

ORION Checklist of items to include when reviewing an outbreak report (OR) or intervention study (IS) of a nosocomial organism

Key: * if possible ** if relevant

	Item Number	Descriptor
Title & Abstract	1	Is paper described as an outbreak report (OR) or intervention study (IS)? Is design of IS described? Is Intervention & main outcomes described?
Introduction Background	2	Are background and rationale for IS/OR explained? Is organism described as epidemic, endemic?
Type of paper	3	Is paper described as IS or OR? If OR, is number of outbreaks given?
Dates	4	Are start & finish dates of IS or OR given?
Objectives	5	Are objectives stated for OR? Are hypotheses stated for IS?
Methods Design	6	Is study design described? How? Is study described as retrospective, prospective or ambidirectional? Does it state if decision to report or intervene prompted by any outcome data or not? Is it stated if study formally implemented or not, with predefined protocol & endpoints?
Participants	7	Is number patients admitted given? Is age & length of stay given? Are eligibility criteria for IS or case definitions for OR given? Is proportion inter/intra-hospital transfers or admissions from care homes given?*
Setting	8	Is unit, ward or hospital (and its units) described? Are number of beds, presence and staffing of infection control team given?
Interventions	9	Are phases defined by major change in specific infection control practice (with start & stop dates)? Is a summary table given, with details of interventions, their delivery and timing given?
Culturing & Typing	10	Are details of culture media, antibiograms and/or typing given? Are details environmental sampling given?*
Infection-related outcomes	11	Are there clearly defined primary & secondary outcomes? Are they given at regular time intervals? Are there sufficient time points per phase? (see ORION author's checklist)? Are denominators given (eg admissions, discharges, bed days)? Is all cause mortality given? Is prevalence organism, or incidence of colonisation on admission at same time intervals*? In a short IS or OR is a chart used with duration patient stay & dates detection of organism? (see author checklist)
Economic outcomes	12	Is this a formal economic study? If so, are outcomes defined? Are resources (for interventions) described? Are costs in basic units? Are assumptions stated?.
Potential Threats to internal validity	13	Which potential confounders were considered, recorded or adjusted for?(eg: length of stay, case mix, occupancy, staffing levels, hand-hygiene, antibiotic use, strain type, processing of isolates, seasonality). Are measures to avoid bias described? (eg blinding; standardisation outcome assessment/provision of care).
Sample size	14	Are power calculations given? (if appropriate)

Statistical methods	15	Are statistical methods to compare groups or phases described? Do these account for dependencies in outcome data? Do they adjust where necessary for confounders? Are methods for subgroup or adjusted analyses described? Are they planned or not (exploratory)? Is statistical analysis of an OR appropriate/necessary?
Results Recruitment	16	Are the dates defining periods of recruitment & follow up given**? (see ORION text) Is there a flow diagram**?
Outcomes & estimation	17	Is the estimated effect size & its precision given for main outcomes? Is there a graphical summary of outcomes (for dependent data and most time series)?
Ancillary analyses	18	Are subgroup analyses reported? Are possible confounders adjusted for?
Harms	19	Are these pre-specified in each group or phase?
Discussion Interpretation	20	IS: is evidence for/against hypotheses assessed? :Are plausible alternative explanations considered, including regression to mean & reporting bias? OR: Is clinical significance of observations considered? Are explanatory hypotheses generated?
Generalisability	21	Is there discussion of how results may generalise to different target populations or settings? Is feasibility of interventions considered?
Overall evidence	22	Are results interpreted in context of current evidence?