

## **HA-BSI is an important cause of mortality, and attributable mortality differs significantly among causative organisms and antimicrobial resistance patterns” Brady et al (2017).**

Summary:

**Aim:** To estimate the attributable mortality of hospital-acquired bloodstream infections (HA-BSI) in Ireland.

**Methods:** A retrospective case-cohort study was conducted, based on notifications from Irish microbiology laboratories and administrative patient records from six Irish hospitals from January 2007 to December 2013. Probabilistic linkage was used to link 1252 cases of bloodstream infection from a cohort of 343,189 hospitalized patients. Independent predictors of mortality were determined using a multi-variable logistic regression model, and included: patient age, emergency or re-admission to hospital, length of stay in an intensive care unit, number of procedures, number of diagnoses, major diagnostic category and presence of HA-BSI.

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**Results:** Attributable mortality was calculated from the crude mortality of case subjects after adjusting for other predictors of mortality, and was found to be 15.3% (95% confidence interval 14.8-15.8%). The study was further stratified according to the causative organism, including: *Escherichia coli*, *Enterococcus faecium*, *Enterococcus faecalis*, *Pseudomonas aeruginosa*, *Klebsiella pneumoniae*, *Staphylococcus aureus* and *Streptococcus pneumoniae*, and, where available, their antimicrobial resistance patterns. The highest attributable mortality among these organisms was reported for *E. faecium* at 18.1% and the lowest attributable mortality was reported for *E. coli* at 13.6%. A significantly higher attributable mortality was found for antimicrobial resistance patterns of some organisms, most notably for methicillin-resistant *S. aureus* at 19.5%, vs methicillin-susceptible *S. aureus* at 13.3%.

**Conclusions:** HA-BSI is an important cause of mortality, and attributable mortality differs

significantly among causative organisms and antimicrobial resistance patterns.

Reference:

Brady, M., Oza, A., Cunney, R. and Burns, K. (2017) Attributable mortality of hospital-acquired bloodstream infections in Ireland. February 10th. .

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