Bugs and Bills: Statistical and Financial Implications of Clinical Coding and Sepsis

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Background

Patients with bacteraemias, as confirmed by positive blood cultures, are frequently very unwell with sepsis, which causes an estimated 44,000 deaths/year in the UK[1]. Clinical coding forms a crucial part of local and national epidemiological statistics, facilitates clinical governance, enables appropriate financial reimbursement of hospitals and promotes government investment into research and treatment.

We aimed to determine the accuracy with which our trust codes for sepsis, and elicit the impact this has both financially and towards wider statistics.
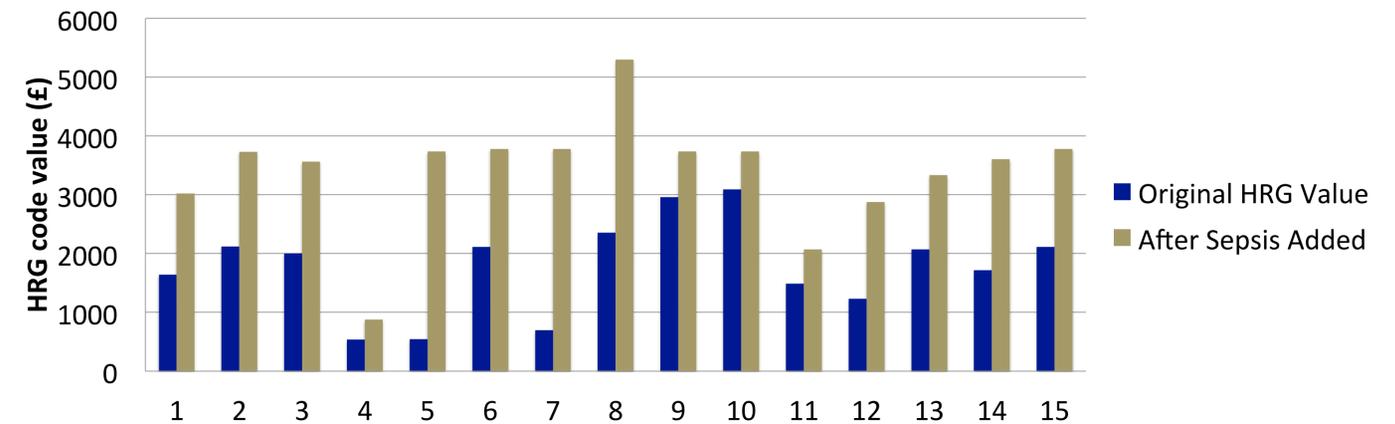
Methods

Our clinical database was interrogated, finding 310 patients with confirmed positive blood culture results between September 2015 and August 2016 at our centre. Using randomised sampling, we further investigated 55 patients from this cohort, working with clinical coders to elicit how many encounters were coded for sepsis, as either the primary or secondary diagnosis, in accordance with the ICD10 classification. This involved a 2-stage process; review of sepsis documentation by clinicians as a diagnosis in the discharge summary, and review of the subsequent Health Care Resource Group (HRG) code applied by the coding department. Among those coded incorrectly, we reviewed whether adding sepsis altered the financial reimbursement.

Results

Of 55 patients, 35/55 (64%) were recorded as sepsis by clinicians in the discharge summary, compared to 11/55 (20%) by clinical coders in the HRG code (see chart 1). Overall, only 1/55 (2%) had sepsis as the primary diagnosis, with the remainder as a secondary diagnosis. 15/55 (27%) encounters were assigned a greater financial value when sepsis was added to the code, with a potential additional £24,257 being awarded to the trust (see chart 2). Further scrutiny of clinical notes revealed 12/55 (22%) patients had an incorrect primary diagnosis coded, often when the source of infection was unclear.

Chart 2: Potential financial gain by the coding of sepsis

Legend: Original HRG Value (blue), After Sepsis Added (tan). Y-axis: HRG code value (£), 0–6000. X-axis: 1–15.
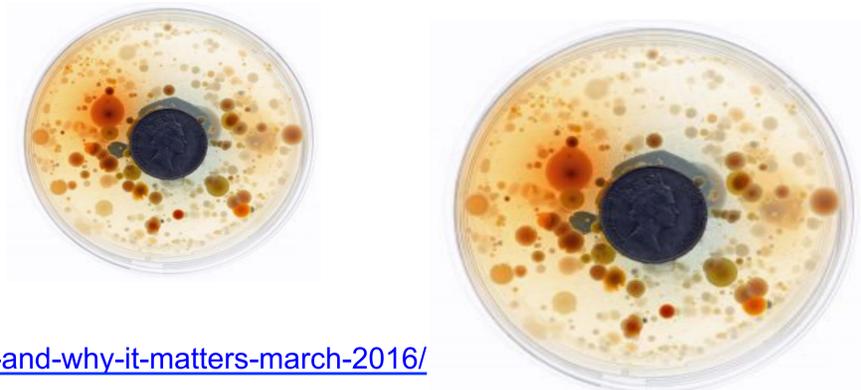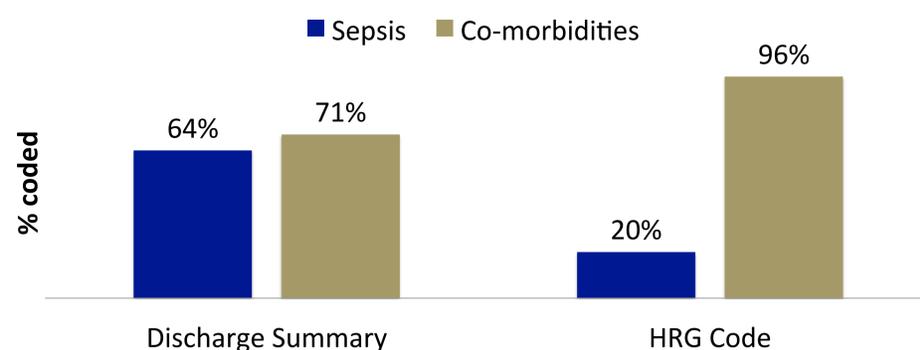
Conclusion

Our data reveals that coding for sepsis needs improvement and could lead to considerable financial compensation. Coding guidelines allow for only one primary diagnosis with source of infection being prioritised over sepsis. This poses a challenge to coders and leads to the discrepancy seen between them and clinicians who can record multiple primary diagnoses that more accurately represent the clinical picture.

It is essential that clinicians record sepsis as a diagnosis in the discharge summary to alert the coding department. During coder training, we recommended highlighting common conditions to look for, including sepsis, and advised reference to the text content of discharge summaries to resolve queries. Clinicians should select only one primary diagnosis to minimise miscommunication.

We proposed enabling our clinical software system to automatically include sepsis into the diagnoses list when blood culture results are positive, while allowing removal if later revealed to be a contaminant.

Extrapolating our results to the full 310 patients with confirmed bacteraemias exposes an underestimation for the true incidence of sepsis within coding data.

Chart 1: Sepsis recording by clinicians & subsequent HRG coding by coding department

Legend: Sepsis (blue), Co-morbidities (tan). Y-axis: % coded. Discharge Summary: 64%, 71%. HRG Code: 20%, 96%.

References:
1. http://sepsistrust.org/our-statistics-and-why-it-matters-march-2016/

Photo: https://www.watershed.co.uk/studio/projects/craft-technology-residencies-money-no-object/money-magnate