Oxford Academic Health Science Network

SUSPICION OF SEPSIS (SOS)

Measuring patient outcomes

How do we evaluate the impact of local, regional and national sepsis programmes?

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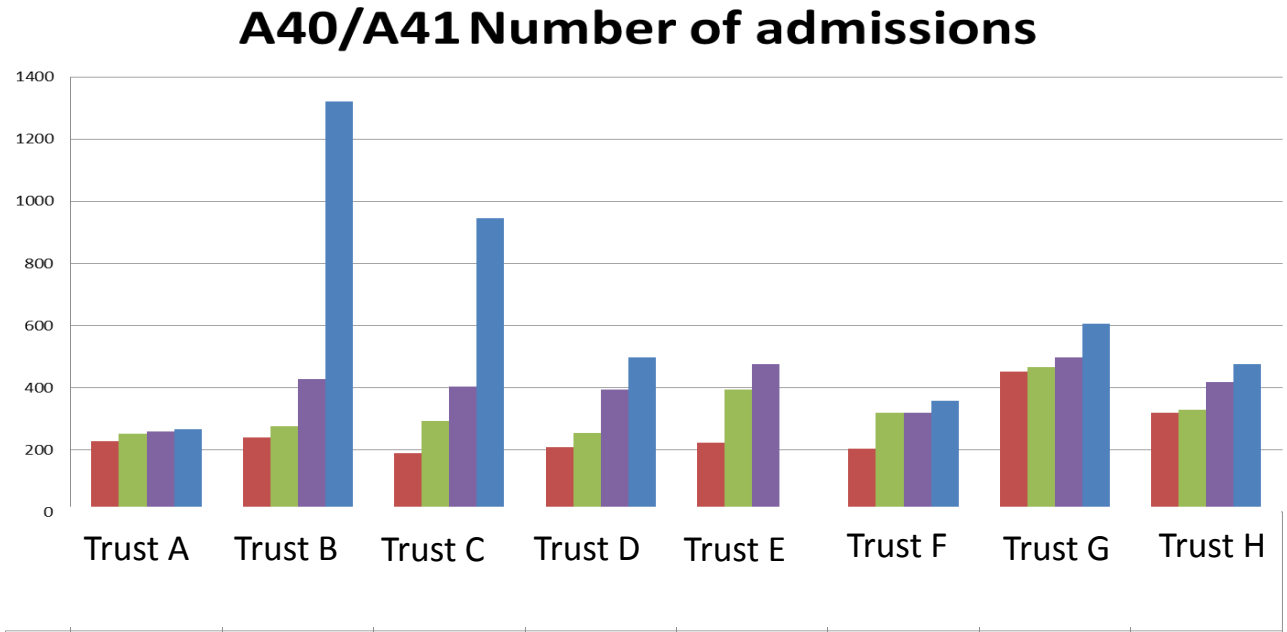
Measurement & surveillance

- **Surveillance** needed to monitor sepsis burden and assess impact of interventions
- Ideally need readily available metrics which can be applied and compared nationally
- HES data is most readily available

Limitations of HES sepsis codes

- Sensitivity of HES sepsis codes (A40/A41) is poor
- **Ascertainment bias** as sepsis initiatives (including CQUIN) change coding practice



	Trust A	Trust B	Trust C	Trust D	Trust E	Trust F	Trust G	Trust H
2012	228	240	190	209	223	204	452	320
2013	252	276	292	254	394	319	466	329
2014	260	428	404	394	477	320	497	417
2015	267	1321	946	497		357	607	477

Suspicion of sepsis (SOS)

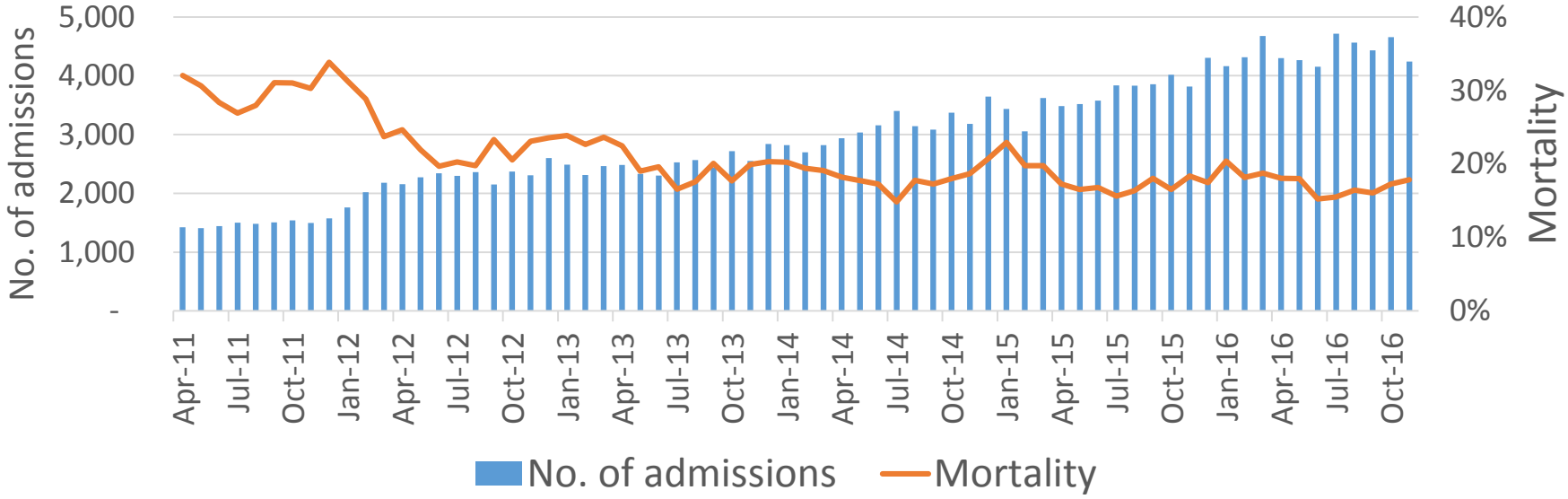
Need an improved **case definition** for surveillance.

'SOS' codes include all bacterial infections.

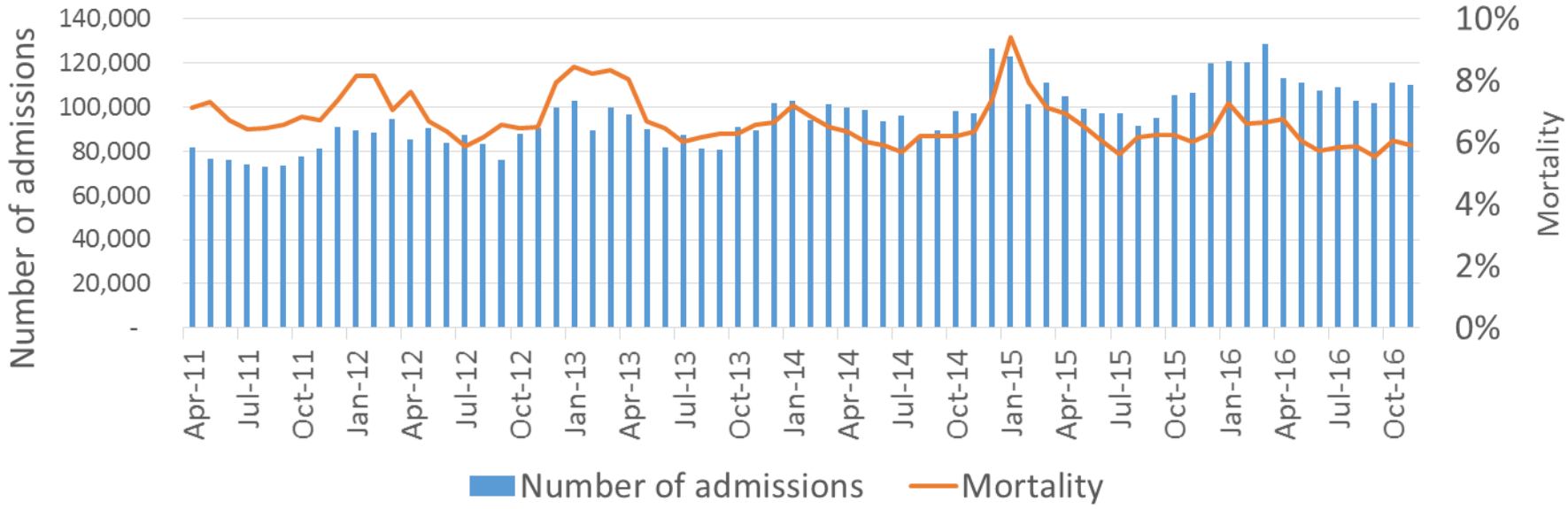
Advantages include:

- More sensitive
- Identifies wider group of patients at whom many of the sepsis interventions are directed
- Should be less susceptible to ascertainment bias (due to changing coding practices)

A419 – national trends over time

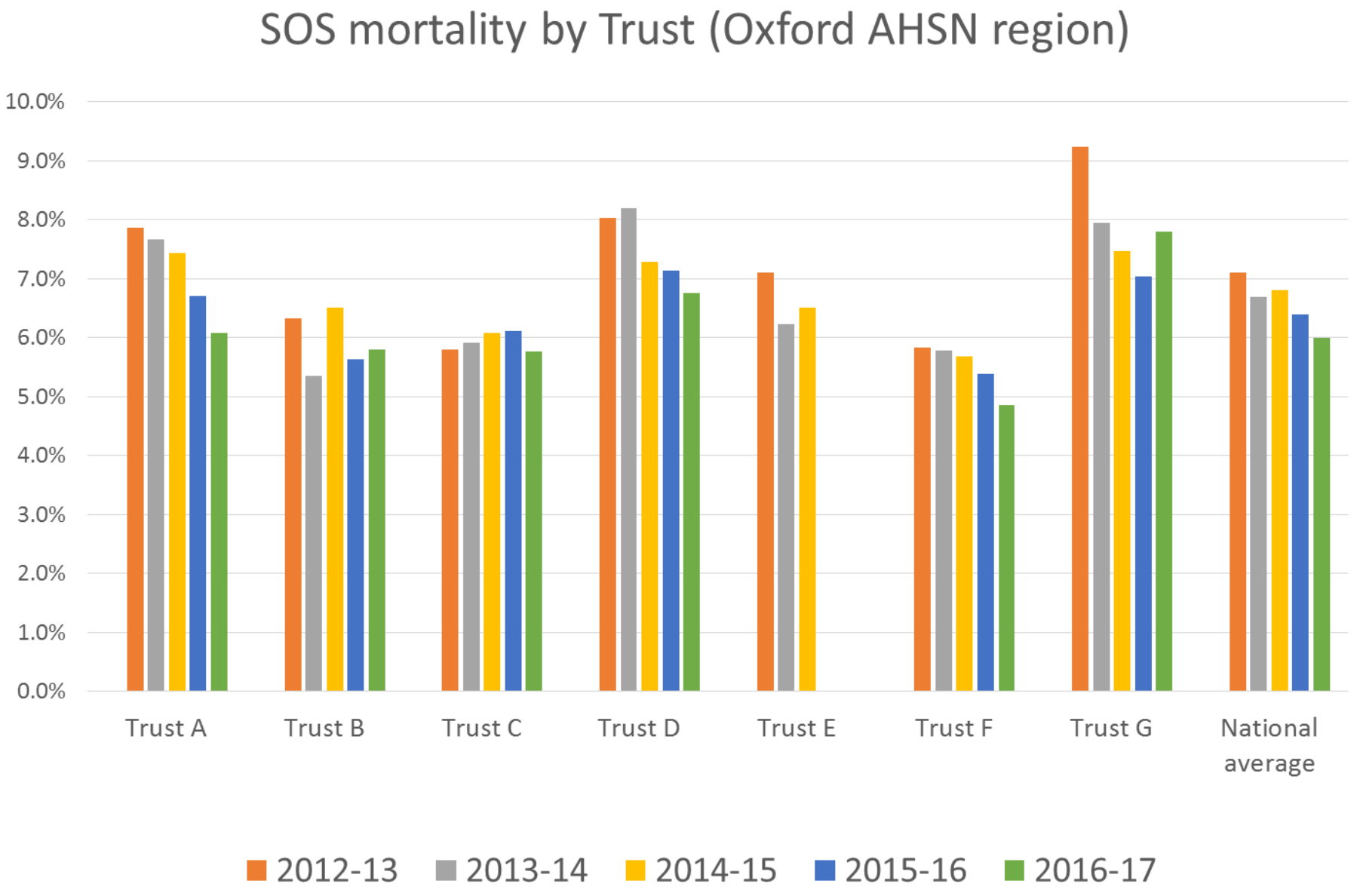


All SOS codes – national trends over time



SOS outcomes for Oxford AHSN region

	2012-13	2013-14	2014-15	2015-16	2016-17* (up to sept)
Admissions	52357	55077	63008	67817	33990
Mortality	6.7%	6.3%	6.3%	5.8%	5.2%
Length of stay	6.3	6.4	6.4	6.3	5.3
Readmissions	6.0%	6.2%	6.3%	6.6%	6.2%

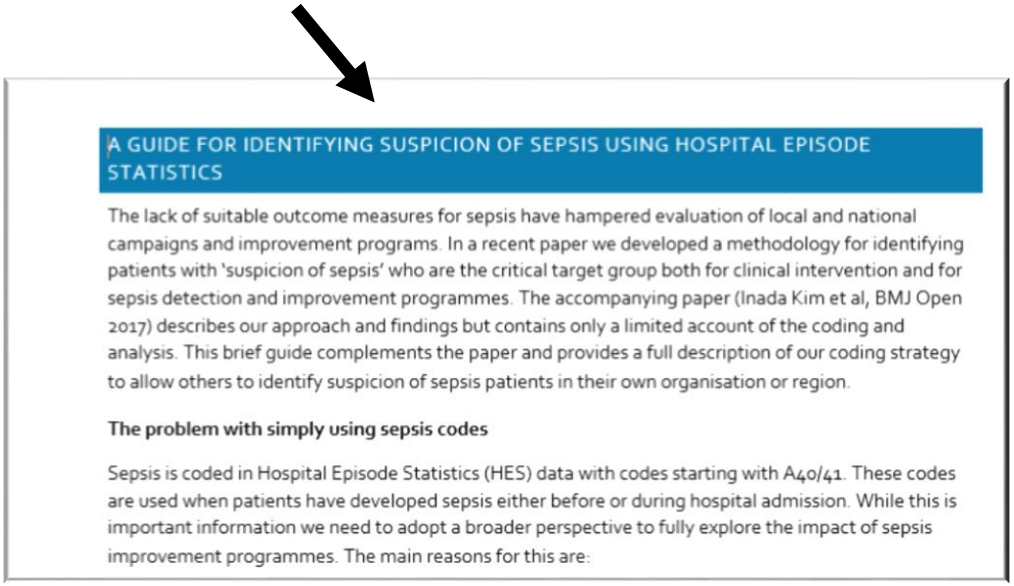

SOS mortality by Trust (Oxford AHSN region)
10.0%
9.0%
8.0%
7.0%
6.0%
5.0%
4.0%
3.0%
2.0%
1.0%
0.0%
Trust A
Trust B
Trust C
Trust D
Trust E
Trust F
Trust G
National average
2012-13
2013-14
2014-15
2015-16
2016-17

Future plans

- 30 day mortality (currently inpatient mortality)
- Incorporate ICU HES data
- Link to blood culture data to validate methodology
- NHS England collaboration to use methodology nationally
- A short guide for identifying SOS patients in your organisations and regions is available to take away today

BMJ Open

Paper in press with BMJ Open this month
(Inada-Kim, Page, Maqsood & Vincent, 2017)



A GUIDE FOR IDENTIFYING SUSPICION OF SEPSIS USING HOSPITAL EPISODE STATISTICS

The lack of suitable outcome measures for sepsis have hampered evaluation of local and national campaigns and improvement programs. In a recent paper we developed a methodology for identifying patients with 'suspicion of sepsis' who are the critical target group both for clinical intervention and for sepsis detection and improvement programmes. The accompanying paper (Inada Kim et al, BMJ Open 2017) describes our approach and findings but contains only a limited account of the coding and analysis. This brief guide complements the paper and provides a full description of our coding strategy to allow others to identify suspicion of sepsis patients in their own organisation or region.

The problem with simply using sepsis codes

Sepsis is coded in Hospital Episode Statistics (HES) data with codes starting with A40/41. These codes are used when patients have developed sepsis either before or during hospital admission. While this is important information we need to adopt a broader perspective to fully explore the impact of sepsis improvement programmes. The main reasons for this are: