

**Local Enhanced Service** - Near patient testing for CRP in patients attending with lower respiratory tract infection

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# Equalities and Health Inequalities Statement

“Promoting equality and addressing health inequalities are at the heart of NHS England’s values.”

Throughout the development of the policies and processes cited in this document, we have:

- Given due regard to the need to eliminate discrimination, harassment and victimisation, to advance equality of opportunity, and to foster good relations between people who share a relevant protected characteristic (as cited under the Equality Act 2010) and those who do not share it.
- Given regard to the need to reduce inequalities between patients in access to, and outcomes from, healthcare services and in securing that services are provided in an integrated way where this might reduce health inequalities.

## 1 Introduction

**1.1** All GMS practices are expected to provide essential and those additional services they are contracted to provide to all their patients. This Enhanced Service (ES) specification outlines more specialised services to be provided. The specification of this service is designed to cover the enhanced aspects of clinical care, all of which are beyond the scope of essential services. No part of the specification by commission, omission or implication defines or redefines essential or additional services.

**1.2** This ES1 is directed at GP practices delivering general medical services in England.

**1.3** This ES is agreed between the CCG and GP practice.

## 2 Purpose

**2.1** To reimburse practices for use of a near patient test (CRP) in patients presenting with lower respiratory tract infection when an antibiotic is being considered. The aim of this ES is to support the CCG to meet its antibiotic prescribing target and to improve clinical care by avoiding the use of unnecessary antibiotics.

## 3 Background

Tackling high antibiotic prescribing to try to reduce antibiotic resistance is a top priority both nationally and internationally. In the UK GPs issue around 80% of all prescribed antibiotics although research shows that they only have a small impact on symptoms. Reducing unnecessary antibiotic prescribing by GPs is therefore one approach to reducing their unnecessary use overall. It has been shown that using a simple finger prick blood test called 'C reactive protein (CRP)' can give GPs extra information and help them better target antibiotics to those people most likely to benefit from taking them. GPs using this test have shown they can reduce antibiotic prescribing by 30%. GP surgeries have to pay for using the test so this is likely to limit how many surgeries take it on. Recent NICE pneumonia guidelines recommended the use of CRP testing to enhance the assessment of patients with LRTI (see details in Table 2). Specifically the test has a role in patients without a clinical diagnosis of pneumonia but in whom there is still uncertainty about whether an antibiotic is needed.

## 4 Process

**4.1 Testing equipment:** Practices taking on the service will be expected to arrange to access a near patient CRP testing kit. We have identified three suppliers whose details are provided in the appendix. Practices may choose to source the testing kit from elsewhere. If practices already use an Affinion machine for near patient testing of cholesterol these can be adapted for CRP testing by acquiring alternative test strips. It may not be necessary to purchase a testing machine as they can be supplied on a lease hire arrangement and funded through higher test strip charges (£6-£6.50)

### 4.2 Quality control

Practices will be expected to have appropriate QC procedures in place

### 4.3 Who to test?

There is good evidence that testing those presenting with lower respiratory infection enables practitioners to better target antibiotics and reduces prescribing. In the trials LRTI was defined as

an illness where cough was a prominent symptom and there was another sign or symptom of lower tract infection e.g. (sob, pain, sputum, wheeze), and no other diagnosis was suspected.

### 4.3 Who to test? Continued

There are three potential clinical scenarios presented in the table below. There is limited data on testing in other respiratory infections (sore throat sinusitis) and testing is not currently supported by good quality evidence.

### 4.4 Eligible patients:

- Are registered at the GP practice,
- Are aged 18 years at the time of testing; and
- Present with symptoms suggestive of a lower respiratory tract infection but without a clinical diagnosis of pneumonia in whom antibiotics are being considered

**Table 1** Clinical scenarios in those presenting with lower respiratory tract infection

| Clinical scenarios                                                                           | Outcome                                                                                                                                        |
|----------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------|
| LRTI but the clinician has a strong suspicion of pneumonia                                   | CRP testing is unlikely to change the prescribing decision and is not indicated                                                                |
| LRTI but the clinician does not feel that antibiotics are indicated                          | CRP testing not needed unless the patient expressed a strong desire for a prescription in which case it may help back up the clinical decision |
| LRTI without clinical signs of pneumonia but the clinician is uncertain whether to prescribe | CRP testing helpful<br>See table two for interpretation of results                                                                             |

You may find it helpful to use a clinical score to help determine the risk of pneumonia.

See Table 2 for a clinical score combined with CRP (in this study the threshold used was >30mg/l)

**Table 2** Diagnostic risk classification of pneumonia by simplified diagnostic score in 2820 patients with acute cough

| Symptoms and signs + CRP >30 mg/L* |                            |                                         |
|------------------------------------|----------------------------|-----------------------------------------|
| Score (risk category)              | No of patients (% of 2820) | No with pneumonia (observed prevalence) |
| 0 (low)                            | 572 (20.3)                 | 4 (0.7)                                 |
| 1-2 (intermediate)                 | 1902 (67.4)                | 73 (3.8)                                |
| ≥3 (high)                          | 346 (12.3)                 | 63 (18.2)                               |
| All                                | 2820 (100)                 | 140 (5)                                 |

\***Score:** 1xabsence of runny nose+1xbreathlessness+1xcrackles+1xdiminished vesicular breathing+1xraised pulse (>100/min)+1xfever (temperature >37.8°C) 1xraised CRP (>30 mg/L).

This simplified score loses some of the value in the CRP test - **higher values are more predictive of pneumonia**. Using the CRP alone: values 30-50 7% pneumonia; 50-100 15% pneumonia; >100 35% pneumonia.

#### 4.5 How to interpret the test

NICE guidelines: The relevant NICE guidelines state:

For people presenting with symptoms of lower respiratory tract infection in primary care, consider a point of care C-reactive protein test if after clinical assessment a diagnosis of pneumonia has not been made and it is not clear whether antibiotics should be prescribed. Use the results of the C-reactive protein test to guide antibiotic prescribing in people without a clinical diagnosis of pneumonia as follows:

- Do not routinely offer antibiotic therapy if the C-reactive protein concentration is less than 20 mg/litre.
- Consider a delayed antibiotic prescription (a prescription for use at a later date if symptoms worsen) if the C-reactive protein concentration is between 20 mg/litre and 100 mg/litre.
- Offer antibiotic therapy if the C-reactive protein concentration is greater than 100 mg/litre.

The test is not a substitute for clinical examination and the application of clinical skills. The cut points are provided as a guide but the risk of pneumonia is higher with higher values of CRP. So a clinician may decide a different course of action for a low risk individual with a CRP of 21 in whom a delayed prescription may be appropriate compared to a high risk (e.g. elderly with co-morbidity) with a CRP of 90 in whom a short delay or clinical review may be indicated.

**4.6** Practices are required to record basic details of participant for future audit under this ES.

**4.7** Ensure that all healthcare professionals who are involved in administering the ES have:

- Referred to the clinical guidance available; and
- The necessary experience, skills and training

### 5 Monitoring

**5.1** The CCG will monitor services and calculate payments under this ES by collecting quarterly returns. Practices will be expected to hold audit data for inspection on request.

### 6 Payment and validation

**6.1** Claims for payments for this programme should be made quarterly.

**6.2** Payment will be made by the last day of the month following the month in which the practice validates the claim.

**6.4** Payment is available to participating GP practices under this ES as an item of service payment of £10 (suggested) per test in eligible patients in accordance with the 'Service specification section' and provisions within this ES specification.

**6.5** GP practices will only be eligible for payment for this ES in circumstances where all of the following requirements have been met:

All patients in respect of whom payments are being claimed were on the GP practice's registered list at the time the test was undertaken and all of the following apply:

- The GP practice undertook the test in all patients in respect of whom the payment is being claimed.
- All patients in respect of whom payment is being claimed satisfied the clinical definition as per the service specification section and the results were used to inform the prescribing decision.

## **Estimated cost to GP £6.50 per test in year one for which the CCG will pay practice £10 per test\***

### **Notes on delayed prescribing**

Delayed prescribing has been shown to be a helpful strategy in managing respiratory infection and in clinical trials has been shown to reduce antibiotic uptake compared to immediate prescription.

In a trial of delayed prescribing strategy in acute cough:

- The median duration of slight cough was 11.7 days and the 75th centile 17 days
- The median duration of moderately bad cough was 6 days and the 75th centile 8 days

A delayed prescription with a suggested 14-day delay resulted in similar cough outcomes with maintained patient satisfaction

Key elements of delayed prescribing used in trials are:

- To offer an explanation of the likely natural history of the illness so for acute cough on average people wait around 10 days before presentation continue to cough for another 12 days after consultation (three weeks in total)
- To explain the limited benefit in trials of antibiotics so for acute cough in an illness that lasts three weeks those taking antibiotics might expect a one day reduction in symptom duration.
- To offer advice about alternative ways to deal with symptoms. The Cochrane review on antitussive agents was unable to determine if they were clinically useful.
- To explain when to take the antibiotics, this can be tailored advice for the patient depending on their duration prior to the consultation and other potential risk factors but bear in mind that the cough will not be better in a few days.
- Antibiotics might be helpful if the cough is getting much worse, they are getting out of breath or high fevers or developing chest pains. Offer a review appointment if they become significantly more unwell (safety net)

### **Notes on pneumonia risk**

In a typical GP surgery of those presenting with LRTI around 5% will have x-ray evidence of pneumonia (infiltrates). The GP will make a clinical diagnosis of pneumonia in one third. Two thirds of those with a clinical diagnosis will have x-ray confirmed infiltrates. The missed pneumonia cases have a milder spectrum of illness compared to those in whom the diagnosis is made and will still recover without antibiotics but have a prolonged recovery time compared to those without infiltrates on the chest x ray.

Using the CRP test allows the GP to classify some of those in whom there is diagnostic uncertainty into a low risk group (<2.5% risk) a group in whom there is still uncertainty and a group at high risk (>20% risk). So the test is not perfect and is not a substitute for clinical skills nor for using safety net advice. Using the test though does result in lower antibiotic uptake.

### **Notes on CRP testing in other clinical groups**

Once the CRP test is available in the surgery you may find it helpful to use in other clinical situations where there is diagnostic uncertainty. You are free to use the test in these situations but they will not be reimbursed through this scheme and you should be aware of the limited evidence base to support such testing.

## **\*Costs and supplier details**

### ***ORION system QuikRead go for CRP – by Orion Diagnostics Oy, distributed by Roche Diagnostics Limited***

£5.50 per test with variable discount available based on expected volume and usage

Orion QuikRead go can also be implemented for extending areas such as iFOBT, Strep-A and Hb testing

Office on 01444 256 000 or [burgesshill.cardiacpoc@roche.com](mailto:burgesshill.cardiacpoc@roche.com)

Southampton area contact: Kate Quinney on mobile: 07734 271700 email: [kate.quinney@roche.com](mailto:kate.quinney@roche.com)

Visit <http://www.quikread.com/> for more product information

### ***Eurolyser CUBE – Oxford Biosystems Ltd***

Instrument purchase cost approx. £1,000.

Then £4/test. + Weekly quality assurance materials

The Eurolyser point-of-care system can measure CRP, hsCRP, HbA1c, PT (INR), HGB and CysC from whole blood samples in a single test format.

Office on 0235 431390. E-mail: [sales@oxfordbiosystems.com](mailto:sales@oxfordbiosystems.com)

### ***Alere System – Afinion Multi Assay Analyzer***

Similar costs to the Orion system, but has the advantage of being able to test for a range of conditions.

Rental cost £700 plus £300 for Quality Assurance.

Cost per 15 test cartridges/strips £60

Alere Afinion Multi Assay Analyzer System for HbA1c, ACR, CRP, and Lipids. - <http://www.alere.com/en/home/product-details/afinion-as100-analyzer.html>

Distributor Alere at: Office 0161 483 5884. E-mail: [ukcustomer@alere.com](mailto:ukcustomer@alere.com)

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