D.25 Cross infection control

Item	Details
Key issue in the scope	Models for delivery of care and multidisciplinary teams.
Review question in the scope	Delivery of care: How can services be organised to minimise the risk of cross-infection?
Review questions for the protocol	• What is the effectiveness of cohorting on the basis of pathogen status versus not cohorting on the basis of pathogen status in reducing transmission of CF pathogens? • What is the effectiveness of different models of segregating patient's in reducing transmission of CF pathogens? • What is the effectiveness of individual protective equipment in reducing transmission of CF pathogens?

Item	Details
	• What is the effectiveness of the combination of cohorting, segregating and protective equipment in reducing transmission of CF pathogens?
Objective	The majority of CF-related deaths are due to respiratory failure caused by chronic lung infection. Pathogen transmission can occur via three main routes: • direct (person-to-person) contact • indirect contact (a contaminated object infects another person) • aerosol/droplet created in exhalates. The configuration of a healthcare service can influence the cross-contamination of pathogens and specific infection control practices are needed for inpatient, ambulatory, and non-healthcare settings, based on the types of activities and risks associated with each.
Population and directness	Infants, children, young people and adults with defined CF, diagnosed clinically and by sweat test or genetic testing. Population size and indirectness: • No sample size specification. • Studies with indirect populations will not be included

Intervention	• Cohorts by pathogen (separation by location or by clinic time)
	• Individual patient segregation/separation by clinic room (Separation by location) including:
	• Inpatient room with ensuite facilities
	• Inpatient Recreational facilities for example day rooms
	• Individual patient and health care professional protective equipment:
	  ○ Masks
	  ○ Gloves
	  ○ Gowns/aprons
	• Combinations of the interventions listed above

Comparison	• Configurations other than those listed above • No segregation/ cohorting/ equipment
Outcomes	• Incidence of patients infected with transmissible pathogens • Prevalence of patients infected with transmissible pathogens • Quality of life (CF-QOL, CFQR) • Emotional function including anxiety and depression (scale not specified) • Carer satisfaction • Patient satisfaction • Staff experience • Staff and patient compliance
Importance of outcomes	Critical outcomes for decision making: • Incidence of patients infected with transmissible pathogens • Prevalence of patients infected with transmissible pathogens
Setting	All settings in which NHS-commissioned health and social care is provided
Stratified, subgroup and adjusted analyses	No subgroups or stratified analyses identified. Sensitivity analysis: including and excluding studies with a high risk of bias and duration of study if necessary.
Language	English
Study design	• Systematic reviews • RCTs • Prospective and retrospective comparative cohort studies

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	• Before and after studies • Conference abstracts of RCTs (Only if RCTs unavailable and the quality assessment of abstracts will conducted based on the available information and if necessary the authors of abstracts will be contacted). • Registry and audit data (UK only) • Surveys (for patient satisfaction and compliance and staff experience only) To include RCTs and observational studies from Western countries.
Search strategy	Sources to be searched: Medline, Medline In-Process, Cochrane Central Register of Controlled Trials, Cochrane Database of Systematic Reviews, Cochrane Database of Abstracts of Reviews of Effectiveness, Health Technology Database, Embase Limits (e.g. date, study design): Apply standard exclusions filter only. Supplementary search techniques: No supplementary search techniques will be used. See appendix E.11 for full strategies
Review strategy	Appraisal of methodological quality: • The methodological quality of each study will be assessed using an appropriate checklist as per NICE guidelines manual and the service guidance methods guide 2014 (The Cochrane Risk of Bias tool for RCTs and the Newcastle and Ottawa scale for observational studies). • The quality of the evidence will be assessed by GRADE for each outcome according to the process described in the NICE guidelines manual (2014). Synthesis of data: • Meta-analysis will be conducted where appropriate. • If comparative cohort studies are included, the minimum number of events per covariate to be recorded to ensure accurate multivariate analysis. • Final and change scores will be pooled and if any study reports both, change scores will be used in preference over final scores. • If studies only report p-values from parametric analyses, and 95% CIs cannot be calculated from other data provided, this information will be plotted in GRADE tables, but evidence may be downgraded. • If studies only report p-values from non-parametric analyses, this information will be plotted in GRADE tables without downgrading the evidence, as imprecision cannot be assessed for non-parametric analyses MIDs: • Incidence of patients infected with transmissible pathogens: GRADE default • Prevalence of patients infected with transmissible pathogens: GRADE default • Quality of life: CF-QOL = 5; CFQ-R = 8.5 • Emotional function including anxiety and depression (scale not specified): GRADE default • Carer satisfaction: GRADE default • Patient satisfaction: GRADE default • Staff experience: GRADE default • Staff and patient compliance: GRADE default Default MIDs: 0.8 and 1.25 for dichotomous outcomes; 0.5 times SD for continuous outcomes. Review process: • A list of excluded studies will be provided following weeding.

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	• Evidence tables and an evidence profile will be used to summarise the evidence.
Equalities	• Psychological and behavioural issues are more likely in people with a lower socioeconomic status • Gender- outcomes are worse for women although there is no evidence that this is a consequence of difference in care • Geographical issues – care is given through specialist centres and this may be a problem if a person with CF is living in an isolated location.
Notes/additional information	2015, http://linkinghub.elsevier.com/retrieve/pii/S0195-6701(15)00074-2 Review of medical evidence by an expert committee convened by the Cystic Fibrosis Foundation (U.S.A): Infection Control and Hospital Epidemiology www.jstor.org/stable/10.1086/676882 2003, Infection control recommendations for patients with cystic fibrosis: microbiology, important pathogens, and infection control practices to prevent patient to patient transmission: http://www.shea-online.org/Assets/files/position_papers/cf_ic.pdf Section 4.1 infection control: www.cysticfibrosis.org.uk/media/448939/cd-standards-of-care-dec-2011.pdf Audit: What arrangements are in place to minimise the risk of cross-infection in clinics and inpatient facilities? Is there evidence of cross-infection in the unit? What proportion of patients is infected with Burkholderia cepacia complex and MRSA, and what is the annual rate of new acquisition of these organisms? Infection Control in Cystic Fibrosis: Cohorting, Cross-Contamination, and the Respiratory Therapist www.rcjournal.com/contents/05.09/05.09.0641.pdf Infection: Prevention and control of healthcare-associated infections in primary and community care: https://www.nice.org.uk/guidance/cg139 Note: does not cover secondary care settings Healthcare infection society: www.his.org.uk/ Standard infection control procedures NHS: www.nhsprofessionals.nhs.uk/download/comms/cg1_nhsp_standard_infection_control_precautions_v3.pdf