

Evaluation of Bristol-wide enhanced paediatric respiratory tract infection (RTI) microbiology and symptom surveillance



BACKGROUND

There is a growing burden on primary care clinicians, as well as a growing public health threat of increasing antimicrobial resistance (AMR). Respiratory tract infections (RTIs) are the most common problem managed by primary care with the majority occurring in children and around 50% of patients given antibiotics. It is not clear precisely what proportion of children with RTIs are brought to the attention of primary care, but it is clear that even small changes in consultation rates and clinical management could have a significant impact on primary care resources and AMR.

STUDY OBJECTIVES

The main objective is to determine the feasibility of enhanced paediatric RTI microbiology surveillance to inform the design of a full scale cohort study and nested randomised controlled trial (RCT).

Primary outcome = recruitment and retention rates

Defined as number of complete sets of data collected on each study RTI compared with the number of children and families enrolled

The main secondary objectives are to:

- Describe the duration of community paediatric RTI symptoms with a comparison between consulting and non-consulting children
- Describe the primary and secondary care consultation rates

Bristol GP practices invited to express an interest in **Participant** EEPRIS (via PCRN) flow diagram GP practice expressions of interest gained GP practice agrees to participate in EEPRIS (Displays study posters and recruitment cards) Parent contacts study team Interviews with because of word of mouth/GP clinicians (GPs and advert/ study website/ other nurse prescribers) in participating practices Each GP practice produces a list of eligible children. Sends invitation letters to parents (using DocMail), Brief screening to check basic eligibility (via tel/email). 3 weeks post initial mailout: Send invitation pack (with PIS Repeat mail out, followed 1 week and consent form) to interested later with text reminder parent of eligible child(ren) Parent declines No response Parent agrees to participate by returning No further contact, tag appropriately consent form (one per child) If not eligible on screening Parent has study welcome phone call with screening check to confirm check, offer explanation Child has RTI eligibility (of household and of each child to enroll) and do not continue with symptoms at full enrolment for that Parent provides baseline data (online) child/household (as appropriate). Record Weekly call to reason not eligible check if symptoms Weekly email (or text) asks if child has RTI symptoms have resolved Parent confirms Parent responds "yes" Parent responds "no" child's recovery from baseline RTI Parent provides RTI symptoms data for unwell child (online) Parent completes daily symptoms Research Nurse (RN) HOME VISIT + follow up data online Parent takes nasal and saliva swab Parent agrees (optional) (with automated prompts and (to post to laboratory). RN takes RN transports telephone support), clinical standard nasal and saliva nurse-taken swabs Maximum 3 weeks daily data swabs and examines child direct to lab (or interim refrigerated overnight storage). Symptoms continue beyond 3 weeks Parent posts swabs Parent invited to via First class Royal Symptoms resolve Parent completes weekly continue in study for Mail Safebox[™] questionnaire (2 consecutive further RTI episodes in Maximum 5 weekly questionnaires symptom-free days) same child and siblings (optional) RTI symptoms continue beyond 8 weeks' total: weekly admin call to check if symptoms have resolved Laboratory staff log Parent collects saliva receipt of samples and nasal swab and on EEPRIS database, Parent declines posts to central and conduct PCR laboratory analysis on samples Active study participation ends Interviews with a sample of participating parents and children Review of primary care notes for (optional) all children who had RTI in study

METHODS

Research design: Prospective, feasibility cohort study with data collection over one winter period (December 2015 to May 2016), with nested qualitative studies (parent and clinician interviews)

Setting: Primary care, 12 GP practices within 10 miles of Bristol centre

Participants: Approximately 777 immuno-competent children in the community aged 3 months <15 years, recruited via GP surgery postal invitation to parents (approx. 450 parents to be recruited)

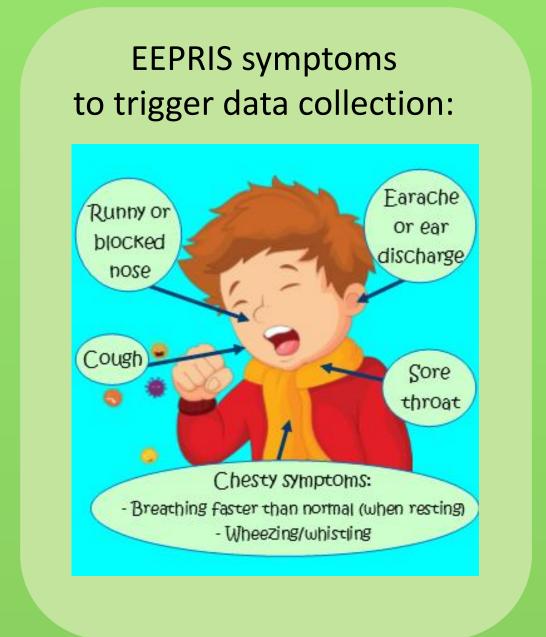
Data collection:

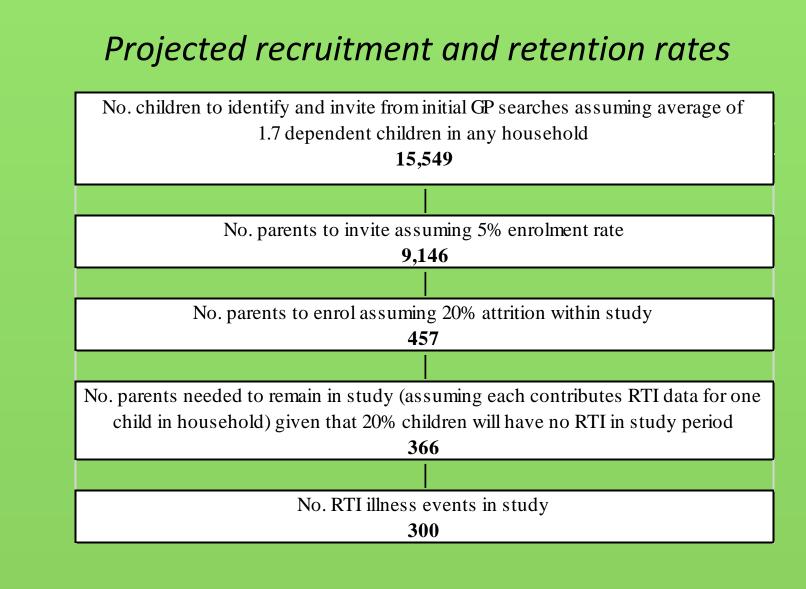
Online questionnaires for parents (baseline and on child incident RTI), supplemented by medical notes review; Clinical examination by research nurse; Saliva and nasal swab samples





Saliva and nasal swab samples





DEVELOPING AN ONLINE INTERVENTION OF REAL-TIME DATA ON CIRCULATING INFECTIONS

EEPRIS will inform the design of an online realtime illness (symptoms and microbiological) information intervention that informs parents and clinicians about circulating infections in the community, to be tested in a future RCT.



The onward intention is to:

- inform clinician diagnosis, management and prescribing practices
- improve antibiotic stewardship
- aid parent decision-making regarding RTI management (which has potential for reducing consultation rates)

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Study website: www.bristol.ac.uk/eepris





