



## **Pilot of an Automated Direct-to-Patient Health Forecasting System in Cornwall, South West England, for people with Chronic Obstructive Pulmonary Disease**

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The Met Office, working in partnership with Finnish telemedicine company Medixine, and with funding from Cornwall Social Care and Cornwall Primary Care Trust piloted an automated Health Forecasting Service for people with COPD in Cornwall, South West England during winter 2006-07. The pilot involved 9 Doctor's surgeries and 447 people with Chronic Obstructive Pulmonary Disease (COPD).

COPD is an illness caused by permanent damage to the lung with a restriction in the airways. It is a combination of Chronic Bronchitis and Emphysema. The symptoms include: exertional breathlessness, chronic cough, regular sputum production and frequent winter "bronchitis". Cold weather in winter can lead to a worsening symptoms for people with COPD, often known as an 'exacerbation'. These exacerbations can often be serious and lead to hospitalisation.

There is a strong association between the health of people with COPD and the natural environment. The Met Office has been pioneering COPD Health Forecasts since winter 2004/5. The forecasts were developed by monitoring in-hours and out-of-hours GP workload; NHS Direct call volumes; hospital admissions data; and influenza surveillance, as well as using data from Met Office weather forecasting models.

The system in Cornwall used automated telephone calls to alert people with COPD to periods when the Met Office COPD Health Forecast indicated that their risk of illness was 'elevated', either as a result of high risk weather (such as cold), high levels of respiratory infections or both. The call was interactive and asked patients two evidence

based questions about their condition, to which they could answer 'yes' or 'no'. The system relayed their answers to their Doctor or Nurse for follow as required. Five calls were made to each patient during the winter, in response to the prevailing conditions.

The practices that used the service reduced COPD hospital admission rates by 52% when compared with the previous year. This compares with a reduction of only 12% in practices that did not use the system. This reduction equates to a potential saving of up to GBP 300,000 each winter.

A survey of all patients who used the system showed that 89% thought the calls were helpful, 17% contacted their doctor about their symptoms and 51% obtained repeat medication in response to calls.