Supplementary Methods

Screening and extraction

References were imported into EndNote (EndNote X9; Clarivate Analytics, Boston, MA, USA) for initial deduplication, then into Rayyan (Rayyan QCRI; Qatar Computing Research Institute (Data Analytics), Doha, Qatar) for further de-duplication. Titles and abstracts were screened independently by two reviewers (LHW 100%, AA/ON 50% each). Full texts were assessed for eligibility by two reviewers (LHW 100%, AA/ON 50% each). Disagreements were discussed and resolved by consensus (LHW/AA/ON). Studies were excluded if: no pathogen breakdown was presented; focus was on a subset of pathogens; infant data were not presented separately from other age groups; sample types other than CSF or blood cultures were included in the total pathogen count; the study focused on infants with specific comorbidities. Studies that did not report either incidence (per 1,000 live births) or aetiology based on >100 positive cultures were excluded.

Quality assessment

The quality of included studies was rated using a nine-item tool adapted from the National Institutes of Health Quality Assessment Tool for Observational Cohort and Cross-sectional Studies (Supplementary Data, online supplemental file 1).[1] Each study was assessed by one reviewer (LHW) and rated as 'good', 'fair', or 'poor' quality. A second reviewer (AA/ON) independently performed quality assessment and data extraction for a randomly sample (15%). Data from studies rated 'good' or 'fair' were extracted into a spreadsheet, including country, study year, location, culture technique, indication of 'contaminant' removal, number of culture positives, incidence, and pathogen breakdown.

1. National Heart Lung and Blood Institute. Quality Assessment Tool for Observational Cohort and Cross-Sectional Studies. https://www.nhlbi.nih.gov/health-topics/study-quality-assessment-tools (accessed 24/05/2019 2019).