



Health Forecasting

Patrick Sachon, Met Office



High Risk

Low Risk

Low Risk

High Risk

High Risk

Medium Risk

Excess winter mortality

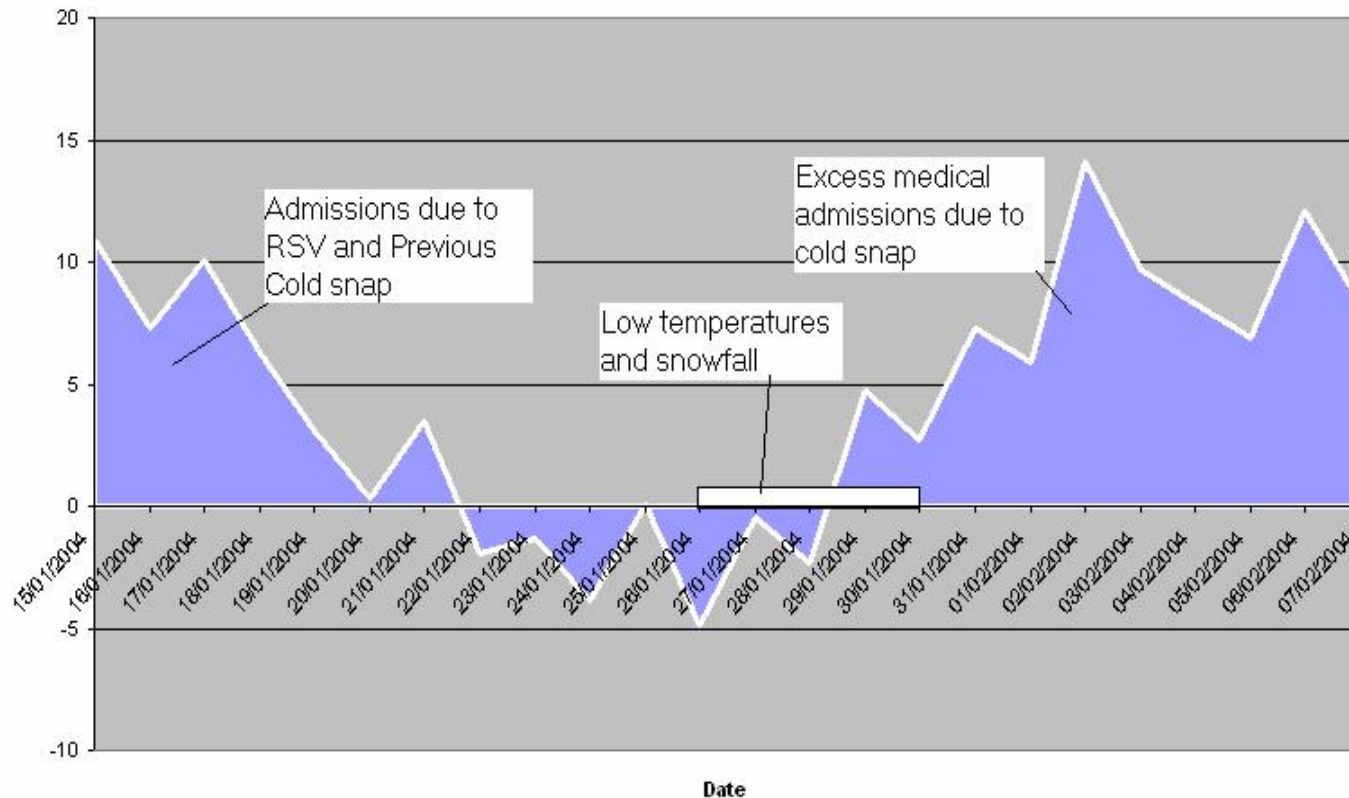
The UK is high up the European league for additional winter mortality

Country	Approx. % increase in premature deaths	Number of premature winter deaths
Portugal	28%	8 800
Ireland	21%	2 000
Spain	21%	19 000
England	19%	31 000
Wales	17%	1 800
Northern Ireland	17%	800
Scotland	16%	3 100
UK in total	18%	37 000
Greece	18%	5 700
Italy	16%	27 000



The Effect of Cold on Hospital Admissions

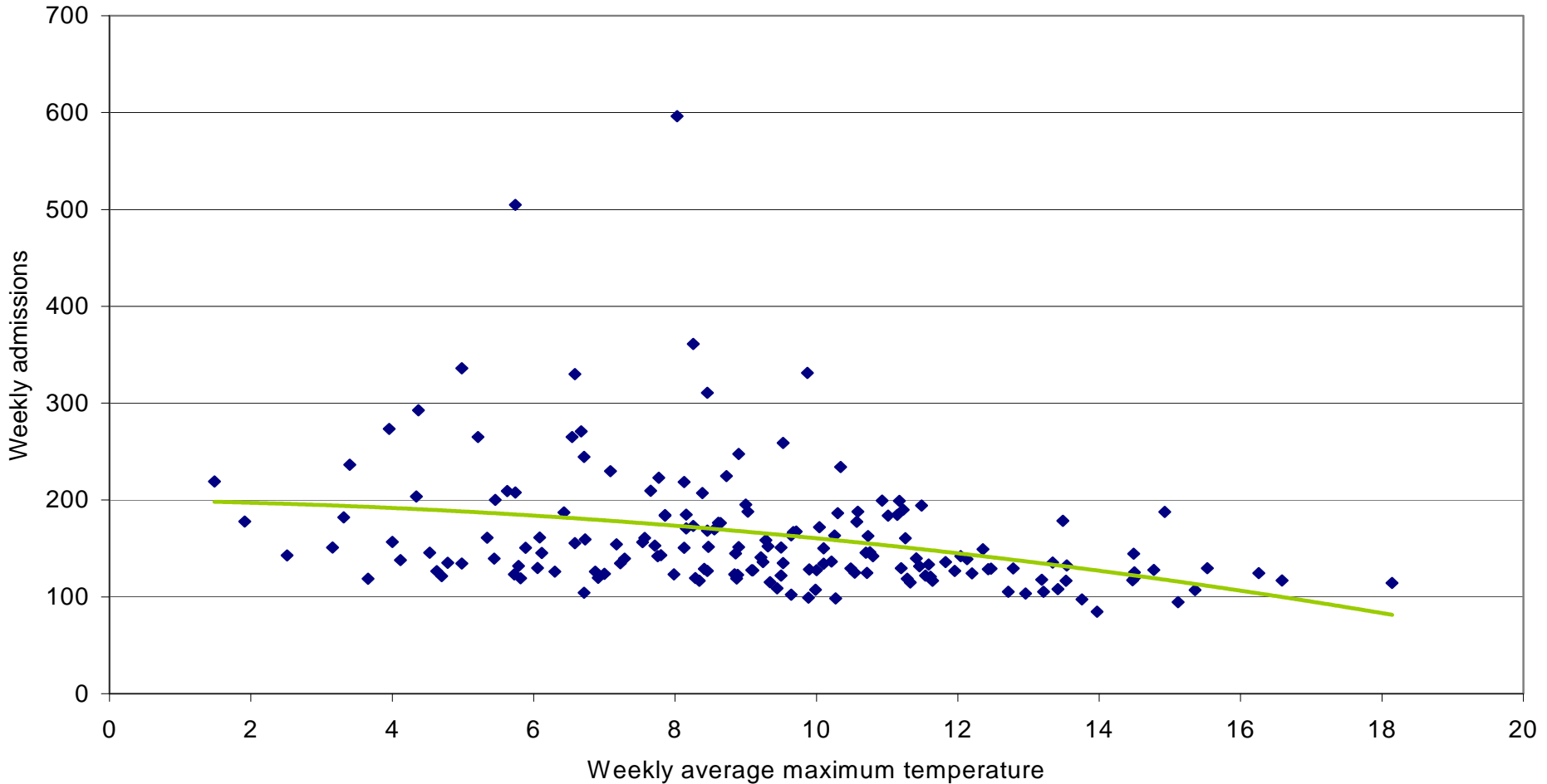
SE London Emergency Medical Admissions
Variance from 4 week mean. Using Week 4 as reference week





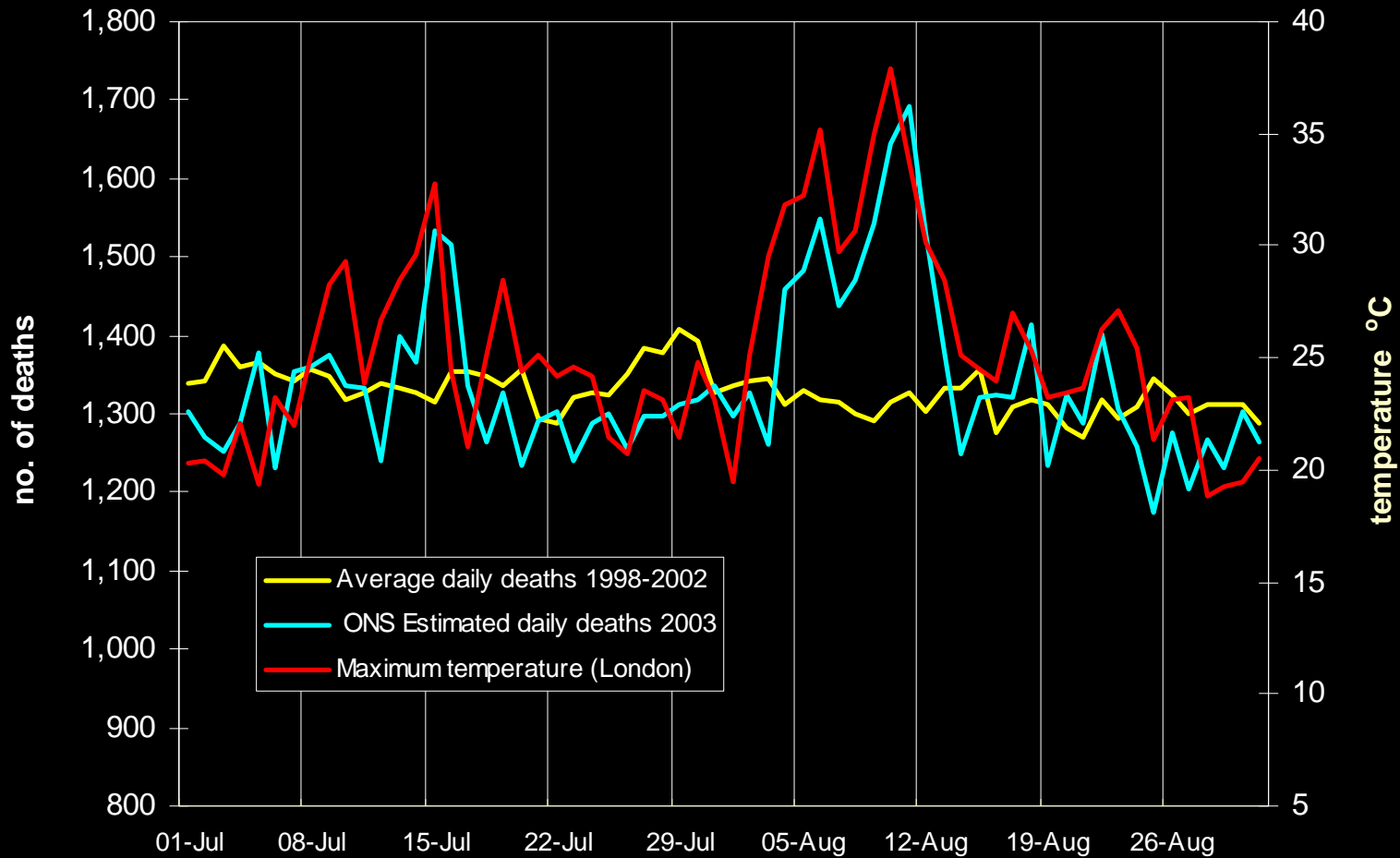
There is a significant link between cold and COPD admissions

Weekly COPD admissions in London compared to temperature (1 week lag)





The problem: Heat and mortality (2003)





Health forecasting is about moving from...

This is the weather



This is the impact on health



Reaction to impact

to

This is the relationship between weather & health



This is the forecast of weather and risk to health



Prevention of impact



Met Office

Health Forecasting Activity

Current Services

COPD

Heatwave service
for Dept of Health

UV Service

expansion in
collaboration with
Cancer Research
and others

Admissions forecasts

Needs further
development

Active Investigation (Current or Recent)

Cardiovascular Disease

- heart failure
- heart attacks (focus on repeat attacks)
- angina
- potential for service similar to COPD

Influenza

- predicting pandemics feasibility study into the 1889 pandemic
- are there identifiable weather / climate effects?

Cold Weather Warning Service

- trial winter 08/09 in NW England

Thunderstorm asthma

- rare event forecasted successfully in 2005
- links to air quality

Potential New Areas

Multiple Sclerosis

- evidence from literature of a link with weather

Arthritis and rheumatism

- evidence that some weather conditions increase pain.

Maternity unit admissions

- evidence from US and RD&E

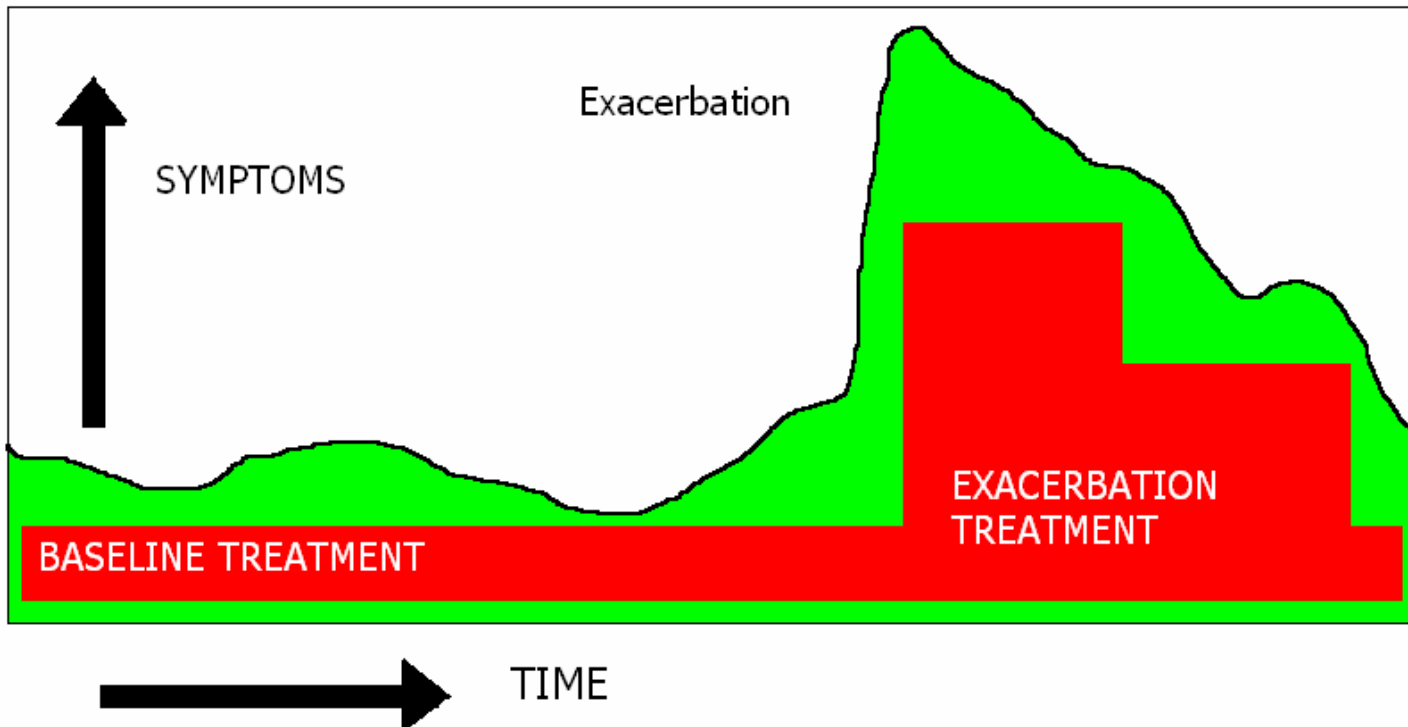
Mental health

- some encouraging early analysis

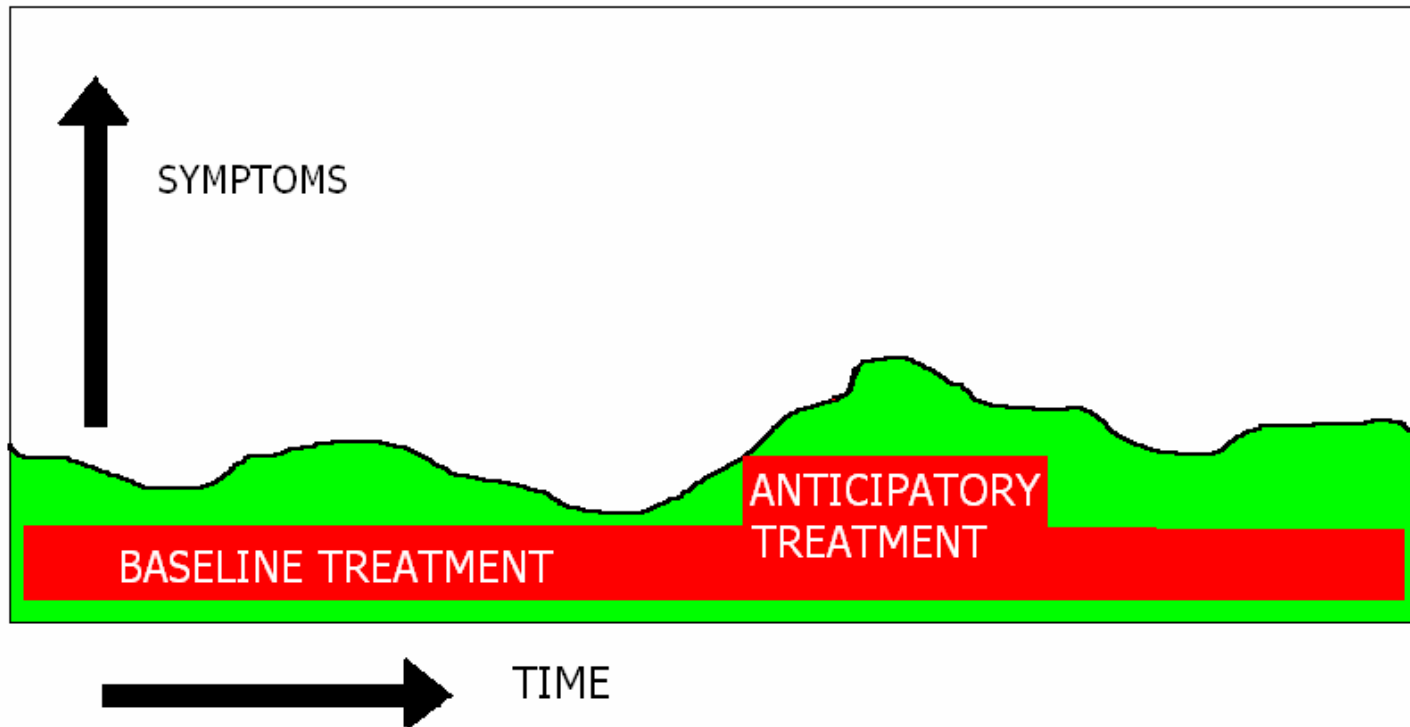


COPD Health Forecasting

Usual care for people with COPD without a Health Forecast



In some patients this intervention will prevent an exacerbation and hospitalisation





Met Office

Clinically valid interventions

Clinically valid interventions for patient and healthcare professionals developed and endorsed by our **COPD Clinical Advisory Group**, chaired by Dr David Halpin.

The interventions are:

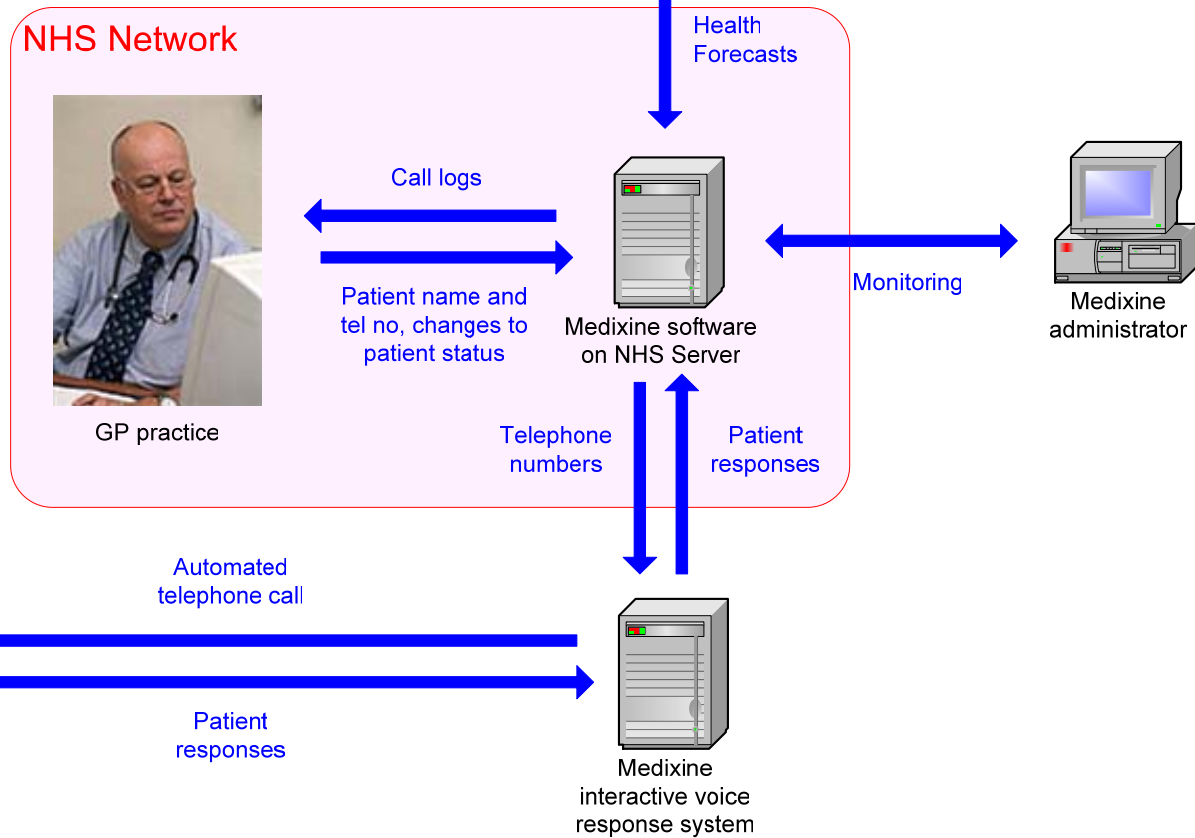
- Early reporting of symptoms
- Available medication
- Keeping the house warm
- Cold outdoor temperatures
- Physical activity
- Anxiety and depression
- Treatment based on NICE Guidelines



Healthy Outlook™ System



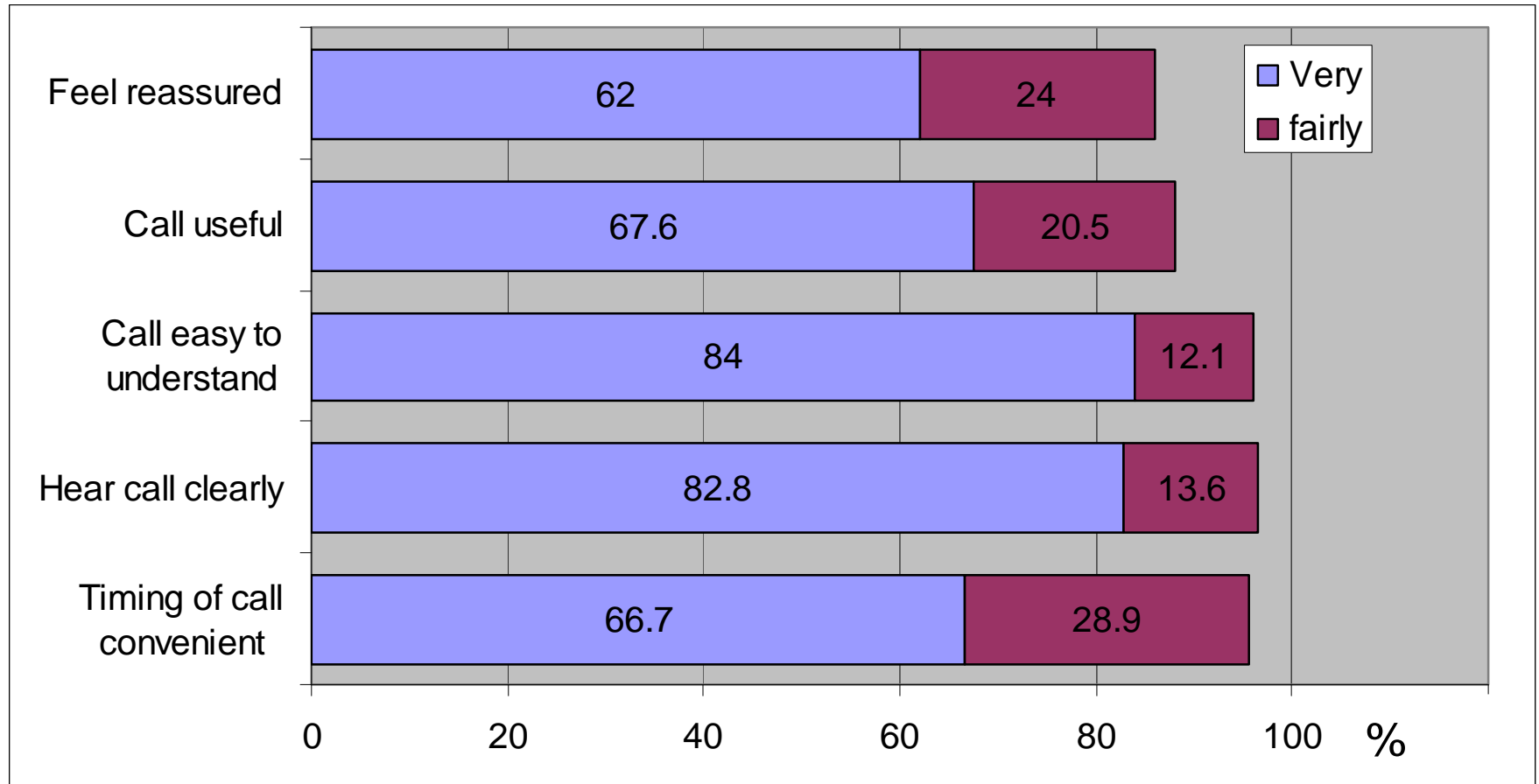
Met Office Forecaster



Person with COPD



Calls are liked and easily understood by patients





Overall admissions down over 20% in practices that used the service

	2006-07	2007-08	Change
Practices that used service (adm per 100pts)	4.02	3.09	-23%
Practices that did not use service (adm per 100pts)	4.73	4.33	-8%
Difference (adm per 100pts)	0.71	1.24	

Analysis for all practices using an 'opt in' recruitment method



What patients think about the service

“Helpful and reassuring, and it made me more aware of why I don’t feel too well, and to pay more attention to weather report. I wish I had this all the time”

“Found this system to be very useful in planning the ordering of medication, and adjusting life style to take account of the weather conditions.”

“Thank you for your automated telephone calls during the winter period 2007/2008. I found this service very helpful, when you live alone it’s good to know that there is help at hand.”

“Very helpful service, forewarned is forearmed. Thank you.”

COPD HEALTH FORECASTING SERVICE



Teaching | Addysgu

Bwrdd Iechyd Lleol
Local Health Board

Rhondda Cynon Taf
Rhondda Cynon Taff



REBECCA EDWARDS
SERVICE DEVELOPMENT MANAGER
Rhondda Cynon Taff Teaching LHB

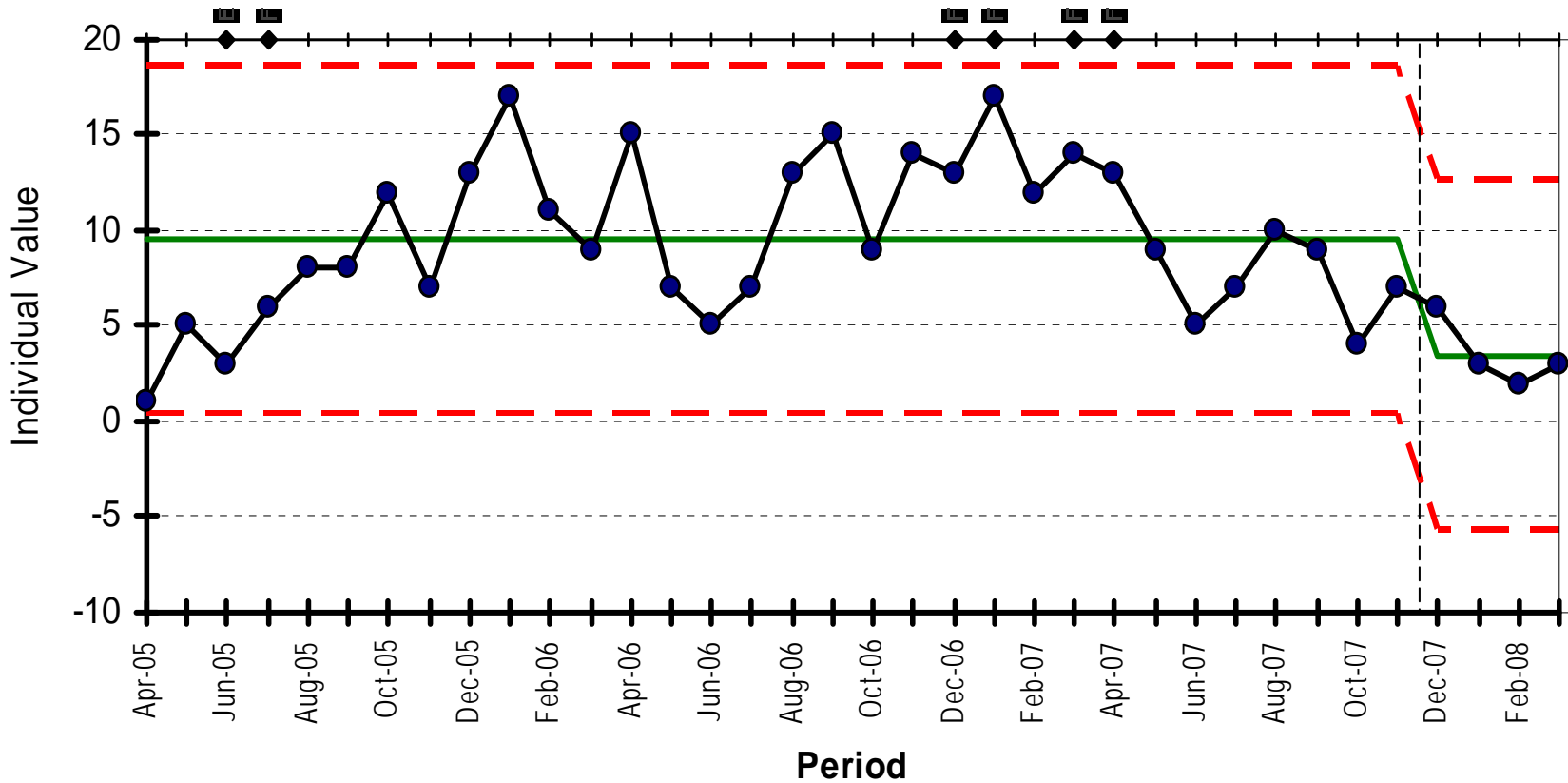
Implementation in Rhondda Cynon Taff

- Piloted Winter 2007/08
- 7 GP Practices
- 226 patients participated
- Patient Education Pack
- Anticipatory Care Advice
- Signposting to Services
- Access to Practice when required

What we found.....

Total Admissions for Participating Practices

Special Cause Flag



What we found.....

Period December - March	Participating Practices	Non-Participating Practices
2007/08 compared to 2006/07	70% decrease in admissions	28% decrease in admissions
2007/08 compared to 2005/06	63% decrease in admissions	18% decrease in admissions

- Patient feedback overwhelmingly positive
- Practice enthusiasm
- Recognition of increased awareness of the impact on patients

Building on the Pilot – 2008/09

- Roll-out of service across Rhondda Cynon Taff and Merthyr Tydfil
- 25 Practices
- 889 patients registered
- 4 elevated risk alerts in December and January

Benefits

- Cost benefit analysis favourable
- Reduction in admissions
 - Positive for patient and health service
 - By assumption patients had less exacerbations
- Anecdotal feedback
 - Improved knowledge and awareness
 - Confidence
- More detailed evaluation to be undertaken this year with larger cohort of patients