2.1 Health Protection Update

The key function of the NHS Lanarkshire Health Protection Team (HPT) is in the prevention and control of communicable diseases and environmental hazards, with emergency planning also a key aspect of the work.

This chapter reports on specific examples of the HPT work in 2013/14 – a fire risk at a Wishaw tyre storage site, NHS Lanarkshire resilience and preparation for the Commonwealth Games in 2014, the expanded immunisation programme, particularly for childhood influenza vaccine, and the matrix covering the key screening programmes. Each of these sections comprised a very significant amount of work by HPT members working in partnership with colleagues. Each section highlights learning points and key priorities for action.

The HPT provides an emergency response rota of Consultants in Public Health Medicine (Health Protection), Health Protection Nurses and support staff during normal working hours. An out-of-hours rota comprises consultants, with input from specialty registrars. The HPT typically deals with enquiries covering a wide variety of different diseases and environmental hazards of varying severity and urgency. Examples include:
- viral diarrhoea outbreaks affecting care homes
- illnesses affecting children attending nurseries, primary or secondary schools
- meningococcal infection and contact tracing
- single and clustered legionella cases requiring investigation for common exposure
- gastro-intestinal disease, and food and water source investigation
- tuberculosis cases and management
- influenza cases and outbreaks
- illness abroad including potential viral haemorrhagic fever
- immunisation enquiries
- comment on new industrial planning applications and/or response to public concern about current industrial activities
- diesel spills
- problems with drinking water.

In preventing and reacting to disease and environmental issues, the HPT proactively and reactively links with colleagues within the Public Health Department, microbiology, infectious disease units, infection control, Lanarkshire NHS Board, primary and secondary care, North and South Lanarkshire Council environmental health officers, as well as other NHS health protection teams, Health Protection Scotland (HPS), Scottish Water, government veterinarians and Scottish Government.

During 2013, the health protection team received 1,619 recorded enquiries – a 47% increase since 2009 and a 15% increase from the previous year. A summary of the calls by source and topic are shown in the Table 2.1.1. The sustained increase in laboratory cases in 2012 and 2103 has been due in large part to an on-going transmission of pertussis (whooping cough). The Scottish Government Health Department continues to recommend vaccination of pregnant women from 28 weeks gestation to protect neonates and infants.
### Table 2.1.1
Health Protection Team enquiries

<table>
<thead>
<tr>
<th>Source</th>
<th>2009</th>
<th>2010</th>
<th>2011</th>
<th>2012</th>
<th>2013</th>
</tr>
</thead>
<tbody>
<tr>
<td>Laboratory</td>
<td>76</td>
<td>102</td>
<td>98</td>
<td>299</td>
<td>326</td>
</tr>
<tr>
<td>GP</td>
<td>86</td>
<td>63</td>
<td>86</td>
<td>99</td>
<td>130</td>
</tr>
<tr>
<td>Environmental health</td>
<td>46</td>
<td>53</td>
<td>59</td>
<td>42</td>
<td>24</td>
</tr>
<tr>
<td>School</td>
<td>30</td>
<td>27</td>
<td>69</td>
<td>75</td>
<td>61</td>
</tr>
<tr>
<td>Nursery/playgroup</td>
<td>47</td>
<td>32</td>
<td>97</td>
<td>58</td>
<td>44</td>
</tr>
<tr>
<td>Nursing home</td>
<td>46</td>
<td>64</td>
<td>60</td>
<td>90</td>
<td>56</td>
</tr>
<tr>
<td>Hospital ward</td>
<td>43</td>
<td>32</td>
<td>39</td>
<td>30</td>
<td>40</td>
</tr>
<tr>
<td>BBV exposure</td>
<td>7</td>
<td>4</td>
<td>2</td>
<td>0</td>
<td>13</td>
</tr>
<tr>
<td>Gastroenteritis</td>
<td>160</td>
<td>220</td>
<td>232</td>
<td>248</td>
<td>77</td>
</tr>
<tr>
<td>Immunisation/vaccine</td>
<td>243</td>
<td>266</td>
<td>278</td>
<td>291</td>
<td>306</td>
</tr>
<tr>
<td>Infection control</td>
<td>12</td>
<td>18</td>
<td>7</td>
<td>19</td>
<td>10</td>
</tr>
<tr>
<td>Water</td>
<td>4</td>
<td>9</td>
<td>2</td>
<td>3</td>
<td>3</td>
</tr>
<tr>
<td>Other (environmental health)</td>
<td>13</td>
<td>15</td>
<td>7</td>
<td>5</td>
<td>13</td>
</tr>
<tr>
<td>Other (communicable diseases)</td>
<td>199</td>
<td>264</td>
<td>259</td>
<td>274</td>
<td>353</td>
</tr>
<tr>
<td>Total no. of enquiries</td>
<td>1103</td>
<td>1081</td>
<td>1265</td>
<td>1409</td>
<td>1619</td>
</tr>
</tbody>
</table>

Source: Communicable Diseases/Environmental Health Record Form Database

Notifications of communicable disease are shown in Table A16 in the Statistical Appendix. In early March 2014, HPS went live with the new Scottish health protection case management system, called HPZone Scotland. This was commissioned for NHS Scotland, with NHS Lanarkshire playing a lead role. HPZone Scotland is an electronic case management system recording case demographics, details on disease, actions and notes, as part of HPT management. The system generates the key actions needed for common severe illnesses, thereby helping to improve quality of response.

HPZone Scotland enables real-time electronic sharing of case records, imports laboratory reports, links directly to HPS guidance on infectious diseases and environmental health processes, and shares non-patient identifiable data and common exposures across all health protection teams in Scotland. HPZone Scotland was a cornerstone of the enhanced response and surveillance supporting the Commonwealth Games in 2014.

### Key Points

- The health protection team works in partnership to proactively and reactively deal with a wide variety of diseases, which may involve significant numbers of cases or pose a high degree of risk to the local population.
- The electronic case management system HP Zone Scotland will support and enhance local and national health protection management.
Priorities for Action

• To maintain an effective health protection response and continue to contribute to the national web of surveillance.
• To develop appropriate knowledge and skills and adapt local HPT procedures to optimise the benefits of HPZone Scotland.

Dr David Cromie, Consultant in Public Health Medicine
Email: david.cromie@lanarkshire.scot.nhs.uk, Telephone: 01698 858117
2.2 Wishaw Tyre Fire Risk

Introduction
In January 2013, the Scottish Environmental Protection Agency (SEPA) discovered the storage of unauthorised tyres at a tyre recycling site in Lanarkshire, 200 metres south-west of Wishaw General Hospital. Initial reports estimated one million tyres on the site, but this number was subsequently reduced, as greater order was brought to the site. The site was only authorised to hold 1,000 tyres, through an online licence exemption process.

Background
The Health Protection Agency reported that large waste tyre fires caused three out of eight major incidents in England which required the activation of the Air Quality Cell (air monitoring) between April and July 2010.¹ Most such fires are suspected of being lit deliberately.² Large tyre fires are very difficult to extinguish and have the capacity to burn for long periods.¹ ² The resultant pollution can spread over a wide area affecting air, water, soil and herbage causing short- and long-term adverse health effects.

Risks and challenges
Airborne pollution from tyre fires includes a wide range of toxic chemicals such as: cyanide compounds, carbon monoxide, oxides of sulphur and nitrogen, hydrogen sulphide, particulate matter, and a range of carcinogenic organic compounds, including dioxins and polycyclic aromatic hydrocarbons. Contamination of waterways and land can occur through run-off of contaminated fire-fighting water.

The primary risk was that, depending on wind speed and direction and the size of the fire, the hospital might have been forced to evacuate hundreds of patients.

A significant fire would threaten the health of vulnerable individuals living in the area, particularly those with chronic lung conditions, e.g. asthma. Local transport and industry would have also been affected, for example, closing the West Coast Main Line and threatening nearby commercial premises, including a major Royal Mail distribution centre and the NHS West of Scotland Laundry.

Methods
A Contingency Planning Liaison Group and specialist sub-groups were set up to assess and manage the potential risks, arrange airborne hazard monitoring and provide sheltering and/or evacuation advice.

Results
A risk assessment considered the likelihood of an incident was low to medium but the impact could be very high. Following the work of the multi-agency group, a contractor, employed by SEPA with funding underwritten by the Scottish Government,
Key Points

- The incident highlighted the extreme difficulty in, and risk of, completely evacuating a major acute hospital, containing many seriously ill patients, even over a period of hours or days.
- SEPA and other organisations including Police Scotland and the Scottish Fire and Rescue Service continue to closely monitor the site and provide appropriate advice to the occupiers.
- The investigation needed to be mindful of potential legal implications.

Priorities for Action

- In light of the serious risks posed by this site and to minimise the risk of the situation recurring, NHS Lanarkshire considers that an enhanced regulatory and monitoring regime should be put in place.
- Further consideration of whether hospitals should have plans to evacuate the whole hospital and under what circumstances these plans would be enacted.

References


Dr S Josephine Pravinkumar, Consultant in Public Health Medicine
Email: josephine.pravinkumar@lanarkshire.scot.nhs.uk, Telephone: 01698 858235

Alan Robertson, Emergency Planning Officer
Email: alan.robertson@lanarkshire.scot.nhs.uk, Telephone: 01698 858225
NHS Lanarkshire Resilience – Getting Ready for the Games

Introduction
Glasgow hosted the Commonwealth Games for the first time in 2014. To prepare for the Queen’s Baton Relay, the Games and associated events, comprehensive Scottish, regional and local arrangements were put in place, involving a range of multi-agency and single agency groups.

The opening ceremony on 23 July initiated 11 days of international competition, finishing with the closing ceremony on 3 August. The efforts of 4,500 athletes from 71 countries competing in 17 sports at 20 venues were reported on by 3,000 media personnel. On peak days, there were over 100,000 spectators. Altogether, 1.3 million tickets were available. Although 97% of the tickets were purchased within the UK, 43% of the tickets were sold outwith Scotland resulting in a large influx of visitors, with up to 50,000 extra people in Glasgow and the surrounding areas. There was a television audience of up to one billion people.

While major sporting events are not intrinsically high risk, they are complex, involve a wide range of public and private organisations, and require extensive planning. The worldwide media presence can result in problems being given greater coverage than if they had happened at any other time.

Events in Lanarkshire were the triathlons at Strathclyde Country Park on 24 and 26 July, and the cycle time trials on 31 July. The cycle route started and finished in Glasgow, but went out to Moodiesburn in North Lanarkshire. In addition, the mountain biking at Cathkin Braes in Glasgow bordered South Lanarkshire. These events posed particular planning difficulties as tickets were not required for much of the routes and the number of spectators could only be estimated.

Risks
National and local risk registers identified a number of risks which were successfully managed.

- Contamination of Strathclyde Loch (triathlon swimming) by harmful organisms: controlled by the preparation of guidance, regular water testing and the construction of a membrane barrier to separate a swim area from the rest of the loch.
- Outbreaks of illness: controlled by daily reporting arrangements and the introduction of the new national electronic disease reporting system, HPZone Scotland.
- A mass casualty incident (either accidental or deliberate): controlled by a high level of security and inspections, a review of mass casualty arrangements, revalidation of protective suits used to decontaminate casualties exposed to harmful materials, and by additional resilience training and exercises.
• **Routine health care being affected due to travel disruption**: controlled by communications to ensure that staff and patients were aware of potential problems and that alternative arrangements were in place.

• **Staffing shortages caused by NHS staff taking leave to volunteer or spectate**: controlled by briefings and management action to ensure that leave was only granted if sufficient staff were available to provide routine services.

### Games time arrangements

- Daily teleconferences were held with Health Protection Scotland and NHS boards to quickly identify any outbreaks of illness.
- A Consultant in Public Health Medicine was based at the Multi-agency Coordination Centre (MACC) on the days when there were events in Lanarkshire.

### Legacy

NHS Lanarkshire hopes to build on the great success of the Games by encouraging people to increase their physical activity and improve their long-term health, through the Get Active Lanarkshire programme. It will also use the experience gained from the Games to inform its work on resilience.

### Key Points

- Extensive planning and response arrangements, involving multiple agencies, was undertaken.
- There was a high level of involvement by the Scottish Government.

### Priorities for Action

- Use the experience gained from the Games to inform resilience in Lanarkshire.

### References


**Alan Robertson**, Emergency Planning Officer
Email: alan.robertson@lanarkshire.scot.nhs.uk, Telephone: 01698 858225

**Dr S Josephine Pravinkumar**, Consultant in Public Health Medicine
Email: josephine.pravinkumar@lanarkshire.scot.nhs.uk, Telephone: 01698 858235
## 2.4 Expanded Immunisation Programme

### Introduction

In December 2012, the Scottish Government informed NHS boards of planned changes to the routine immunisation programmes from 2013/14. These changes included:

- introduction of the rotavirus vaccine
- introduction of the shingles vaccine
- changed timing of the third dose of meningitis C vaccine
- extension of the annual seasonal flu vaccination programme
- a catch-up campaign for MMR vaccination.

### Rotavirus

Rotavirus causes gastroenteritis in babies and young children, and can lead to dehydration and hospitalisation. Nearly all children will have at least one episode of rotavirus gastroenteritis before the age of five. Rotavirus immunisation commenced for all children born on or after 1 May 2013, administered orally at two and three months. By May 2014, the completed two-dose course uptake was 95.1% in NHS Lanarkshire compared to 93.0% nationally.

### Shingles

Shingles (herpes zoster) is a painful viral infection of the nerve cells and surrounding skin, caused by reactivation of a latent varicella zoster (chickenpox) infection. The shingles vaccine was introduced on 1 September 2013 for both 70- and 79-year-olds and is administered by GPs. By May 2014, the completed two-dose course uptake was 95.1% in NHS Lanarkshire compared to 93.0% nationally.

### Meningitis C (MenC)

The MenC vaccine at four months was discontinued on 1 June 2013 and was included in the teenage booster at year three in secondary schools from January 2014. A catch-up MenC programme will be introduced from August 2014 for first year UK and EU university students less than 25 years old.

### Childhood flu

Influenza (flu) is a highly infectious viral infection of the respiratory tract. The risk of serious illness from flu is higher in young children, older adults, those with underlying health conditions and pregnant women. The annual seasonal flu vaccination programme will be extended over the next few years to include all those aged 2–17 years, delivered through GP practices for pre-school children, and primary and secondary schools for school-aged children. The recommended vaccine is Fluenz® which is administered using a nasal spray. From 1 October 2013, extension of the seasonal flu programme was phased to include 2- and 3-year-old children, additional needs schools and 20% of primary schools (around 26,000 children). Uptake figures are encouraging: 50.2% (Scotland 50.6%) in 2- and 3-year-olds and 74.6% (Scotland 67.2%) in primary-school-aged children. In 2014/15, the flu vaccine will be offered to 2- to 5-year-olds and primary-school-aged children.

### MMR

A catch-up campaign for MMR vaccination was delivered in 2013 through GP practices for all children aged 10–17 years to reduce the risk of measles to Lanarkshire residents.
Key Points

• There has been a significant increase in the number and range of vaccines delivered through routine immunisation programmes.
• Uptake of new vaccines has been encouraging, particularly in relation to rotavirus, MenC and flu.
• Extension of seasonal flu vaccine to all children aged 2–17 years is a considerable operational challenge for the NHS workforce.

Priorities for Action

• In 2014/15, seasonal flu vaccination will be further phased to include all 2- to 5-year-olds and primary-school-aged children.
• Shingles vaccine will be offered to all 70-, 78- and 79-year-olds from 1 September 2014.
• Delivery of routine immunisation programmes will require continued effective partnership working between nursing staff, GPs, education departments and schools.

References


Dr David Cromie, Consultant in Public Health Medicine
Email: david.cromie@lanarkshire.scot.nhs.uk, Telephone: 01698 858117

Ashley Goodfellow, Public Health Specialist
Email: ashley.goodfellow@lanarkshire.scot.nhs.uk, Telephone: 01698 858222
Table 2.5.1
Screening programmes in Lanarkshire

<table>
<thead>
<tr>
<th>Screening programme</th>
<th>Target population and time frame</th>
<th>Denominator</th>
<th>Standard</th>
<th>Uptake</th>
<th>Outcomes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Universal newborn hearing screening</td>
<td>All newborn babies born to Lanarkshire residents, January 2012 to March 2013</td>
<td>7,827</td>
<td>NHS QIS 5(b): 95% of babies should have completed the hearing screen by 10 weeks</td>
<td>99%</td>
<td>16 hearing losses detected</td>
</tr>
<tr>
<td>Newborn bloodspot test screens for congenital hypothyroidism (CHT), phenylketonuria (PKU), cystic fibrosis (CF), medium-chain acyl-CoA dehydrogenase deficiency (MCADD) and sickle cell disorder (SCD)</td>
<td>All newborn babies born to Lanarkshire residents, April 2012 to March 2013</td>
<td>6,151</td>
<td>NHS QIS 4(h): 99.5% of infants have a screening result available or are recalled for repeat testing by 20 days of age</td>
<td>99.9%</td>
<td>PKU: 0 CHT: 0 CF: &lt;5* CF carrier: &lt;5* MCADD: 0 SCD: 0 SCD carrier: 5</td>
</tr>
<tr>
<td>Pre-school orthoptic vision screening (POVS)</td>
<td>All resident Lanarkshire pre-school children aged 4 years, August 2012 to July 2013</td>
<td>6,194</td>
<td>Hall 4: all children should be offered a pre-school orthoptic vision screen aged 4</td>
<td>90%</td>
<td>1,249 referred for assessment</td>
</tr>
<tr>
<td>Down’s syndrome screening in pregnancy</td>
<td>Lanarkshire women booking to deliver at Wishaw General Hospital, 2012/13</td>
<td>5,193</td>
<td>No specific uptake target. Screening offered to all women. Uptake dependent on personal views/beliefs.</td>
<td>59%</td>
<td>&lt;5* cases of Down’s syndrome diagnosed antenatally</td>
</tr>
<tr>
<td>Screening Program</td>
<td>Description</td>
<td>Uptake</td>
<td>Comments</td>
<td></td>
<td></td>
</tr>
<tr>
<td>--------------------------------------------------------</td>
<td>-----------------------------------------------------------------------------</td>
<td>--------</td>
<td>----------</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Fetal anomaly ultrasound scan</strong></td>
<td>Lanarkshire women booking to deliver at Wishaw General Hospital, 2012/13</td>
<td>5,193</td>
<td>99%</td>
<td>Around 60 anomalies reported antenatally</td>
<td></td>
</tr>
<tr>
<td><strong>Antenatal haemoglobinopathy screening</strong></td>
<td>Lanarkshire women booking to deliver at Wishaw General Hospital, 2012/13</td>
<td>5,193</td>
<td>99%</td>
<td>24 haemoglobinopathies detected</td>
<td></td>
</tr>
<tr>
<td><strong>Cervical screening</strong></td>
<td>All Lanarkshire female residents aged 20–60, to 31 March 2013</td>
<td>159,211</td>
<td>79.9%</td>
<td>44 cancers detected, 21 via screening programme</td>
<td></td>
</tr>
<tr>
<td><strong>Bowel screening</strong></td>
<td>All Lanarkshire female and male residents aged 50–74, to 31 March 2013</td>
<td>167,796</td>
<td>48.2%</td>
<td>119 cancers detected in second full round, August 2011–August 2013</td>
<td></td>
</tr>
<tr>
<td><strong>Breast screening</strong></td>
<td>All Lanarkshire female residents aged 50–70, 7th screening round, April 2010–March 2013</td>
<td>75,665</td>
<td>71%</td>
<td>445 cancers detected</td>
<td></td>
</tr>
</tbody>
</table>

* Actual numbers where there are less than five cases have been suppressed due to potential risk of disclosure.
Key Points

• It is interesting to note that uptake for fetal anomaly scanning is significantly higher than for Down’s syndrome screening (99% versus 59%). This may be because women are less likely to view anomaly scanning as a ‘test’ and may be keen for an opportunity to see their baby.
• Breast screening uptake meets the minimum target of 70% but not the desired target of 80%.
• Uptake of bowel screening is significantly lower than the target, and is the lowest in Scotland.

Priorities for Action

• Health promotion interventions are underway to improve breast screening uptake, including awareness-raising campaigns, teaser letters and a possible pilot of text message reminders.
• Significant resources are being deployed to address poor uptake of bowel screening, including locally trained bowel cancer champions.

References


Dr Tasmin Sommerfield, Consultant in Public Health Medicine Email: tasmin.sommerfield@lanarkshire.scot.nhs.uk, Telephone: 01698 858232

Dr Jennifer Darnborough, Consultant in Public Health Medicine Email: jennifer.darnborough@lanarkshire.scot.nhs.uk, Telephone: 01698 858232