

# An audit into the recognition of sepsis in older patients and implementation of the sepsis 6.

Jack Marjot (FY2 Doctor) Louise Newton (FY2 Doctor) Alasdair Sinclair (FY1 Doctor) Felicity Elwin (FY1 Doctor) Mark Kinirons (Consultant Physician).  
Department of Aging & Health, St Thomas' Hospital, London

## 1. BACKGROUND:

- Sepsis is defined as the presence of two or more Systemic Inflammatory Response Syndrome (SIRS) criteria in response to infection<sup>1</sup>.
- Timely recognition of sepsis and implementation of the Sepsis Six has been shown to significantly reduce mortality<sup>1</sup>.
- Older people are at increased risk of developing sepsis due to risk factors such as multiple co-morbidities, malnutrition, altered immune function and poor performance status<sup>2</sup>. Although increased age carries a higher morbidity and mortality from sepsis, evidence shows that timely intervention does improve outcomes in this group of patients<sup>3</sup>.

## 2. OBJECTIVES:

- To recognise how SIRS presents in older patients.
- To compare current practice against the target of implementation of all components of the Sepsis Six within one hour of recognition of sepsis.
- To implement change and improve the care of the older patient with sepsis.

## 3. METHODS:

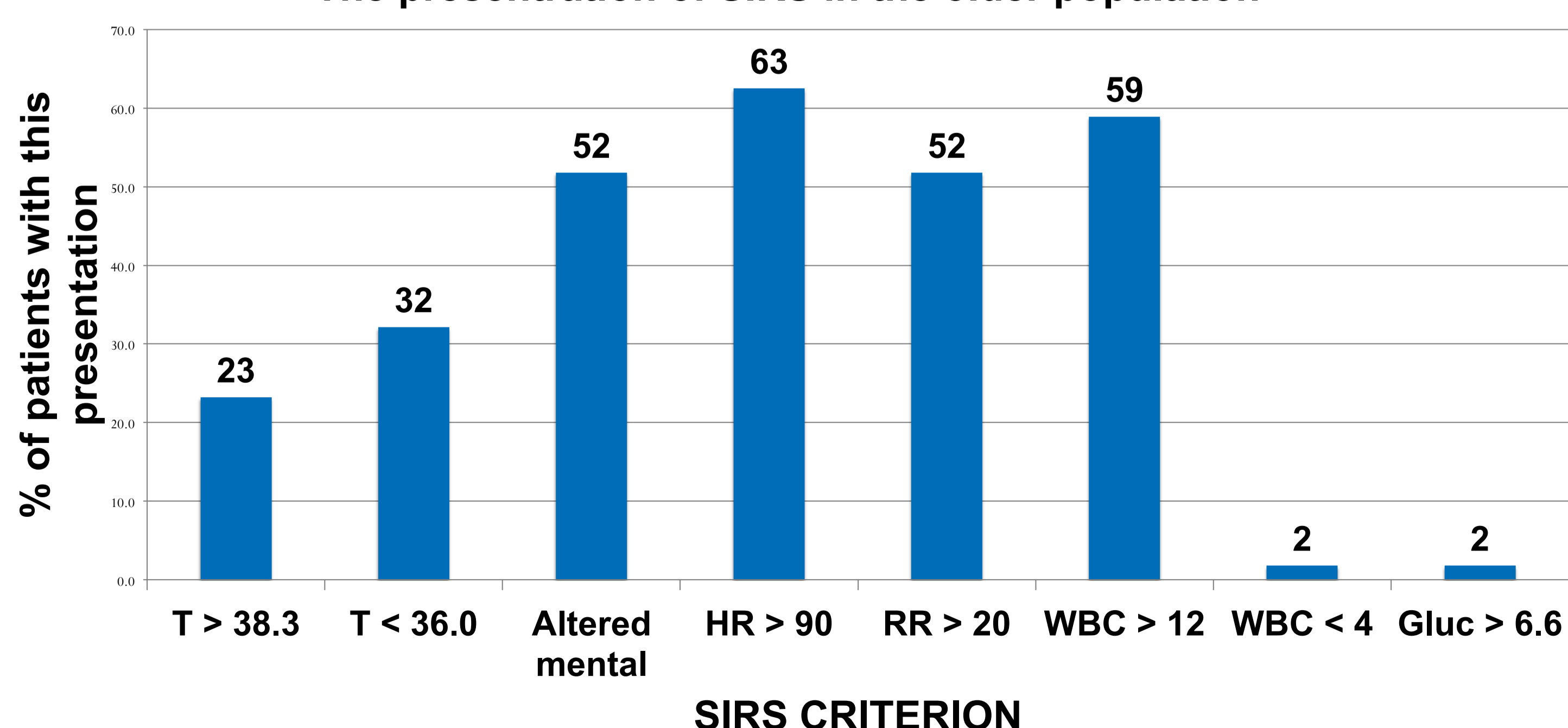
- One month period of initial data collection followed by intervention, with repeat audit two months later using the same methodology.
- Method for identification of septic older patients:
  - Identify patients with suspected infection
  - Use of notes and electronic patient records to retrospectively identify:
    - Which SIRS criteria were met
    - If/when each Sepsis Six criterion was implemented
    - In which setting sepsis first presented - A&E or Older Persons Unit (OPU).
- Statistical significance was calculated using Fisher's Exact Test and Unpaired Student's T test where appropriate.

## 4. INTERVENTIONS:

- Cycle 1 of the audit revealed that patients developing de novo sepsis on the OPU received fewer components of the sepsis 6 and therefore intervention was targeted to the OPU.
- Formal & informal education sessions were delivered to the MDT on the OPU, raising awareness of SIRS criteria and the need for timely intervention in sepsis.
- Posters on the OPU educating doctors and nurses about sepsis recognition.
- Adoption of the National Early Warning Score in April 2015 (after cycle 1) in which abnormal physiological parameters match SIRS criteria and trigger completion of a sepsis screening tool.

## 5. RESULTS:

The presentation of SIRS in the older population



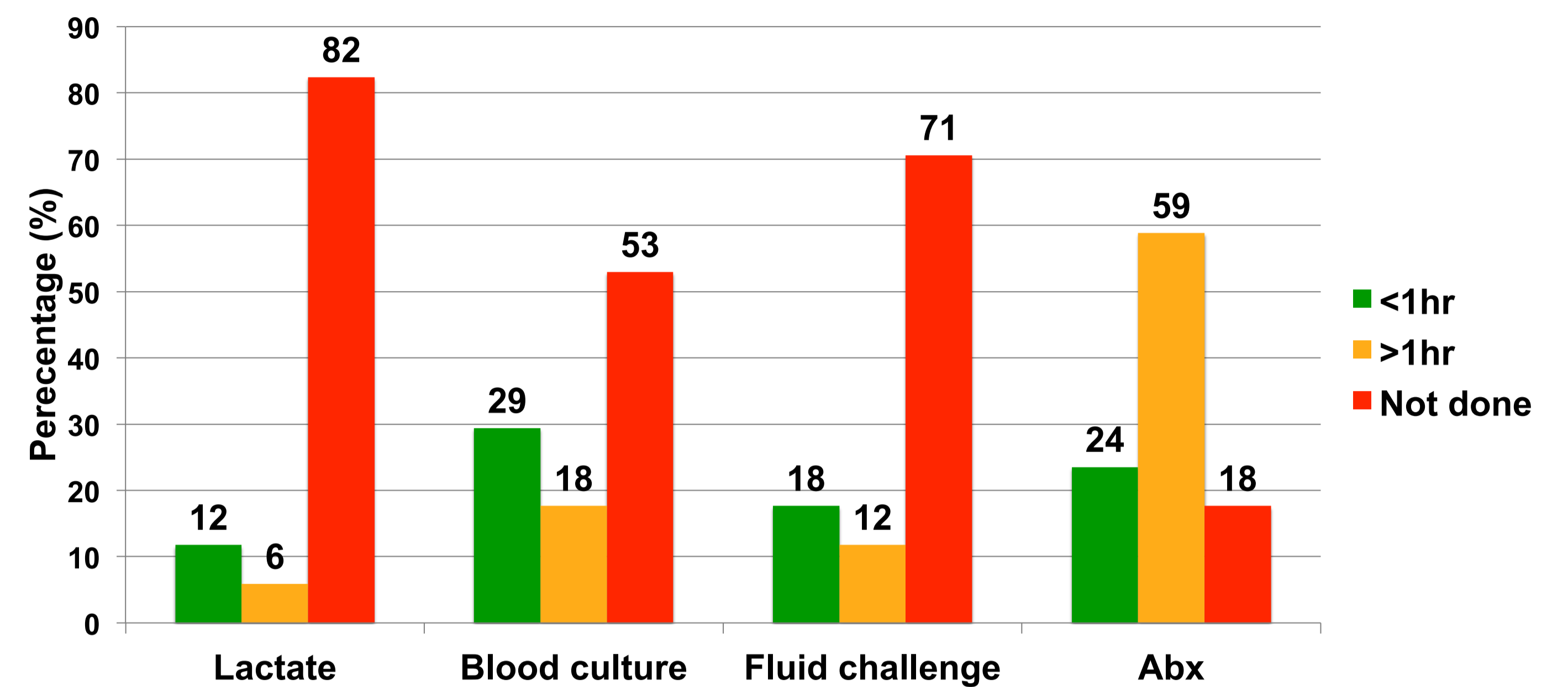
### References:

- Royal College of Physicians. *Acute Care Toolkit 9: Sepsis*. Royal College of Physicians, London. 2014 Sept.
- Martin GS, Mannino DM, Moss M. *The effect of age on the development and outcome of adult sepsis*. Critical care medicine. 2006 Jan;34(1):15-21.
- Girard TD, Ely EW. *Bacteremia and sepsis in older adults*. Clinics in geriatric medicine. 2007 Aug;23(3):633-47, viii.

## Results of audit cycle 1 (pre-intervention)

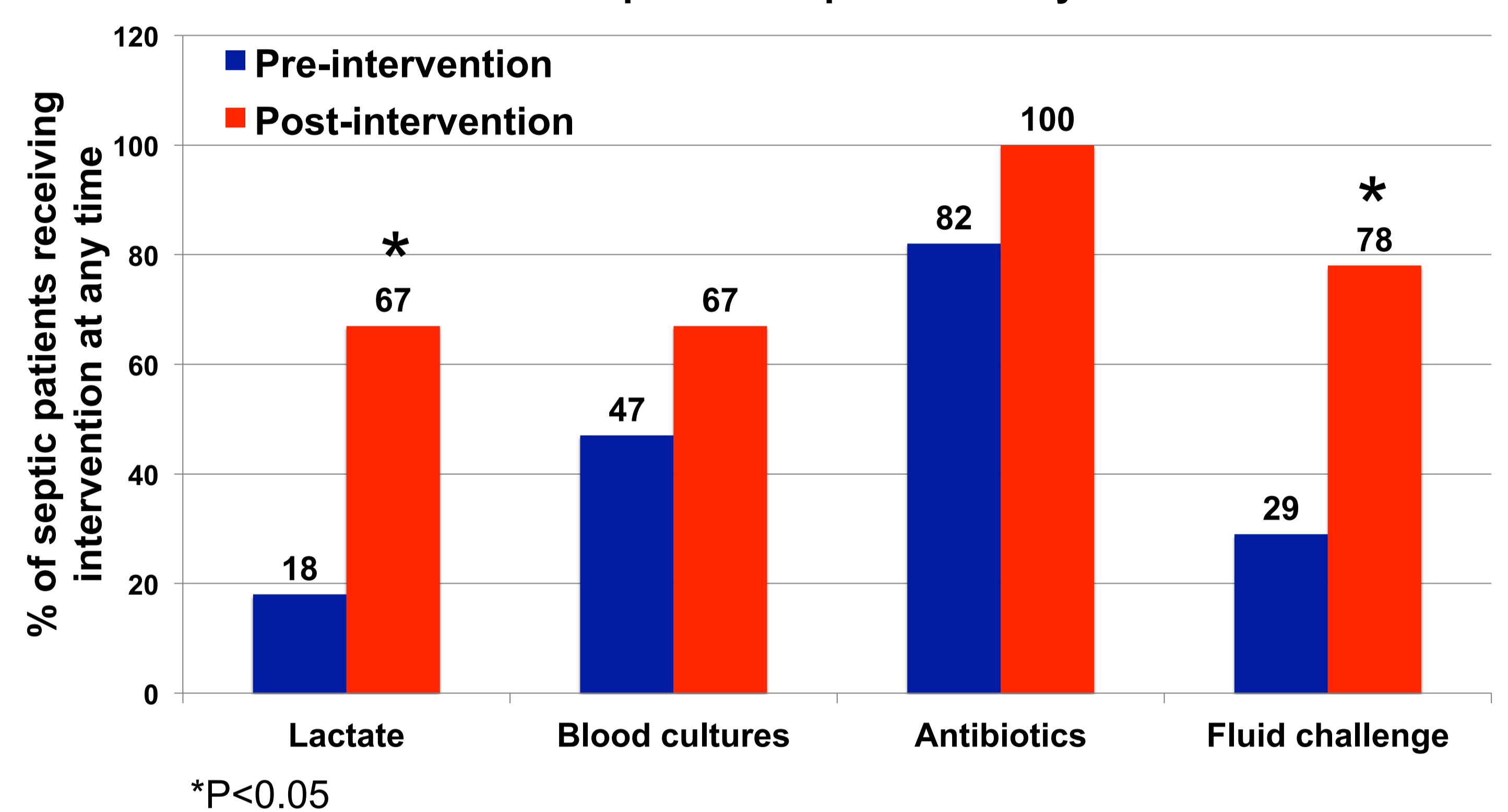
Across all clinical settings, 39 cases of sepsis were identified in older patients  
10.3% of these patients with sepsis had the full sepsis 6 within 1 hour.

Sepsis six administration on OPU pre-intervention

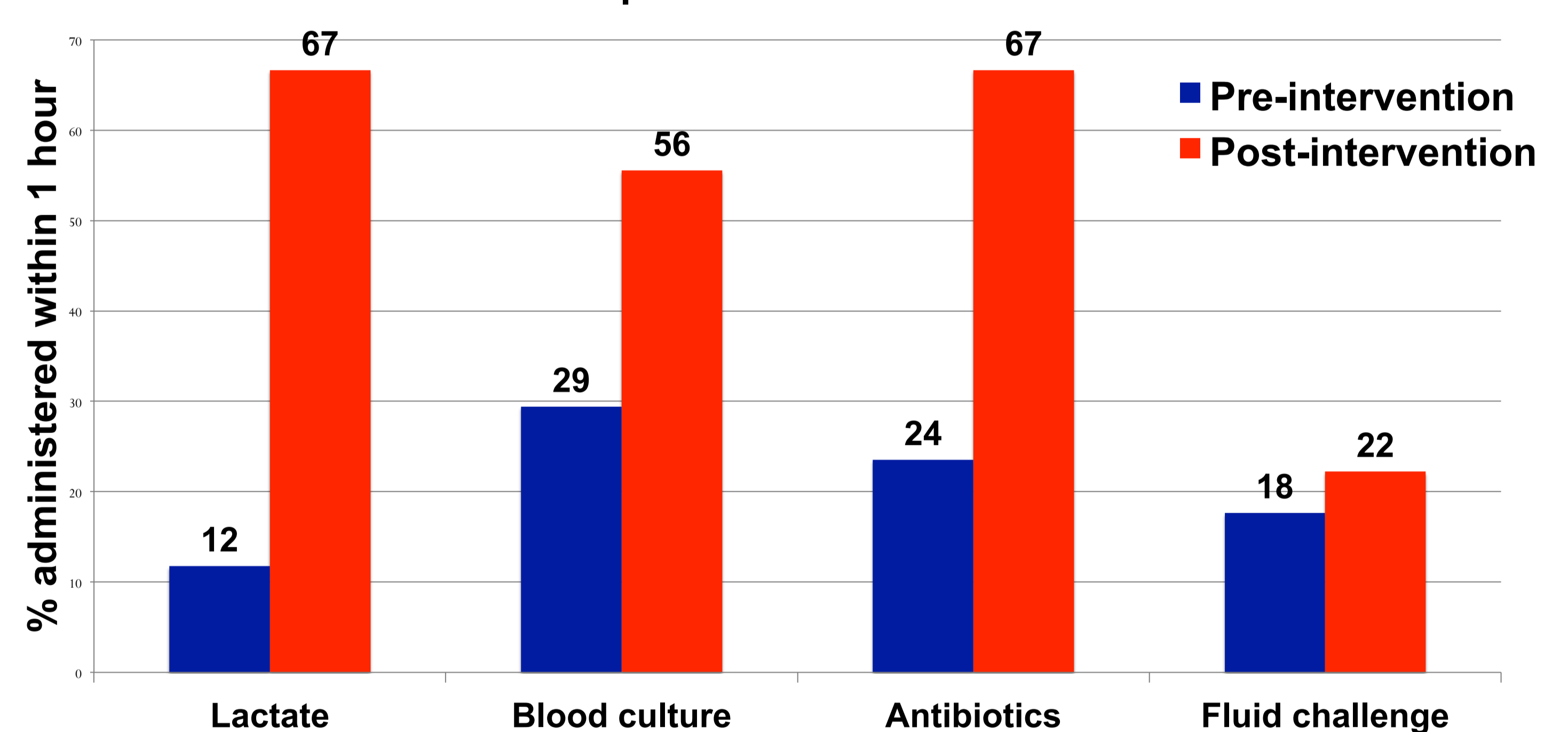


## Results of audit cycle 2 (post-intervention):

Administration of sepsis 6 component at any time on OPU



Percentage of septic patients on OPU receiving sepsis 6 component within 1 hour



## 6. DISCUSSION AND CONCLUSION:

- Tachycardia, tachypnoea, and altered mental status are the prominent clinical features of sepsis in the older person.
- Sepsis is managed sub-optimally in the older person.
- A focused intervention on the OPU significantly improved measurement of lactate and administration of a fluid challenge (within 24 hours)
- There was a trend towards more speedy application of the sepsis 6, but this did not achieve statistical significance.

## 7. LIMITATIONS:

- Administration of O2 and measurement of urine output is poorly documented, leading to potential under-recognition of these components.
- There are circumstances in which fluid challenge (e.g. severe heart failure) and oxygen (e.g. COPD) may not be appropriate, but there is poor documentation of this.
- The sample size is small, and may be underpowered to recognise statistical significance.