

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

<b>Submission date</b> 22/01/2021	<b>Recruitment status</b> No longer recruiting	<input checked="" type="checkbox"/> Prospectively registered <input type="checkbox"/> Protocol
<b>Registration date</b> 27/01/2021	<b>Overall study status</b> Completed	<input type="checkbox"/> Statistical analysis plan <input type="checkbox"/> Results
<b>Last Edited</b> 03/11/2021	<b>Condition category</b> Respiratory	<input type="checkbox"/> Individual participant data <input type="checkbox"/> 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

### ORCID ID

<https://orcid.org/0000-0001-6862-5355>

### Contact details

Healthcare Associated Infection Research Group

Microbiology

Old Medical School

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No telephone contact available

Kerrie.davies@nhs.net

## Additional identifiers

### Integrated Research Application System (IRAS)

276038

### Central Portfolio Management System (CPMS)

45068

# 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 be 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  $\geq 37.5$  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  $\geq$  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/024mrx33>

## 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?
<a href="#">HRA research summary</a>			28/06/2023	No	No