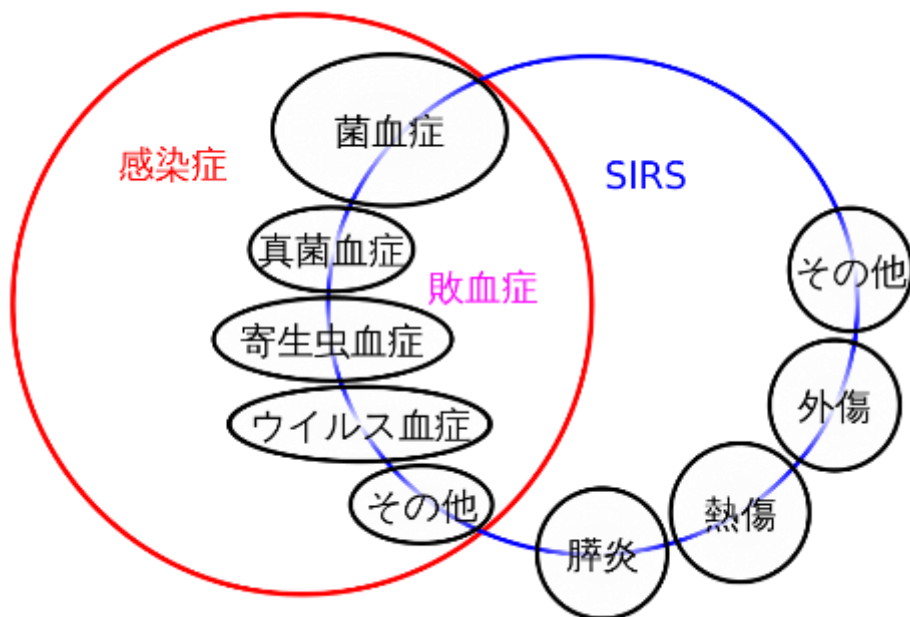
松嶋麻子

# 敗血症の定義

【敗血症の定義】 2001年～

・全身炎症を伴う感染症

SIRS(Systemic Inflammatory Response Syndrome)



## Box 1. SIRS (Systemic Inflammatory Response Syndrome)

Two or more of:

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

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

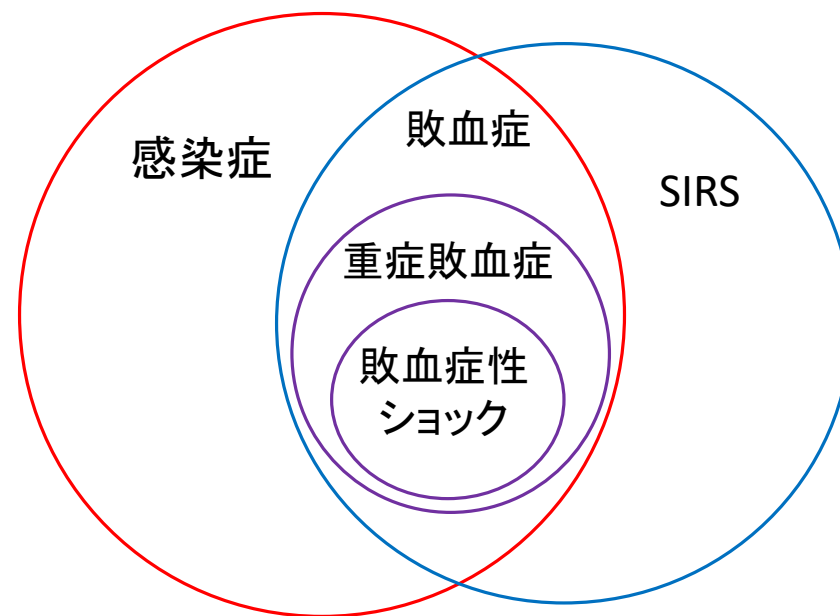
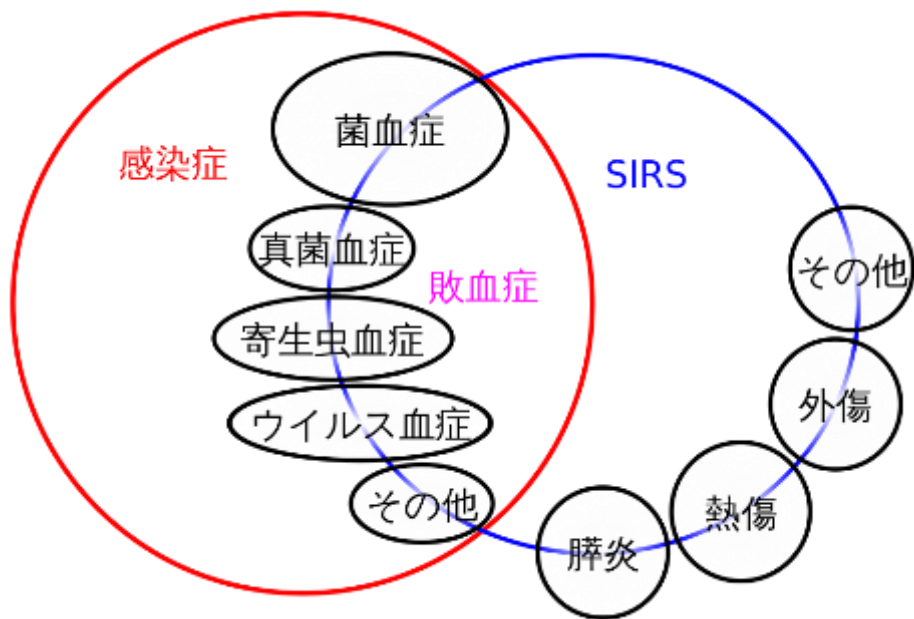
Respiratory rate  $>20/\text{min}$  or  $\text{Paco}_2 <32 \text{ mm Hg (4.3 kPa)}$

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

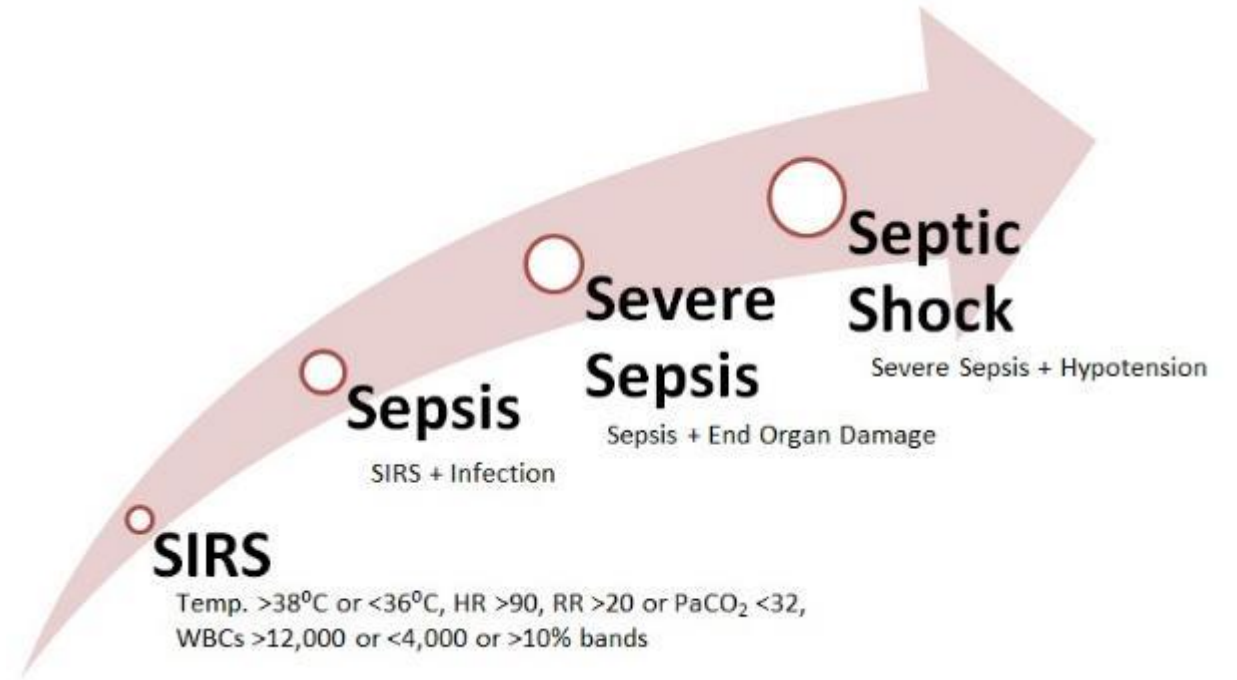
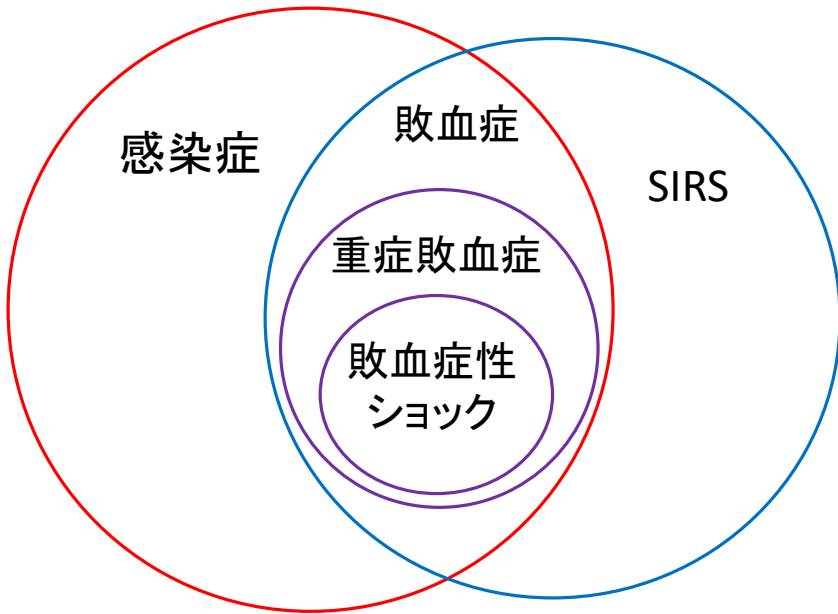
From Bone et al.<sup>9</sup>

# 敗血症の概念

【敗血症、重症敗血症、敗血症性ショック】

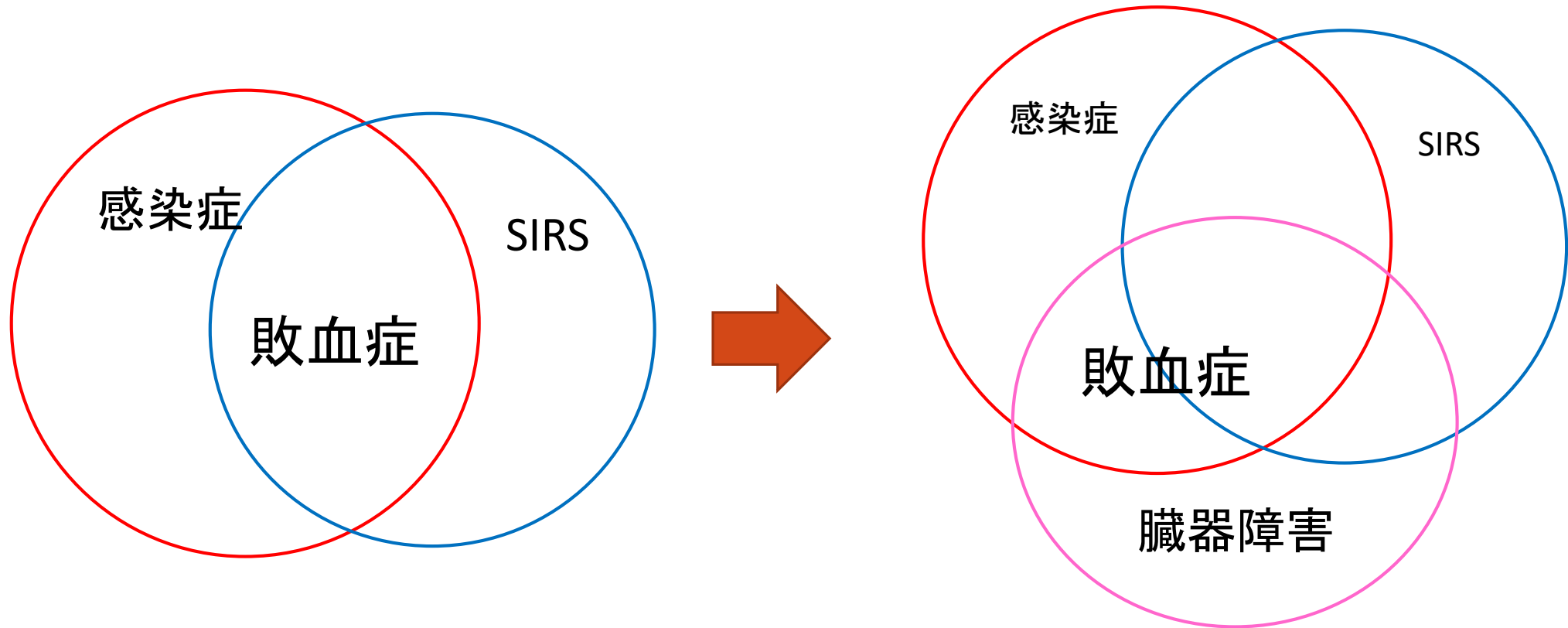


# 敗血症の概念

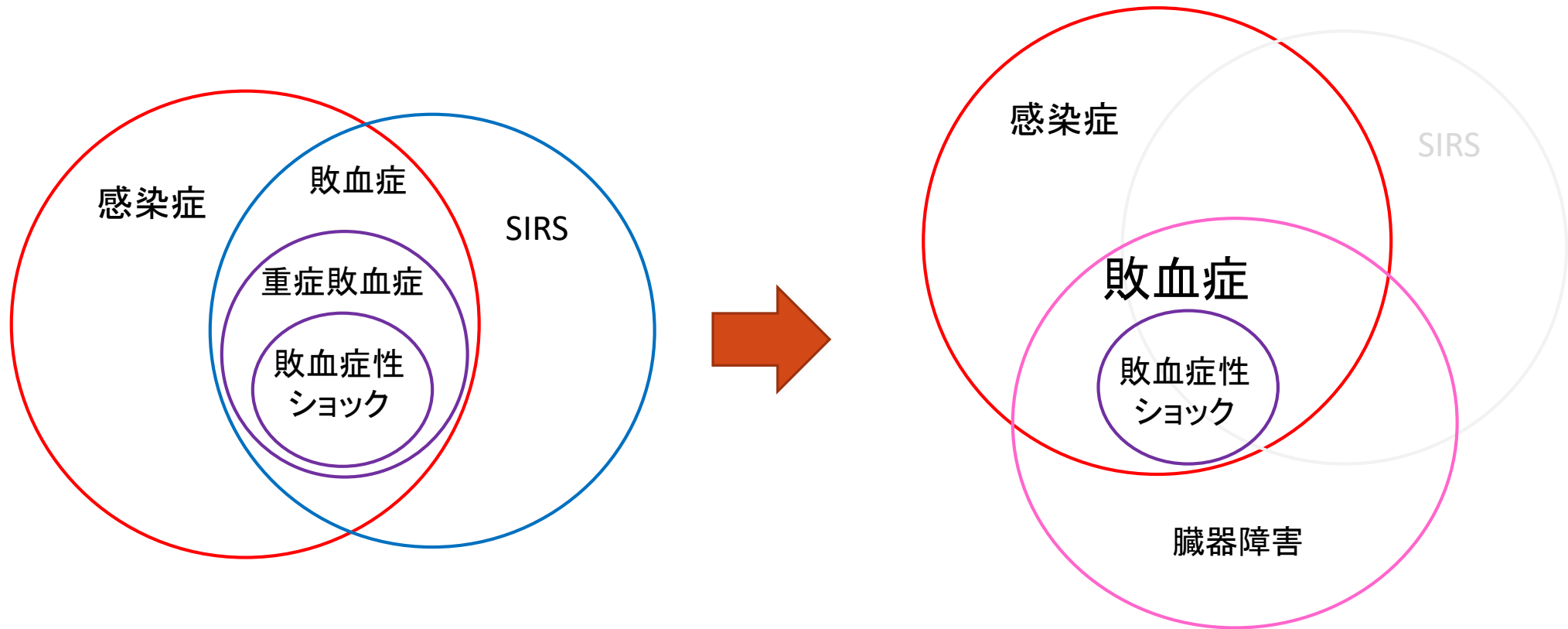


# 敗血症の概念の変更

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# 敗血症の概念の変更



# 敗血症の新定義 sepsis 3

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Clinical Review & Education

Special Communication | CARING FOR THE CRITICALLY ILL PATIENT

## The Third International Consensus Definitions for Sepsis and Septic Shock (Sepsis-3)

Mervyn Singer, MD, FRCP; Clifford S. Deutschman, MD, MS; Christopher Warren Seymour, MD, MSc; Manu Shankar-Hari, MSc, MD, FFICM; Djillali Annane, MD, PhD; Michael Bauer, MD; Rinaldo Bellomo, MD; Gordon R. Bernard, MD; Jean-Daniel Chiche, MD, PhD; Craig M. Coopersmith, MD; Richard S. Hotchkiss, MD; Mitchell M. Levy, MD; John C. Marshall, MD; Greg S. Martin, MD, MSc; Steven M. Opal, MD; Gordon D. Rubenfeld, MD, MS; Tom van der Poll, MD, PhD; Jean-Louis Vincent, MD, PhD; Derek C. Angus, MD, MPH

JAMA. 2016;315(8):801-810. doi:[10.1001/jama.2016.0287](https://doi.org/10.1001/jama.2016.0287)

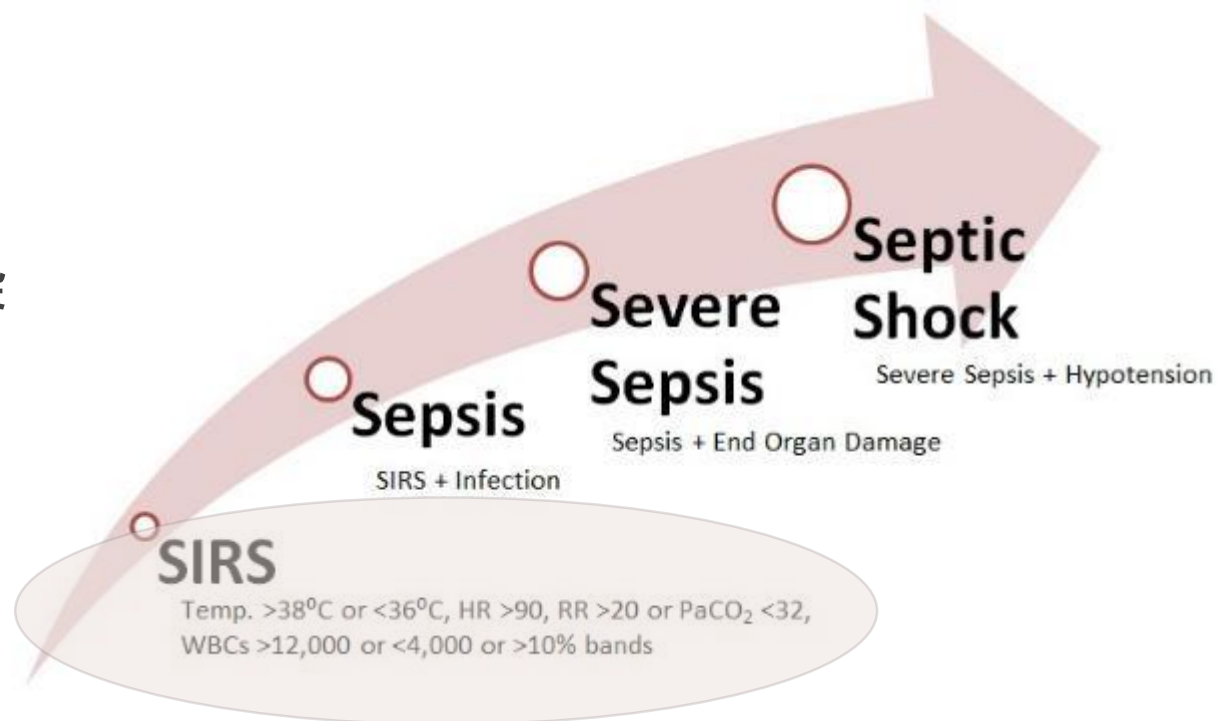
# 敗血症の新定義 sepsis 3

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## 【敗血症の定義】

2001年～

- ・全身炎症を伴う感染





# 敗血症の新定義 sepsis 3

## SOFA Score (ICU患者)

Table 1. Sequential [Sepsis-Related] Organ Failure Assessment Score<sup>a</sup>

System	Score				
	0	1	2	3	4
<b>Respiration</b>					
Pao <sub>2</sub> /Fio <sub>2</sub> , mm Hg (kPa)	≥400 (53.3)	<400 (53.3)	<300 (40)	<200 (26.7) with respiratory support	<100 (13.3) with respiratory support
<b>Coagulation</b>					
Platelets, ×10 <sup>3</sup> /μL	≥150	<150	<100	<50	<20
<b>Liver</b>					
Bilirubin, mg/dL (μmol/L)	<1.2 (20)	1.2-1.9 (20-32)	2.0-5.9 (33-101)	6.0-11.9 (102-204)	>12.0 (204)
Cardiovascular	MAP ≥70 mm Hg	MAP <70 mm Hg	Dopamine <5 or dobutamine (any dose) <sup>b</sup>	Dopamine 5.1-15 or epinephrine ≤0.1 or norepinephrine ≤0.1 <sup>b</sup>	Dopamine >15 or epinephrine >0.1 or norepinephrine >0.1 <sup>b</sup>
<b>Central nervous system</b>					
Glasgow Coma Scale score <sup>c</sup>	15	13-14	10-12	6-9	<6
<b>Renal</b>					
Creatinine, mg/dL (μmol/L)	<1.2 (110)	1.2-1.9 (110-170)	2.0-3.4 (171-299)	3.5-4.9 (300-440)	>5.0 (440)
Urine output, mL/d				<500	<200

# 敗血症の新定義 sepsis 3 quick SOFA criteria (非ICU患者)

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## Box 4. qSOFA (Quick SOFA) Criteria

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

Altered mentation

Systolic blood pressure  $\leq 100$  mm Hg

# 敗血症の新定義 sepsis 3

## Box 3. New Terms and Definitions

- Sepsis is defined as life-threatening organ dysfunction caused by a dysregulated host response to infection.
- Organ dysfunction can be identified as an acute change in total SOFA score  $\geq 2$  points consequent to the infection.
  - The baseline SOFA score can be assumed to be zero in patients not known to have preexisting organ dysfunction.
  - A SOFA score  $\geq 2$  reflects an overall mortality risk of approximately 10% in a general hospital population with suspected infection. Even patients presenting with modest dysfunction can deteriorate further, emphasizing the seriousness of this condition and the need for prompt and appropriate intervention, if not already being instituted.
- In lay terms, sepsis is a life-threatening condition that arises when the body's response to an infection injures its own tissues and organs.
- Patients with suspected infection who are likely to have a prolonged ICU stay or to die in the hospital can be promptly identified at the bedside with qSOFA, ie, alteration in mental status, systolic blood pressure  $\leq 100$  mm Hg, or respiratory rate  $\geq 22$ /min.

## 【敗血症】

- ・敗血症は感染症に対して生体が制御不能な状態となり致死的な臓器不全を発症している状態を指す。
- ・臓器障害は感染によりSOFAスコアの合計が2点以上、急激に上昇した場合とする。
- ・敗血症は感染に対する生体反応が自身の組織や臓器を障害している致死的な状態を指す。
- ・感染症を疑う患者において、長期ICU滞在や入院中死亡が予想される患者はqSOFAで判別することができる。

# 敗血症の新定義 sepsis 3

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## 【敗血症性ショック】

• Septic shock is a subset of sepsis in which underlying circulatory and cellular/metabolic abnormalities are profound enough to substantially increase mortality.

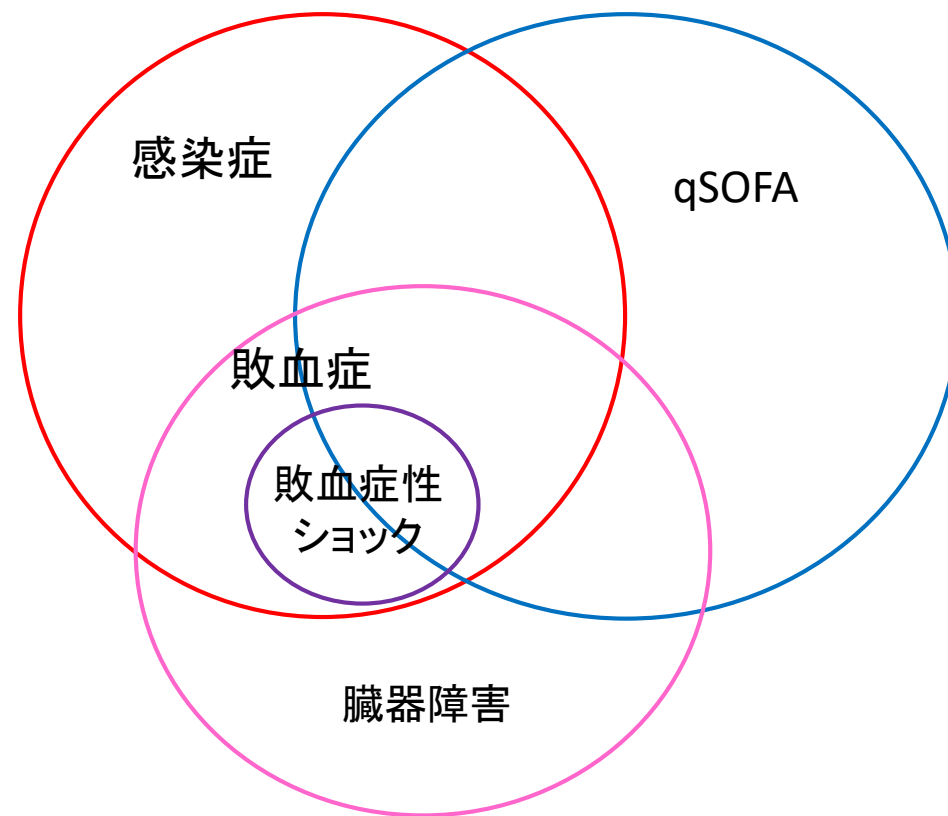
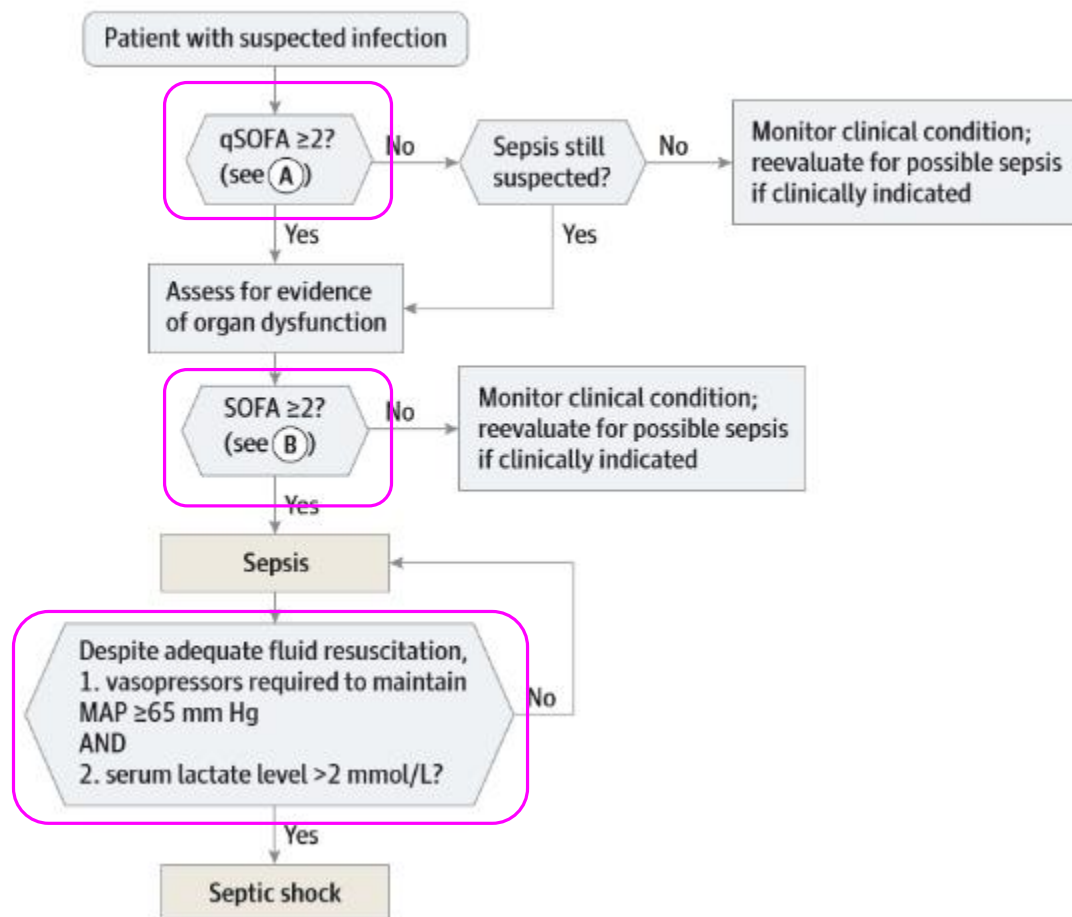
• Patients with septic shock can be identified with a clinical construct of sepsis with persisting hypotension requiring vasopressors to maintain MAP  $\geq$  65 mm Hg and having a serum lactate level  $>$  2 mmol/L (18 mg/dL) despite adequate volume resuscitation. With these criteria, hospital mortality is in excess of 40%.

・敗血症性ショックは敗血症の中で、循環障害や細胞レベルの代謝異常により死亡率の高い病態を指す。

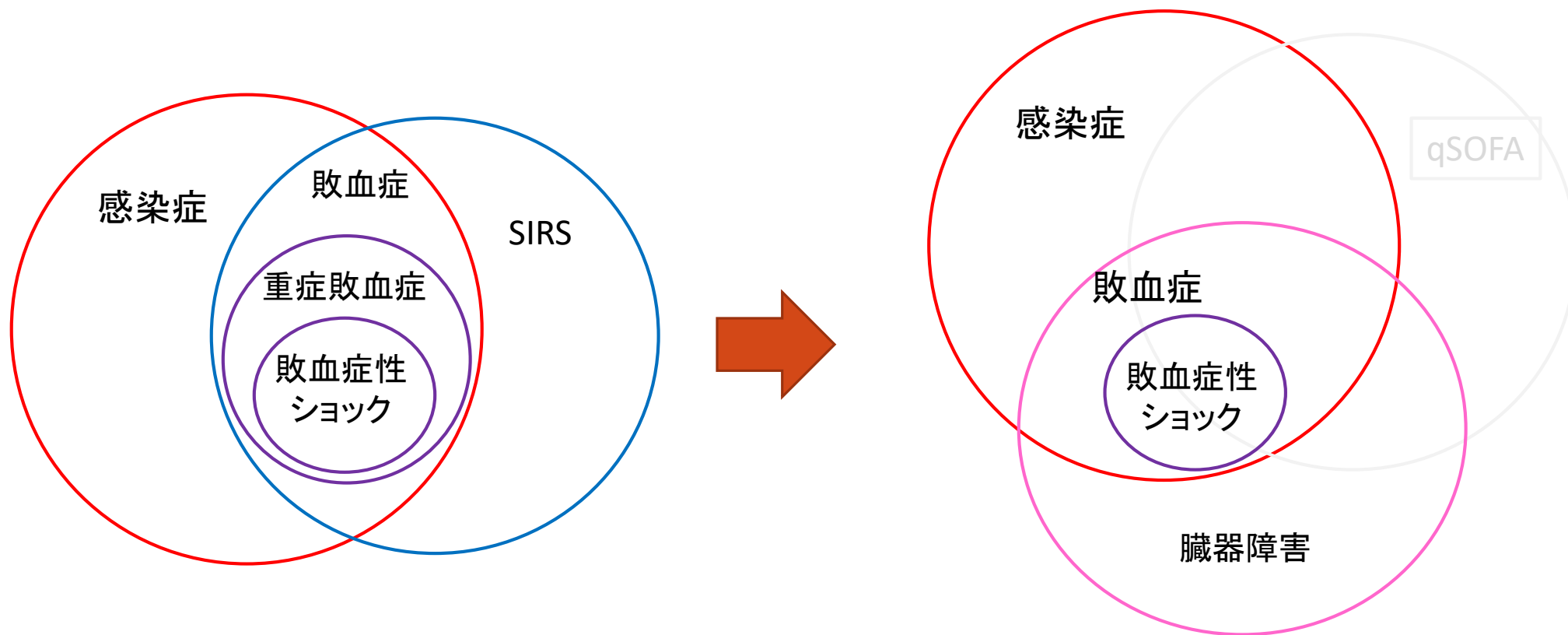
・敗血症性ショックは十分な輸液負荷を行った後でも平均血圧65mmHg以上を維持するために血管収縮薬を必要とする状態かつ血清乳酸値 $>$ 2mmol/L(18mg/dL)の状態を指す。

# 敗血症の新定義 sepsis 3

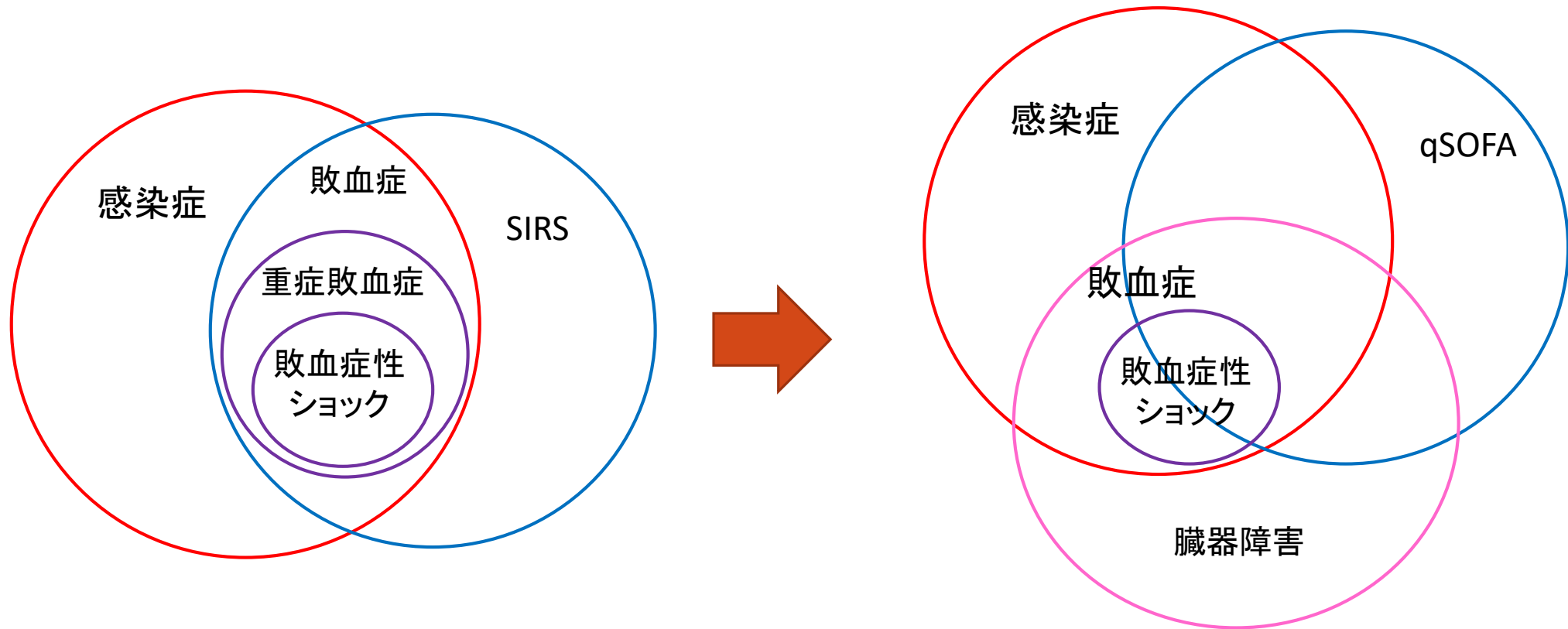
Figure. Operationalization of Clinical Criteria Identifying Patients With Sepsis and Septic Shock



# 敗血症の概念 「新」

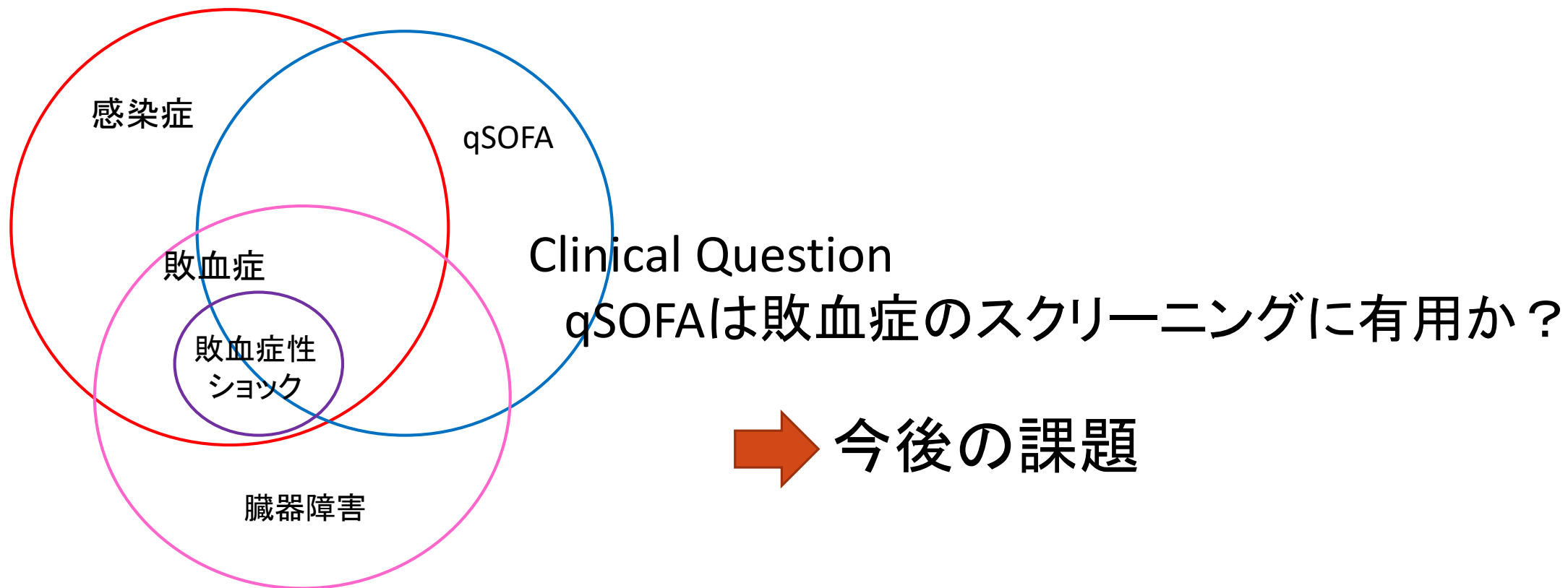


# 敗血症の概念 「新」



# 敗血症の新定義 sepsis 3

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# まとめ

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1. Sepsis 3では致死的な臓器障害を伴う感染症を「敗血症」と定義している。
2. Sepsis 3における「qSOFA」はICU以外で致死的な敗血症を早期に発見するための指標だが、感染症による院内死亡をアウトカムとして定められており、敗血症の早期指標になるかどうかは今後の検討課題である。
3. 新たな定義の開発、発展のためにも救急・集中治療のデータベース構築が重要である。