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Evaluation of the clinical utility of the FebriDx® test for viral and bacterial upper respiratory infection in a UK A&E department

Submission date	Recruitment status	[X] Prospectively registered
22/01/2021	No longer recruiting	[ ] Protocol
Registration date	Overall study status	[ ] Statistical analysis plan
27/01/2021	Completed	[ ] Results
Last Edited	Condition category	[ ] Individual participant data
03/11/2021	Respiratory	[ ] Record updated in last year

Plain English summary of protocol

Background and study aims
Viral and bacterial respiratory infections (coughs and colds) represent a major source of morbidity, mortality and healthcare burden.
Because bacterial and viral infections are characterised by similar signs and symptoms, it can be difficult to distinguish between these causes. To aid clinicians in differentiating between infections caused by bacteria and viruses, new biomarkers are being investigated.
The test being tested in the study is the FebriDx®, which is a CE marked rapid point of care test to aid clinical diagnosis of viral or bacterial acute upper respiratory infections. This study aims to determine the extent of the health economic gains achieved by using FebriDx® in terms of both reduced waiting times and reductions in unnecessary antibiotic prescriptions.

Who can participate?
All patients aged 16 years or older presenting to the Accident and Emergency department with symptoms of respiratory infection are eligible for inclusion into the trial.

What does the study involve?
Participants will be enrolled in the study for 14 days. They will be enrolled into the study and then be allocated to standard care or management by the FebriDx® results. There will be follow up telephone calls 7 and 14 days later to ask about the symptoms, whether the participant has visited the Accident and Emergency department again and have they received any antibiotics. At the end of the telephone call on day 14 the participant will have completed the study.

What are the possible benefits and risks of participating?
Benefits: There may be no benefits to taking part in this study and that is why we are doing this work. Although the test has already been tested for accuracy and has a CE mark (enabling us to use for patient testing), we do not know the impact of this test on antibiotic prescribing and this is why it is important to conduct the research.
We anticipate the biggest benefit from the study will be to patients in the future. The information we get from this trial may help us treat other patients more effectively in the future.
Risks: If you are in the new test group you will have a small pin prick on one finger to enable us

to collect one drop of blood, which may cause a very small amount of mild discomfort.
There is a very small chance that the test will say you do not need antibiotics when you do. That is why the people treating you are not relying on the test alone. If other tests and measurements suggest you need antibiotics these will be given. If you are discharged, we will telephone you after 48 hours to check that you are feeling better and not feeling any worse. If you are not feeling any better, you will be asked to return to A&E where you will be seen again.

Where is the study run from?
Leeds Teaching Hospitals NHS Trust (Leeds General Infirmary and St James's University Hospital) (UK).

When is the study starting and how long is it expected to run for?
December 2019 to November 2021

Who is funding the study?
The Jon Moulton Charity Trust (Guernsey, UK)

Who is the main contact?
Dr Kerrie Davies, Kerrie.davies@nhs.net

Contact information

Type(s)
Scientific

Contact name
Dr Kerrie Davis

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Additional identifiers

Clinical Trials Information System (CTIS)
Nil known

Integrated Research Application System (IRAS)
276038

ClinicalTrials.gov (NCT)
Nil known

Protocol serial number
CPMS 45068, IRAS 276038

Study information

Scientific Title
Prospective, pragmatic study to evaluate the clinical utility of FebriDx® in determining whether or not patients presenting to a UK accident and emergency department with symptoms of acute respiratory infection require antibiotic treatment

Study objectives
Does the result of the FebriDx® test reduce the proportion of inappropriate antibiotic prescribing in the Accident and Emergency department?

Ethics approval required
Old ethics approval format

Ethics approval(s)
Approved 06/07/2020, York and Humber Sheffield Research Ethics Committee (NHSBT Newcastle Blood Donor Centre, Holland Drive, Newcastle upon Tyne, NE2 4NQ, UK; +44 (0)207 104 8222; sheffield.rec@hra.nhs.uk), ref: 20/YH/0070

Study design
Interventional randomized controlled trial

Primary study design
Interventional

Study type(s)
Diagnostic

Health condition(s) or problem(s) studied
Acute upper respiratory infections

Interventions
All patients attending the Accident and Emergency department (A&E) at St James's University Hospital, Leeds Teaching Hospitals NHS Trust (LTHT), will be invited to take part in the study if they present with clinical symptoms of coughs and colds. Following informed consent participants will be allocated to receive standard care or to be managed according to the FebriDx® test results. All participants will be asked to provide a short medical and symptom history and, if not already taken as part of the triage process, patients will have vital measurements recorded (blood pressure, pulse and temperature). Participants will be randomly allocated to standard care (control group) or FebriDx® management (implementation group) according to sequential cohort blocks. Participants allocated to FebriDx® management will have a small volume of finger-stick blood collected for the test, completed by a trained healthcare professional. Once the test has been completed the results will be recorded and provided to the treating clinician at the same time as routine test results. The FebriDx® result will not be used in

isolation but as a clinical decision making aid. All participants will be followed up via a pre-arranged telephone clinic at 7 and 14 days post initial A&E presentation to collect data on symptoms, access to healthcare services (GP/A&E) and new antibiotic prescriptions. At the end of the 14 day follow up visit, participants will have completed the study.

Routinely, patients arriving by ambulance or self-presenting to the accident and emergency department with suspected respiratory infection are booked in at reception and undergo a vet process by a registered nurse to identify those who are particularly unwell. If that is not the case, the patient may streamed to the rapid assessment unit or majors in the A&E depending on need. A more comprehensive nurse assessment takes place where the patient may have an ECG, blood tests, a peak flow and a chest xray.

The patient is then seen by an A&E clinician (Doctor, Advanced Practitioner or Physician Associate) and a management plan developed. This may result in discharge with advice, with antibiotics or admission onto the Clinical Decision Unit or an inpatient bed.

Participants allocated to FebriDx® management will have a small volume of finger-stick blood (one drop) collected for the test, completed by a trained healthcare professional (part of the research team). Once the test has been completed the results will be recorded and fed back to the clinician; treatment will be guided accordingly by the test results.

FebriDx® results would not be used if the test indicated the patient did not have a bacterial infection but there was overriding clinical suspicion that the participant was suffering from a bacterial infection. In this instance it would not be appropriate to withhold antibiotics. This would be recorded as a protocol deviation and analysed as such.

In order to demonstrate a reduction in the number of antibiotic prescriptions in Accident and Emergency departments and to allow for patients failing to complete their time in the study we need to recruit 908 patients. 454 will be allocated to standard care and 454 to testing using the new test (FebriDx®).

Intervention Type
Other

Primary outcome(s)
1. Number of inappropriate antibiotic prescriptions given in the Accident and Emergency department measured at day 0
2. Number of unscheduled follow-up visits to GP surgery/afterhours/A&E within 7 days measured at day 7 follow up telephone call
3. Number of disease specific complications experienced by the patients such as mastoiditis, peritonsillar abscess, sepsis, orbital abscess, extradural and subdural abscesses, meningitis and pan-sinusitis within 14 days measured at day 14 follow up telephone call
4. Number of clinician consultations/associated healthcare costs measured at days 0 - 14, initial presentation and follow up telephone calls on day 7 and day 14

Key secondary outcome(s))
There are no secondary outcome measures

Completion date
31/05/2022

Eligibility

Key inclusion criteria
1. Participant reports a temperature of >=37.5 degrees C in the last 3 days or exhibited at visit
2. Participant reports symptoms within the last 7 days that are indicative of a new, acute respiratory infection in the opinion of the research team. (Symptoms can include but are not limited to: runny nose, nasal congestion, sore throat, new cough, hoarse voice and shortness of breath).
3. Participant is aged >= 16 years
4. Capacity to consent
5. Ability to understand English

Participant type(s)
Patient

Healthy volunteers allowed
No

Age group
Adult

Sex
All

Key exclusion criteria
1. The participant is immunocompromised or taking chemotherapy, oral steroids, or interferon
2. The participant is currently prescribed antibiotics, antivirals or had a recent live vaccine
3. The participant has a pyrexia which has lasted more than 3 days prior to the visit to accident and emergency department

Date of first enrolment
15/11/2021

Date of final enrolment
31/01/2022

Locations

Countries of recruitment
United Kingdom

England

Study participating centre
Leeds General Infirmary
The Leeds Teaching Hospitals NHS Trust
Great George Street
Leeds

United Kingdom
LS1 3EX

Study participating centre
St James's Hospital
Leeds Teaching Hospitals NHS Trust
Beckett Street
West Yorkshire
Leeds
United Kingdom
LS9 7TF

Sponsor information

Organisation
University of Leeds

ROR
https://ror.org/024mrxd33

Funder(s)

Funder type
Charity

Funder Name
The Jon Moulton Charity Trust (Guernsey)

Results and Publications

Individual participant data (IPD) sharing plan
All data generated or analysed during this study will be included in the subsequent results publication.

IPD sharing plan summary
Other

Study outputs

Output type	Details	Date created	Date added	Peer reviewed?	Patient-facing?
HRA research summary			28/06/2023	No	No

Participant information sheet	Participant information sheet	11/11/2025	11/11/2025	No	Yes