



10: Health Protection



10. Health Protection

Communicable diseases continue to be a major cause of death and illness even in the modern world, despite considerable progress in prevention and cure. This section of the report firstly considers Health Care Associated Infections, focusing on the two that have been of greatest public concern. The next section on communicable diseases considers three particular diseases of interest locally. The final section looks at emergency planning and some of the events that have happened during 2008-09.

10.1 Health Care Associated Infections

Devon Primary Care Trust has legal responsibility under the Health and Social Care Act 2008 (which has now replaced the Health Act 2006), known as the Hygiene Code, to ensure that services we deliver or commission meet the 11 duties which are set out in the Act. The new regulatory body for health and social care, the Care Quality Commission, has required all organisations providing health care to be registered to do so since 1st April 2009. Devon Primary Care Trust has achieved unconditional registration for its directly-provided services and has to show that it has taken reasonable steps to ensure that the health care services commissioned from Health Trusts meet these standards. The Department of Health has set the National Health Service a target to reduce Health Care Associated Infections by 50% by 2010. In data released in September 2008 by the Health Protection Agency, the number of Meticillin Resistant Staphylococcus Aureus bloodstream infections had fallen by 57% compared to the level in 2003-04 when the target was initially set. Across the United Kingdom, the Strategic Health Authorities set challenging targets for individual trusts. Primary Care Trusts, in their role as commissioners of health care services, agree individual monthly and annual trajectories with NHS Hospital Trust and NHS Foundation Trust providers for whom they are the coordinating commissioner.

MRSA

MRSA is short for Meticillin Resistant Staphylococcus Aureus. It is a type of bacteria which has become resistant to some antibiotics. It is believed that approximately 30% of the population carry Staphylococcus Aureus either in their noses, throats, or on the skin. In healthy people this bacteria is not harmful, but it can be a problem in hospitals where people are recovering from operations and illnesses and are much more vulnerable to infection. The Health Protection Agency maintains the national database for surveillance of this organism and the national report for March 2009 stated that:

- There continues to be a downward trend in MRSA bacteraemia with a 7% decrease in the number of reported cases received in October to December 2008 compared to the previous quarter (July to September 2008), and a 38%



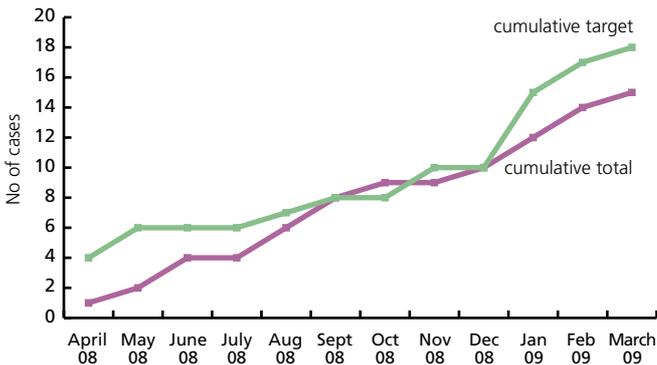
reduction compared to the corresponding quarter of 2007 (October to December).

- There was a 30% decrease in the number of reported MRSA bacteraemia received in the financial year 2007-08 compared to the financial year 2006-07, with a decrease in the rate from 1.67 to 1.19 cases per 10,000 bed days.

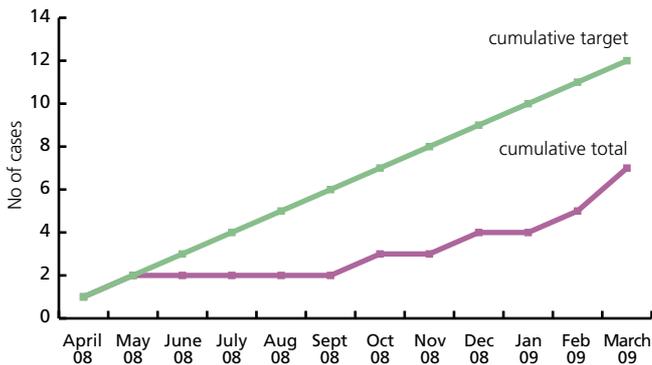
These national figures reflect the downward trend we have seen in the Devon Primary Care Trust area (Figure 10.1).

Figure 10.1 MRSA - progress against targets for 2008-09

Royal Devon and Exeter NHS Foundation Trust



Northern Devon Healthcare NHS Trust



Source: Health Protection Agency, HCAI Data Capture System, 2008-09.

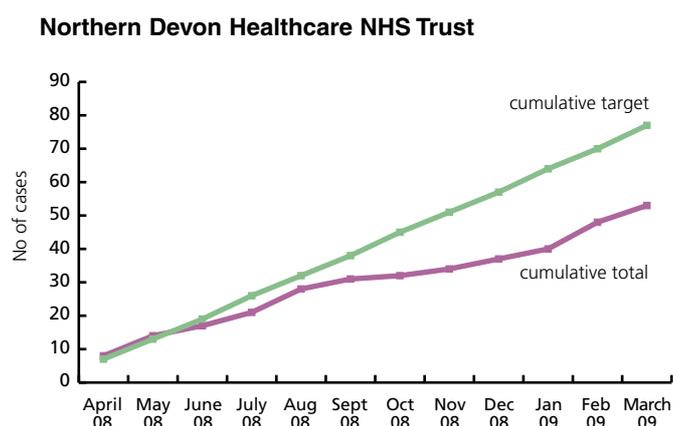
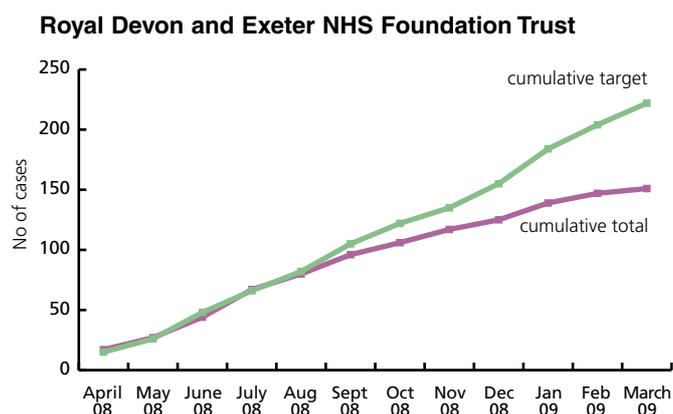
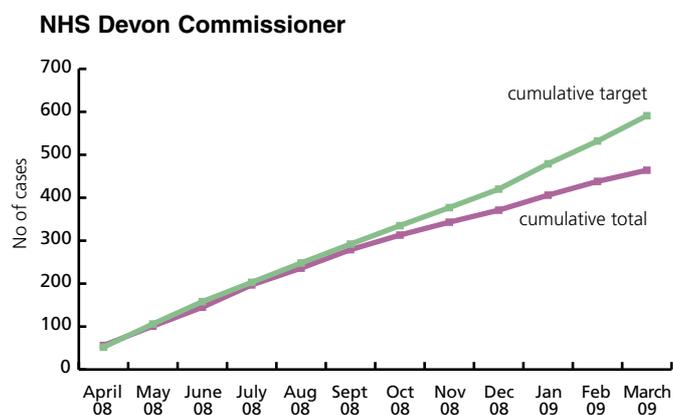
Clostridium difficile

Clostridium difficile (also known as C-diff) is a bacterium that is present naturally in the gut of around 3% of adults and 66% of children. Clostridium difficile does not cause any problems in healthy people. However, some antibiotics that are used to treat other health conditions can interfere with the balance of 'good' bacteria in the gut. When this happens, Clostridium difficile bacteria can multiply and cause symptoms such as diarrhoea and fever. As Clostridium difficile infections are usually caused by antibiotics, most cases usually happen in a healthcare environment such as a hospital or care home. Older people are most at risk from infection, with the majority of cases (80%) occurring in people over 65. Most people with a clostridium difficile infection make a full recovery. However, in rare cases, the infection can be fatal. The number of cases rose by 7% between 2005 and 2006, to 55,620 in 2006. One of the main reasons for this rise is the improvement in tests to diagnose the infection, but there has clearly been an increase in the number of cases. In most cases, Clostridium difficile infections can be prevented by following good hygiene practices in healthcare environments. However, it is extremely contagious and can spread very easily, which is why hospitals must be scrupulous in their approach to cleanliness. Again, challenging local targets are set for reductions (Figure 10.2).

For all cases of Meticillin Resistant Staphylococcus Aureus, a Root Cause Analysis is undertaken. This is an investigation of the care and circumstances that may have contributed to the infection. This process is supported by the NHS Trusts, NHS Foundation Trusts, general practice and other primary care providers. From this investigation, it is possible to share good practice and to learn from the event to prevent similar circumstances from occurring. Not all investigations lead to a definitive result but the learning is still shared. A similar approach is being applied for cases of Clostridium difficile in the southern area of Devon and the outcomes of the analyses are being shared with all partner organisations.

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Figure 10.2 Clostridium difficile - progress against targets for 2008-09



Source: Health Protection Agency, HCAI Data Capture System, 2008-09.

10.2 Communicable diseases

Table 10.1 shows the number of infectious diseases across the Devon Primary Care Trust area (from April 2008 to March 2009).

Table 10.1: Number of infectious diseases across the Devon Primary Care Trust area from April 2008 to March 2009

	Apr-Jun	Jul-Sep	Oct-Dec	Jan-Mar
Measles	11	7	1	12
Meningitis other	4	6	19	4
Meningococcal disease	1	6	9	19
Haemophilus influenzae	0	0	0	0
Whooping cough	9	17	7	3
Scarlet fever	12	5	5	9
Tuberculosis	2	5	3	7
Hepatitis A	1	1	1	0
Hepatitis B	11	2	5	9
Hepatitis E	1	2	0	23
Malaria	0	1	18	1
Mumps	12	13	1	44
Rubella	2	1	0	4
Sub Total	50	47	69	135
Campylobacter	221	340	253	213
Salmonella	34	46	41	24
E.Coli O157	2	12	4	1
Cryptosporidium	20	29	27	46
Giardia Lamblia	16	18	16	13
Shigella	10	10	7	12
Suspected food poisoning (other)	1	12	6	3
Total suspected food poisoning	304	467	354	312
Population	740,819	740,819	740,819	740,819
Food poisoning rates per 100,000*	41.04	63.04	47.78	42.2
GRAND TOTAL	354	514	423	447

*Includes notified cases and those otherwise ascertained
Source: Health Protection Agency, 2009



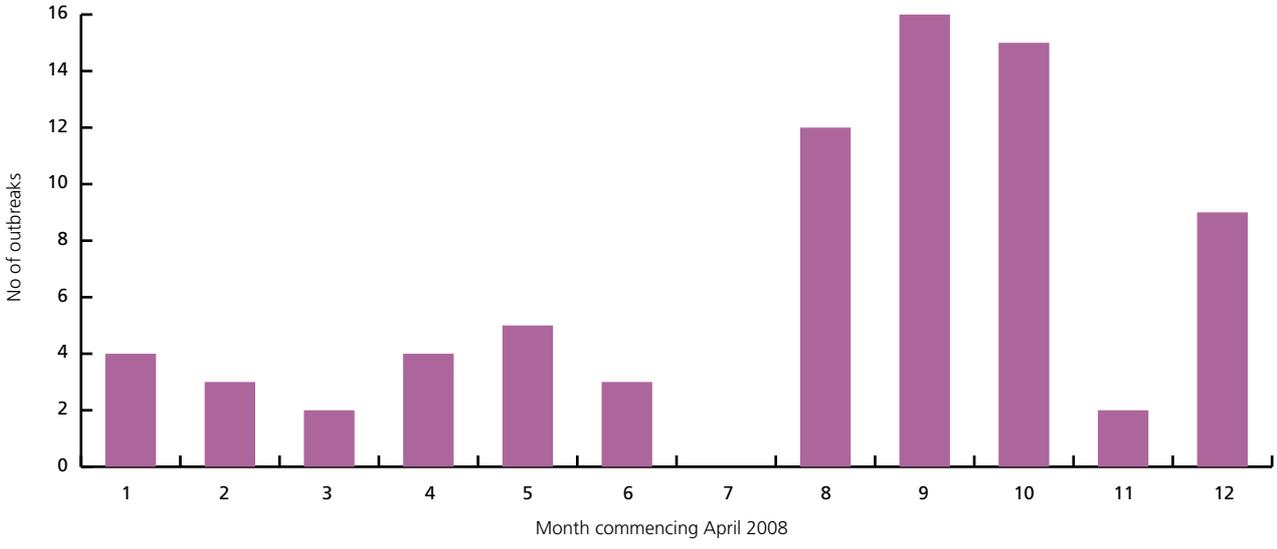
Norovirus

One example of the continuing impact of communicable disease on the population is Norovirus, or Norwalk virus. It is not a serious illness, in that it rarely has lasting or severe effects, but is an unpleasant experience for the day or two that the sufferer is affected, and it is extremely infectious. Outbreaks of Norovirus have come to prominence nationally in the last few years as a result of extensive and prolonged outbreaks in hospitals, which have halted elective surgery and precipitated bed availability crises. As a result, there has been media and political interest in the problem. Until recently, data on the full public health impact of Norovirus has been difficult to come by as it has been perceived as a trivial problem for the individual. However, more extensive surveillance has now been started, so a more complete picture should be available.

In the Devon Primary care Trust community area in 2008-09 there were 75 outbreaks of diarrhoea and vomiting illness, thought to be due to Norovirus, notified to the Devon Health Protection Team. This is certainly an underestimate of the true extent of the problem. Of these 75 outbreaks, 11 were in nurseries, 14 in pre-schools and schools, three were prison outbreaks and the remaining 47 were in Nursing and Residential homes. The seasonal distribution shows a predominance of cases in the winter months between November and February, although the problem is present all year round (Figure 10.3). The local hospitals also suffered outbreaks of Norovirus over the same period in addition to these community outbreaks, so it can be seen that the total impact was considerable.

Norovirus, although itself a relatively minor illness, is a major cause of illness and lost productivity in Devon and if anything, the problem appears to be getting worse. Prevention of Norovirus is simple, but requires scrupulous attention to environmental and personal hygiene.

Figure 10.3 Numbers of outbreaks of Norovirus in Devon, 2008-09



Source: Health Protection Agency, 2009

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PVL (Panton-Valentine leukocidin) - producing Staphylococcus Aureus

PVL-producing Staphylococcus Aureus is a re-emerging infection that is once again causing problems that range from recurrent large boils, which is the common manifestation of infection, to the rare necrotising pneumonia. Staphylococci are very common bacteria, but the possession of the PVL gene by some strains means that they are better able to kill white cells in the body and hence cause persistent infection. Recently there has been an increase in these infections nationally, and the South West has been one of the first parts of the UK to be affected.

Although Devon has been affected early, there have been problems with PVL-producing Staphylococci in the rest of the country, to such an extent that a national working group has recently produced a set of guidelines for managing this infection. The group has included members from Devon, as locally there has been considerable experience in managing the infection.

Currently the evidence base for the guidelines is limited and most recommendations are based on consensus statements or expert opinion alone. However, systematic collection of data is taking place locally and hopefully we will be able to contribute to the knowledge on this subject.

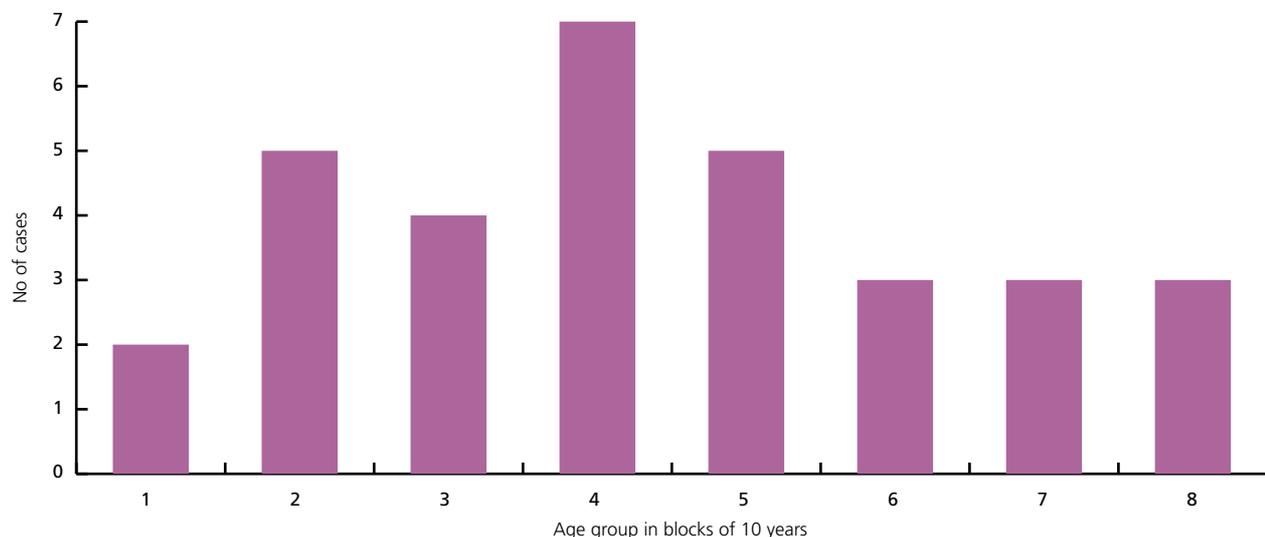
Until 2008 there had been relatively few PVL cases in Devon, but in 2008-09 there were 32 cases. Approximately two-thirds of cases are males. All age groups are affected, although most cases are aged between 20 and 50 years of age (Figure 10.4).

PVL Staphylococcus Aureus is an increasing problem both locally and nationally. The existing surveillance system needs to be maintained and the effectiveness of different treatments and clearance regimes monitored to establish the most effective ways to treat the condition and prevent it recurring.

Cryptosporidiosis

This section of the report gives a short description of an outbreak of Cryptosporidiosis in Devon which took place early in 2008-09. Cryptosporidium is a single-celled intestinal parasitic protozoon which causes diarrhoea, vomiting and fever. It is most commonly found in young cattle and lambs, but human beings also have their own strain. The disease is transmitted through the faeco-oral route, that is the oocysts or eggs of the parasite are shed in the faeces of sufferers. This can then contaminate water, surfaces or food from which the oocysts can get into the mouth and then into the intestines where they cause infection. Only a few oocysts are needed to cause infection, which develops two to 10 days after ingestion. The illness is self-limiting, and apart from fluids to prevent dehydration, there is no

Figure 10.4 Age distribution of PVL cases in Devon Primary Care Trust, 2008-09



Source: Health Protection Agency, 2009



specific treatment for the condition in immunocompetent people. Illness usually lasts between one and three weeks following which there is complete recovery. However, it can be a life-threatening condition in the immunocompromised.

Nationally, there have been a number of outbreaks of *Cryptosporidium* due to three main causes:

- Direct contact with animals or their faeces, such as at petting farms.
- Ingestion of water at swimming pools following a faecal accident.
- Ingestion of tap water following a mains water contamination incident.

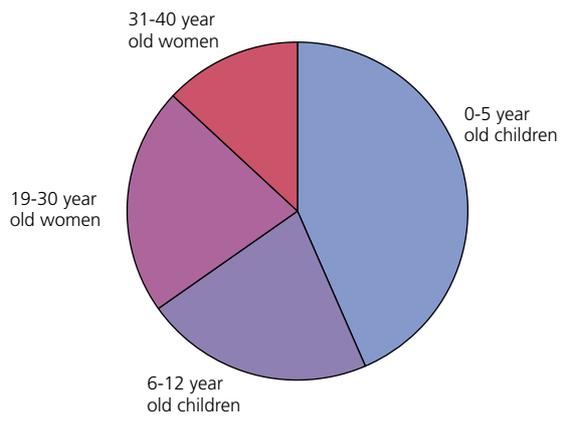
Control of such outbreaks has been directed to addressing the root cause, and also to improving personal and hand hygiene. Where drinking water is involved, immediate control action can be achieved by boiling water which kills the oocysts. The evidence base for the causes of outbreaks and their control has been accumulating over the last 25 years during which it has been possible to identify the organism.

Historically, there was a large presumed waterborne outbreak in South Devon in 1995 and there have been a number of small incidents since relating to animal contact. In this case, the microbiology consultant and Exeter City Environmental Health

Department noticed an increase in cases in Exeter City residents early in the year which was not reflected elsewhere in the County (Figure 10.5).

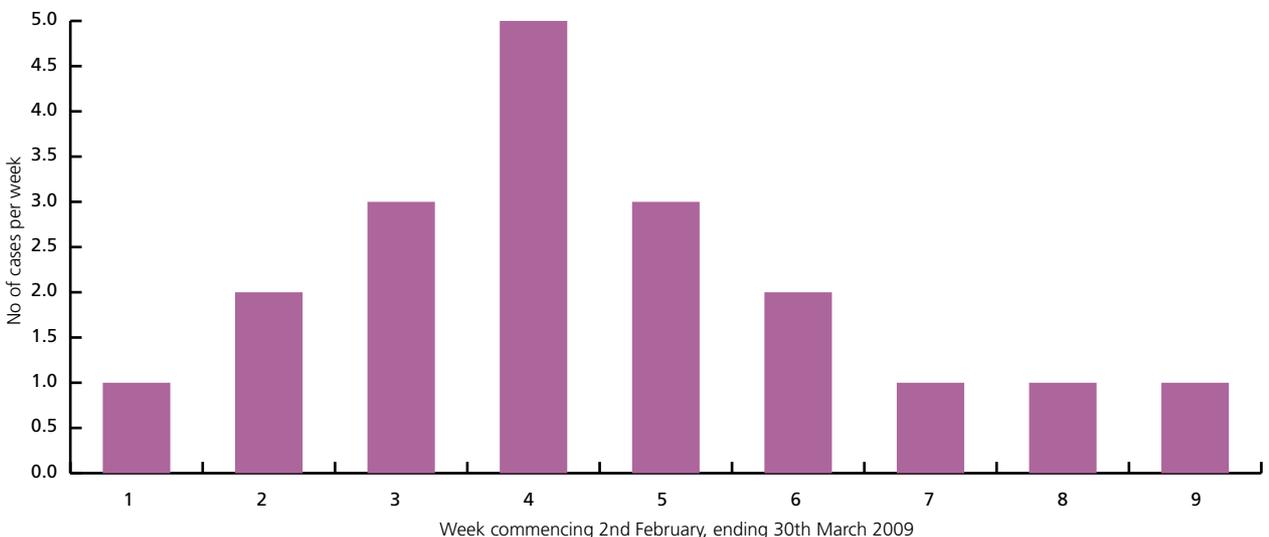
The age distribution of cases suggested something causing the illness being done by mothers and young children (Figure 10.6). The investigation covered 20 children who were believed to have been infected. Using a standard questionnaire instrument, the City Council, in association with the Health Protection Agency and the Primary Care Trust, investigated the cases and found a link between becoming ill with *Cryptosporidium* infection and swimming at a local pool. The pool water was found

Figure 10.6 Distribution of cases of cryptosporidiosis by age group



Source: Health Protection Agency 2009

Figure 10.5 Number of *Cryptosporidium* cases by week for February and March, 2009



Source: Health Protection Agency, 2009

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to have oocysts in it at very low concentrations not considered a hazard to health, probably reflecting a faecal accident some time previously. At this stage the outbreak was over and all that remained was to emphasise the importance of pool clients adhering to recommendations about children with diarrhoea, and pool managers ensuring that pools are maintained in accordance with best practice.

In summary, this was a relatively small outbreak of Cryptosporidiosis affecting young children and their mothers using a swimming pool. A joint investigation between Health and Local Authority services promptly identified the cause and initiated corrective action.

10.3 Emergency Planning

The Civil Contingencies Act (2004) places a duty on the Primary Care Trust and Devon County Council to ensure they have adequate arrangements in place for a planned response to civil emergencies.

Primary Care Trusts are assessed annually on emergency preparedness through the Healthcare Commission audit of compliance with Department of Health “Standards for Better Health” where the performance measures for public health include Standard C24 “Health care organisations protect the public by having a planned, prepared and, where possible, practised response to incidents and emergency situations which could affect the provision of normal services”.

With responsibilities across the whole of Devon, the Primary Care Trust is a strategic partner in emergency planning and response in the county. It is fully involved in cooperation arrangements between responder organisations (the Local Resilience Forum), and the Major Incident Plan provides the direction and guidance needed to enable us to respond in a structured way to any major incident.

Emergency planning priorities arise from the risk assessment processes used to produce the Community Risk Register. Publication of the Community Risk Register is a statutory requirement of the Local Resilience Forum and identifies the following very high hazards for our area:

- **Pandemic Influenza:** This is also a very high national priority. There is a specific response plan for this which includes the response plan for an outbreak of Avian Influenza.
- **Flooding:** The Primary Care Trust responds in accordance with its Major Incident Plan, providing clinician support to rest centres if people need to be evacuated. It also coordinates the wider health response and provides public health advice if required.

The full Community Risk Register can be found at www.dcisprepared.org.uk



The Major Incident Plan has been tested, with three tests of the alerting procedure and a small scale live test through participation in Exercise 'Brigid', which tested the multi-agency response to widespread flooding in North Devon.

However, the plan was put to the test for real on three occasions during the year, when Devon Primary care Trust responded to major incidents.

Exeter – the attempted bombing of the Giraffe Café on 22nd May 2008

Terrorism came to Devon with an attempted suicide bombing in the Giraffe Café. Fortunately the only person injured was the bomber, though the café was busy at the time. The Primary Care Trust was involved in the strategic coordination of the health response to the incident, which necessitated the closure and cordoning of a large part of the city centre. There were also considerations arising from the hospitalisation of the suspect and police arrangements to gather evidence.

East Devon – Freak flooding on 30th October 2008

East Devon was hit by a freak storm in the early hours of the morning, in which heavy rain followed a

huge hailstorm, causing extensive flooding and winter conditions. A number of evacuees from flooded homes congregated at Ottery St. Mary Hospital, which became a make-shift rest centre as well as continuing to care for patients. Emergency services were needed to reach the town and health staff showed their resilience in getting to work and supporting colleagues. As well as being involved in coordinating the response to the incident we are also included in the longer-term recovery issues of those affected by the flooding.

North and East Devon – Blizzards on 6th February 2009

The heaviest snowfalls for many years hit Devon, causing widespread disruption to all forms of transport and some power losses as supplies were affected by the weight of snow on power cables. Emergency services rescued people from their vehicles as they became stranded in the snow and a rest centre was opened to shelter them. The Primary Care Trust worked with other organisations in the strategic and local response to the weather, having to deal with its own in-house issues of how to move staff about and keep hospitals running, as well as the needs of vulnerable people in the community.

Photograph courtesy of East Devon District Council



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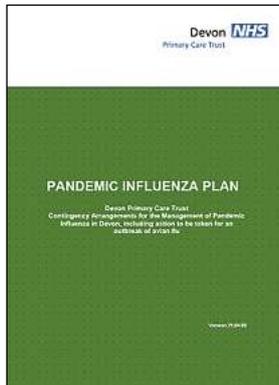
Preparing for Pandemic Influenza

Pandemic Influenza preparedness has been the major work stream for emergency planning during 2008-09. Planning has involved every directorate within the Trust and other health organisations in the county, culminating in the approval of the Pandemic Influenza Plan in July 2008. Pandemic planning continued to develop as more specialised guidance emanated from the Department for Health. The Primary Care Trust has also planned with Local Resilience Forum partners to produce the Local Resilience Forum Pandemic Plan, aimed at coordinating the response across the whole of Devon and Cornwall.

The plan was tested on 5th November 2008 in Exercise 'Pneumo', a large scale multi-agency exercise which raised awareness of our plans, testing them in a table-top environment.

The Pandemic Influenza Plan is a comprehensive document that has stood up to assessment and scrutiny to meet the standards expected by the Department for Health.

Communications between health organisations had already been tested during a reporting exercise with the South West Strategic Health Authority, but refinement and testing of our arrangements for the distribution of stockpiled anti-viral medication (Tamiflu) and contingency plans in the event of systems failures represented, in themselves, significant pieces of work to ensure that Devon was fully prepared.



Recommendations

- 10.1 Infection control and good hygiene should be practised in all settings.
- 10.2 Hand washing is the single most effective measure in preventing and controlling infection and should be actively encouraged at home and work.
- 10.3 Coughs and colds. using the "Catch it, Bin it, Kill it" message to prevent the spread of flu viruses.
- 10.4 For Norovirus, the Primary Care Trust, its providers and the local Health Protection Agency team, continue to support and improve the existing systems for Norovirus surveillance, and that rapid testing for Norovirus is made available for community outbreaks.
- 10.5 The Primary Care Trust should support education in schools, nurseries and residential settings on infection control, and audits, where appropriate.
- 10.6 For PVL-producing Staphylococcus Aureus, there should be surveillance, awareness-raising of both the organism and the current guidelines, and audits undertaken of the effectiveness of treatments to remove the organism, and to prevent recurrence, to contribute to the development of the evidence-based guidelines.
- 10.7 To prevent outbreaks of infectious disease, swimming pool users must cooperate with pool managers in not swimming when they or their children have diarrhoea, and for two weeks afterwards; any faecal accidents should be reported to the pool supervisors, and swimming pool managers must ensure that their treatment processes are well-maintained and that they have signage that reflects swimming pool users' responsibilities for other people's health.
- 10.8 Major Incident Plans and Business Continuity Plans need to be tested and re-tested, with improvements made as part of a continuous process.