

## BACKGROUND

Patterns of disease and death vary dramatically throughout the year. Understanding these patterns can help prevent issues ranging from excess deaths in winter to elevated injuries from violence in summer. Previously however it has not been easy to check what infections, injuries or causes of death peak or subside at different times of the year.

**The Health Calendar 2007 illustrates, for the North West of England, predicted periods of the year where high levels of selected health conditions are more likely to occur**

To allow instant access to such intelligence the North West Public Health Observatory has calculated and compiled seasonal patterns in illness and death onto a Health Wall Planner for 2007 and produced this online calendar ([www.nwpho.org.uk/healthcalendar](http://www.nwpho.org.uk/healthcalendar)). The wall planner illustrates, at a glance, the periods of the year where various health conditions are expected to be in excess. The online calendar shows the same predictions and also allows access to fact sheets and links to support networks for all the health conditions presented.

### **The aims of this planner and calendar are to:**

- Help you observe the likely seasonal patterns of health conditions across the coming year
- Enable Primary Care Trusts, Local Authorities and others to prepare for increases in events
- Allow promotion / prevention campaigns to be targeted at appropriate times of the year
- Provide a baseline against which any future effects of climate change can be assessed

## HOW WE HAVE CONSTRUCTED THIS CALENDAR

1. Data were selected from a range of sources (see below) where the date of occurrence was available.
2. Based on daily levels of occurrence across five years (2001-2005), the seasonal pattern was modelled using day of the week, bank holidays, week of the year and the trend over time, ensuring that the model controlled for the effect and interactions of the parameters.
3. Using the resulting statistical model, the estimated number of events for each condition was generated for all the days in 2007. Weekly totals were calculated and a level of excess was determined where the weekly value was above a peak line – ie. was above the maximum weekly value minus the 95% confidence interval (of the mean)<sup>i</sup>.
4. Periods of the year were then identified for each health condition where high levels are predicted for 2007.
5. Fact sheets providing key information on each condition and links to support networks are provided, so that users can access advice about how to protect themselves from succumbing to some seasonal disorders.
6. In addition, the calendar includes details of a wide range of national and global awareness days.

<sup>i</sup> This peak range measure was determined as being the best possible way of differentiating seasonal peaks between conditions and we are in the process of refining this into a more standardised statistical measure of exceedance.

## DATA SOURCES & DEFINITIONS<sup>ii</sup>

Models and predictions were produced from seasonal North West data where daily occurrences are available from validated health datasets:



### Births and Deaths

Births and deaths extracts from Office for National Statistics  
[www.statistics.gov.uk](http://www.statistics.gov.uk).

(1 Births - all births; 2 Circulatory Disease Deaths - ICD-10 codes I00-I99; 3 Respiratory Disease Deaths - ICD-10 codes J00-J99)



### Poor Health and Illness

Hospital Episode Statistics data from the The Information Centre  
[www.hesonline.nhs.uk](http://www.hesonline.nhs.uk). Numbers of episodes were extracted by primary diagnosis for emergency admissions only.

(4 Asthma - ICD-10 codes J45-J46; 5 Chest Pain - ICD-10 codes R101, R073, R074; 6 Chronic Lung Disease - ICD-10 codes J40-J44; 7 Heart Failure - ICD-10 codes I50; 8 Diabetes - ICD-10 codes E10-E14; 9 Heat and sun-stroke - ICD-10 codes L55, T67, E86, X30, X32; 10 Mental Health - ICD-10 codes F20-F48; 11 Stroke - ICD-10 codes I60-I69)



### Injury and Violence

Hospital Episode Statistics data from the Information Centre  
[www.hesonline.nhs.uk](http://www.hesonline.nhs.uk). Numbers of episodes were extracted by primary diagnosis for emergency admissions only.

(12 Road Traffic Accidents - ICD-10 codes V01-V79; 13 Self Harm - ICD-10 codes X60-X84 & Y10-Y34; 14 Violence - ICD-10 codes X85-X99 & Y01-Y09; 15,16,17,18 Falls - ICD-10 codes W00-W19)



### Gastro-intestinal Infections

Laboratory reports for England from the Health Protection Agency  
[www.hpa.org.uk](http://www.hpa.org.uk).

(19 Campylobacter; 20 Cryptosporidium; 21 Norovirus; 22 Salmonella)

In addition, monthly weather data has been included on the calendar for reference:



Climate averages from the Met Office © Crown copyright  
[www.metoffice.gov.uk](http://www.metoffice.gov.uk)

(24 England NW & Wales N 1971-2000 averages)

## ACKNOWLEDGEMENTS

We are extremely grateful to other staff of the North West Public Health Observatory and Centre for Public Health who have contributed to the production of the Health Planner and Calendar: Neil Potter, Wayne Murray, Jodie Sharrock & Steve Rogers for designing and developing the website; Sara Hughes, Beccy Manning and Alyson Jones for production and editing of the fact sheets and events information; Sacha Wyke for extracting the data; and Lee Tisdall for design and production of the planner.

<sup>ii</sup> Numbers listed by each condition refer to the ID displayed for that condition on the Health Planner