Outbreak of *E. coli* O157 infection at Rose Lodge Nursery, Aboyne

May 2012

Report of the Incident Management Team

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**Date of first IMT meeting:** 23 May 2012  
**Date of second IMT meeting:** 25 May 2012  
**Date of final IMT meeting:** 06 June 2012

**Guidance used by IMT**
2. NHS Grampian (2008) *Outbreak Plan*  
4. Care Inspectorate (2012) *Guidance on the role of Care Inspectorate with regards to membership of an NHS lead Incident Management Team (IMT) during a Public Health Incident*
SUMMARY

Within a 72 hour period in May 2012, three infants were notified to the NHS Grampian Health Protection Team (HPT) as having *Escherichia coli* O157 infection, an outbreak had been declared, and an Incident Management Team (IMT) had been convened. The field investigation of the initial case led to NHS Grampian making contact with Rose Lodge Nursery in Aboyne. A joint visit by the HPT and Aberdeenshire Council Environmental Health led to advice being given regarding infection control arrangements within the nursery.

Following the first IMT meeting nineteen infants who attended Rose Lodge Nursery and twelve members of staff were formally excluded, along with six household contacts of cases, under the Public Health etc (Scotland) Act 2008. Stool samples were submitted from sixty three individuals to the Medical Microbiology Department at Aberdeen Royal Infirmary.

In total, four infants, one relative, and two members of staff were confirmed as having *E. coli* O157 infection. Three of the infants were hospitalised. Control measures implemented prior to and following the first IMT meeting proved effective. There were no subsequent cases of infection within the nursery, and the outbreak was declared over on 6 June 2012.

At the time of writing this report all apart from one case had recovered. One infant continued to remain an inpatient having been continuously in hospital for more than three months.

The IMT concluded the most likely explanation for the outbreak to be:

- the index case acquired the infection through either drinking contaminated water at home or direct contact with animal faeces in fields next to the family home
- the index case attended Rose Lodge Nursery while infected and excreting the *E. coli* O157 organism but asymptomatic
- the subsequent three infant and two staff infections were acquired via the faecal-oral route due to a failure of hand hygiene within the nursery
- the adult relative acquired the infection via the faecal-oral route due to a failure of hand hygiene at home
1. INTRODUCTION

The Medical Microbiology Department at Aberdeen Royal Infirmary notified NHS Grampian Health Protection Team (HPT) of a stool sample that had tested positive for *Escherichia coli* O157 at 16:55h on Sunday 20 May 2012. The sample had been obtained from a child aged less than two years, admitted to the medical ward, Royal Aberdeen Children’s Hospital (RACH), with a history of acute onset of bloody diarrhoea. The family were seen by a member of the HPT at RACH that evening. Possible sources of infection were identified as contact with farm animals and their environment, and a domestic private water supply. Infection control advice was given, and the child was formally excluded from all childcare.

During the hospital visit, nursing staff mentioned that another child aged less than two years was being assessed for possible haemolytic uraemic syndrome (HUS), and was believed to attend the same nursery. Initial details were noted, and RACH notified Grampian HPT of HUS associated with suspected *E coli O157* infection in this child at 09:00h on Monday 21 May 2012. The child had been transferred to Glasgow for specialist care. The Medical Microbiology Department at Aberdeen Royal Infirmary notified Grampian HPT on Monday 21 May 2012 that a stool sample from the second child had tested positive for *E coli O157*. Grampian HPT contacted Glasgow HPT at 11:30h on Monday 21 May 2012, who visited the child and mother in hospital. Possible sources of infection were identified as contact with farm animals and their environment, and a domestic private water supply.

Grampian HPT telephoned Rose Lodge Nursery on the morning of Monday 21 May 2012, and informed them that two children were ill and excluded from child care. The nursery’s infection control arrangements were discussed, and it was reported that no children had diarrhoea within the nursery in recent preceding weeks. The information obtained during this discussion led to an initial assessment by Grampian HPT that the risk of transmission within the nursery was low.

On the morning of Tuesday 22 May 2012, Grampian HPT again contacted Rose Lodge Nursery in order to monitor the situation. The HPT learned that a third child aged less than two years had been kept off that day due to loose stools, which the nursery reported the parents had attributed to teething. In the late afternoon the third child’s father contacted Grampian HPT and reported that symptoms had begun on the night of Thursday 17 May 2012. A full enteric surveillance form was completed. A stool sample had already been submitted via the GP. The only apparent source of infection was contact with the index case at Rose Lodge Nursery. The risk of transmission having occurred within the nursery was again reassessed, and was now considered to be a significant possibility. An outbreak of *E coli O157* was declared on the evening of Tuesday 22 May 2012. A joint visit was made by Grampian HPT and Aberdeenshire Council Environmental Health to Rose Lodge Nursery on the morning of Wednesday 23 May 2012. The incident management team (IMT) convened for its first meeting on the afternoon of Wednesday 23 May 2012. By this time the Medical Microbiology Department at Aberdeen Royal Infirmary had notified Grampian HPT that the stool sample submitted from the third child had tested positive for *E coli O157*. 
2. BACKGROUND

2.1 Escherichia coli (E. coli) O157

E coli O157 is a gram negative, rod shaped bacterium that can be found in the faeces of ruminant animals such as cattle and sheep. Usually harmless to animals, it can cause serious and potentially fatal infection in humans. Consumption of food or drink that has become contaminated with infected faeces is the usual route of infection. For example, people can become infected when they eat without washing their hands, when their hands have been contaminated by contact with farm animals or the environment the animals live in (e.g. picnic in a field used for cattle). Private water supplies are also vulnerable to becoming contaminated, and drinking contaminated water is another common way in which people become infected. The incubation period is usually three to four days (but can range from one to fourteen). Clinical features range from asymptomatic infection, through mild diarrhoea, to bloody diarrhoea and haemorrhagic colitis. Treatment is supportive, as E coli O157 infection is usually self-limiting. Antibiotics and anti-motility drugs increase the risk of serious complications, which include HUS and thrombotic thrombocytopenic purpura (TTP).

In the United Kingdom, Scotland traditionally has the highest annual incidence rate of E coli O157 infections. In Scotland, Grampian traditionally has one of the highest annual incident rates of E coli O157, with around 11 cases per 100,000 population diagnosed annually. The majority (>80%) of infections in Scotland are believed to have been acquired within Scotland.

The Scottish E coli O157/VTEC Reference Laboratory (SERL) identified fourteen separate phage types of E coli O157 during 2011. Around 70% of E coli O157 infections in Scotland involve three phage types (PT8, PT21/28, PT32). The vast majority of E coli O157 infections in Scotland are verotoxigenic.

2.2 Description of the setting

Aboyne is a village in rural Aberdeenshire, with a population of around two thousand people. The surrounding countryside is widely used for farming, including animal husbandry. Local households commonly have private water supplies. At the time of the HPT visit on 23 May 2012, Rose Lodge Nursery had thirty-five children registered. It operated three specific care areas, segregated by age:

- Children younger than two were cared for in the yellow room (“the baby room”). The room had space for twelve children per session. The baby room had a pick up point separate to the remainder of the nursery.
- Children aged between two and three were cared for in the blue room. The room had space for ten children per session.
- Children aged between three and five were cared for in the green room. The room had space for eighteen children per session.

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3. DESCRIPTIVE EPIDEMIOLOGY

3.1 Case definitions

The final case definitions in the outbreak were:

**Suspected case**  An individual with gastrointestinal symptoms suggestive of *E coli* O157, who has an epidemiological link to Rose Lodge nursery since 10 May 2012

**Probable case**  An individual with gastrointestinal symptoms from whose faeces *E coli* O157 has been identified by the Foresterhill microbiology lab, who has an epidemiological link to Rose Lodge nursery since 10 May 2012

**Confirmed case**  An individual with gastrointestinal symptoms from whose faeces *E coli* O157 has been identified by Scottish *E coli* O157/VTEC Reference Laboratory, who has an epidemiological link to Rose Lodge nursery since 10 May 2012

3.2 Description of initial cases

The initial notification of *E coli* O157 was from the Medical Microbiology Department at Aberdeen Royal Infirmary to the Grampian HPT on Sunday 20 May 2012, in a hospitalised child aged less than two years who had been symptomatic since Friday 18 May 2012. Possible sources of infection were (1) contact with an environment used by horses and sheep; (2) a private water supply at grandparents’ home; (3) known contact with the index case (below) in Rose Lodge Nursery on Tuesday 15 May 2012. When cases were subsequently classified by date of onset the child became ‘case 3’.

The second notification of *E coli* O157 was from both Royal Aberdeen Children’s Hospital (RACH) and from the Medical Microbiology Department at Aberdeen Royal Infirmary to Grampian HPT on Monday 21 May 2012. The sample was from a child aged less than two years who had been symptomatic since the evening of Tuesday 15 May 2012. Possible sources of infection were (1) contact with fields used to house sheep adjacent to the family home; (2) a private water supply at home. When cases were subsequently classified by date of onset the child became the index case (‘case 1’). The child also tested positive for cryptosporidium on a sample dated 02 June 2012. A symptomatic sibling subsequently tested positive for *Campylobacter*.

The third notification of *E coli* O157 was from the Medical Microbiology Department at Aberdeen Royal Infirmary to Grampian HPT at 12:20h on Wednesday 23 May 2012. The child also tested positive for norovirus. The sample was from a child aged less than two years who had been symptomatic since Thursday 17 May 2012. The only apparent source of infection was contact with the index case at Rose Lodge Nursery on Tuesday 15 May 2012. When cases were subsequently classified by date of onset the child became ‘case 2’.
3. DESCRIPTIVE EPIDEMIOLOGY

Telephone calls made by Grampian HPT to the parents of 19 children and to 12 members of staff on Wednesday 23 May 2012 (see section 4.2.3.2) identified an additional four children with diarrhoeal symptoms. The Medical Microbiology Department at Aberdeen Royal Infirmary notified Grampian HPT that one of the symptomatic children had tested positive for *E coli O157*, on Friday 25 May 2012. The other symptomatic children had negative results. The positive sample was from a child aged less than two years of age who had been symptomatic since Friday 18 May 2012. The only apparent source of infection was contact with the index case at Rose Lodge Nursery on Tuesday 15 May 2012. When cases were subsequently classified by date of onset the child became ‘case 4’.

The Medical Microbiology Department at Aberdeen Royal Infirmary notified Grampian HPT of a positive *E coli O157* result for a member of Rose Lodge Nursery staff on Friday 25 May 2012 (‘case 5’). Symptoms had started on Wednesday 23 May 2012. The only apparent source of infection was employment in the baby room at Rose Lodge Nursery since Thursday 10 May 2012.

Ayrshire & Arran HPT informed Grampian HPT on Friday 23 May 2012 that a child’s relative had been notified as being positive for *E coli O157* (‘case 6’). This relative had been identified as a household contact by Grampian HPT, as they had been living with the child and family while the child was symptomatic.

The Medical Microbiology Department at Aberdeen Royal Infirmary notified Grampian HPT of a positive *E coli O157* result for a second member of Rose Lodge Nursery staff on Monday 28 May 2012 (‘case 7’). This staff member was asymptomatic. The only risk factor was employment in the baby room at Rose Lodge Nursery since Thursday 10 May 2012.

In addition, three adults whose homes were on the same private water supply as the index case, and who contacted the Grampian HPT because they were suffering from diarrhoea, submitted stool samples that produced a negative result.

In summary, the index case became symptomatic on Tuesday 15 May 2012. Another three children attending the nursery became symptomatic within three days, one staff member became symptomatic within eight days, and one asymptomatic staff member was detected by microbiological testing (figure 1 and table 1). In addition, an adult relative was infected following household contact with one of the infected children.
3. DESCRIPTIVE EPIDEMIOLOGY

**Figure 1: Epidemic curve of confirmed cases**

![Epidemic curve of confirmed cases](image)

**Table 1: Details of confirmed cases of E coli O157**

<table>
<thead>
<tr>
<th>Case</th>
<th>Age</th>
<th>Onset</th>
<th>Notified</th>
<th>Known exposures</th>
<th>Clinical</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>&lt;2 years</td>
<td>15 May</td>
<td>21 May</td>
<td>Contact with farm animals and their environment; private water supply</td>
<td>Hospitalised; also cryptosporidium positive 02 June</td>
</tr>
<tr>
<td>2</td>
<td>&lt;2 years</td>
<td>17 May</td>
<td>23 May</td>
<td>Contact with index case in baby room</td>
<td>Also norovirus positive 22 May</td>
</tr>
<tr>
<td>3</td>
<td>&lt;2 years</td>
<td>18 May</td>
<td>20 May</td>
<td>Contact with index case in baby room</td>
<td>Hospitalised</td>
</tr>
<tr>
<td>4</td>
<td>&lt;2 years</td>
<td>18 May</td>
<td>23 May</td>
<td>Contact with index case in baby room</td>
<td>Hospitalised</td>
</tr>
<tr>
<td>5</td>
<td>adult</td>
<td>23 May</td>
<td>25 May</td>
<td>Contact with index case in baby room</td>
<td></td>
</tr>
<tr>
<td>6</td>
<td>adult</td>
<td>n/a</td>
<td>25 May</td>
<td>Household contact of child case</td>
<td></td>
</tr>
<tr>
<td>7</td>
<td>adult</td>
<td>n/a</td>
<td>28 May</td>
<td>Contact with index case in baby room</td>
<td>Asymptomatic</td>
</tr>
</tbody>
</table>
3. DESCRIPTIVE EPIDEMIOLOGY

Contact between cases within Rose Lodge Nursery since 10 May 2012 was mapped onto a Gantt chart (figure 2). The only time all four child cases were together was on Tuesday 15 May 2012. No child attended the nursery with symptoms of diarrhoea. The two adult cases were also in the Rose Lodge Nursery baby room throughout this period.

![Figure 2: Gantt chart of contact within Rose Lodge Nursery](image)

3.3 Hypothesis generation

The following hypotheses were considered:

1. Coincidence

2. A point source outbreak through a shared exposure of all cases in the Rose Lodge Nursery baby room (e.g. contaminated mud on parents’ shoes tracked onto the nursery floor; food-borne exposure)

3. A propagated outbreak, through person-to-person spread.
4. INVESTIGATIONS, RESULTS, AND CONTROL MEASURES

The timeline of notifications, investigations, and control measures is given in appendix 1.

4.1 Private water supplies

4.1.1 Case 3 water supply

Case 3 regularly drank water from a private water supply at a family member’s home. No other household was supplied by the same source. The family were confident that they had a well-maintained treatment system. Following initial notification of the case the household were verbally advised to boil their water by Environmental Health, and the private water supply was assessed for risk (from bacteriological contamination, chemical contamination, etc.) using the protocol in the Private Water Supplies Technical Manual (June 2006)\(^5\). The sample produced a negative microbiological result, and the household was advised of this result.

4.1.2 Case 1 water supply

Case 1 regularly drank water from a private water supply at the family home. Following initial notification of the case, all households known to be on the supply were immediately advised to boil their water by Environmental Health. The private water supply was assessed for risk (from bacteriological contamination, chemical contamination, etc.) using the protocol in the Private Water Supplies Technical Manual (June 2006)\(^5\). The detection of *E. coli* and coliforms provided evidence of faecal contamination of the family’s water supply, although *E. coli O157* was not detected in the samples taken.

Certain shortcomings were identified in the supply infrastructure, including the source collection, the distribution pipe work, and reservoirs. A letter dated, 22 June 2012 was issued jointly by Aberdeenshire Council Environmental Health and NHS Grampian to advise users of the current situation. Although there is intermittent chlorination of the supply, the bacteriological quality has been shown to be unreliable and advice to consumers to boil their water remains in place. The risk assessment is currently being finalised and it has thus far identified three significant problems being, the lack of programmed management and maintenance, the need for major improvements to the sources, tanks and other supply infrastructure, and the lack of bacteriological treatment.

The consumers of the water were advised to get together to discuss and agree the way forward. A meeting took place on 25 July 2012. The meeting was attended by a majority of users of the supply, a specialist contractor providing advice to the estate and representatives from Aberdeenshire Council Environmental Health and NHS Grampian. Following the meeting proposals to significantly improve the supply have been produced. Private water supply grants may be available, but only for a comprehensive improvement. No grant will be available for providing a direct

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4. INVESTIGATIONS, RESULTS, AND CONTROL MEASURES

connection to the mains, nor will one be available for a piecemeal solution applicable
to only part of the supply. If agreement between the users cannot be reached
individual users may wish to install ultraviolet treatment to their houses and, in
these circumstances, Aberdeenshire Council Environmental Health will take samples
to verify the effectiveness of any installed treatment.

4.1.3 Control measures in relation to private water supplies

Control measures applied in relation to the private water supplies are given in table 2.

<table>
<thead>
<tr>
<th>Exposure</th>
<th>Case</th>
<th>Control measure</th>
<th>Control measure applied to</th>
</tr>
</thead>
<tbody>
<tr>
<td>Private water supply</td>
<td>Case number 3</td>
<td>Advice to boil water and microbiological sampling</td>
<td>Sole property on water supply</td>
</tr>
<tr>
<td></td>
<td>Case number 1</td>
<td>Boil notice and microbiological sampling; advice regarding upgrading of supply</td>
<td>All properties on same water supply</td>
</tr>
</tbody>
</table>

4.2 Rose Lodge Nursery

4.2.1 Care Inspectorate

Grampian HPT requested information about the most recent inspection report for
Rose Lodge Nursery from the Care Inspectorate on the morning of Wednesday 23
May 2012. The Care Inspectorate was informed of the outbreak by Grampian HPT on
Thursday 24 May 2012. An electronic notification of the outbreak was received by
the Care Inspectorate from Rose Lodge Nursery on Thursday 24 May 2012.
Representatives of the Care Inspectorate attended the second IMT meeting on
Friday 25 May 2012.

The findings of the joint visit were discussed by Grampian HPT with the Care
Inspectorate on Thursday 24 May 2012.

4.2.2 Joint visit to Rose Lodge Nursery

A joint visit by NHS Grampian HPT and Aberdeenshire Council Environmental Health
was made on Wednesday 23 May 2012.

4.2.2.1 Health Protection Team Report

Infection control arrangements for the entire nursery were reviewed by Grampian
HPT on the morning of Wednesday 23 May 2012. Verbal advice was provided by
4. INVESTIGATIONS, RESULTS, AND CONTROL MEASURES

Grampian HPT to the nursery at the time of the visit. This was confirmed in a written report that was subsequently provided to the nursery, and copied to the Care Inspectorate (appendix 2).

The nursery was commended on a number of issues, including:

- written nappy change record keeping, which confirmed that there had been no children in the nursery with symptoms
- the routine use of gloves and aprons by staff during nappy changing
- cleaning schedules, signed by staff on completion
- the provision of “spillage boxes” in each room
- staff awareness that they should remain off work when unwell until 48 hours after their symptoms have settled

The nursery was advised:

- to stop the use of a communal bowl for handwashing in the baby room
- that the handwashing sink in the nappy changing area might have water too hot for effective staff handwashing
- of the potential for contamination of the nursery floor from parents’ shoes

4.2.2.2 Environmental Health Report

The possibility of the infection being food borne was considered when inspecting the food handling operation in the premises and particularly in the kitchen. Compliance with the Food Hygiene (Scotland) Regulations 2006 and EC Regulation 852/2004, on the hygiene of foodstuffs, was measured against the Food Standards Agency publication, “Control of Cross Contamination for Food Business Operators and Enforcement Authorities” (15 February 2011)⁶. It was established that food produced in the kitchen is consumed throughout the nursery; there is no special menu for the occupants of the baby room and all children within the nursery share the same menu. There was no history of children within the baby room having consumed food items not distributed to other parts of the nursery. For this reason it was considered unlikely that food comprised a vehicle for the spread of the infection.

The previous food hygiene inspection had been carried out 2 June 2011 at which time the food business operator was deemed to comply with the relevant food hygiene legislation. The standard of hygiene encountered on 23 May 2012 within the kitchen was considered to be good. A food safety management system based on HACCP (hazard analysis and critical control point) principles is used. The Food Business Operator could show that the system was being utilised on 23 May 2012 and that it had been utilised prior to, and at the time of, the incident.

⁶ http://www.food.gov.uk/multimedia/pdfs/ecoli-control-cross-contam.pdf
4. INVESTIGATIONS, RESULTS, AND CONTROL MEASURES

4.2.3 Control measures in relation to Rose Lodge Nursery

Control measures implemented in relation to Rose Lodge Nursery are given in table 3.

Table 3: Control measures in relation to Rose Lodge Nursery

- Infection control advice was provided to Rose Lodge Nursery
- Infection control advice was provided to households of cases
- All cases were formally excluded from all childcare facilities until two negative stool samples received
- All child contacts of cases were excluded from all childcare facilities until two negative stool samples received
- All nursery staff working in the Baby Room were excluded from all childcare work until two negative stool samples received
- All household contacts of cases, who either attended childcare facilities or worked as food-handlers or worked in health or social care settings, were excluded until two negative stool samples received

4.2.3.1 Infection control advice

Rose Lodge Nursery was advised not to use communal bowls for hand washing. Nursery staff and all parents of excluded children were given advice about the potential sources, routes of transmission, and prevention of *E coli O157* infection.

4.2.3.2 Formal exclusions under the Public Health Etc (Scotland) Act 2008

Evidence considered at the IMT meeting on Wednesday 23 May 2012 strongly suggested that transmission of infection had taken place in Rose Lodge Nursery and was confined to the baby room. The decision was taken to formally exclude all children and staff who had been in the baby room since 10 May 2012 from all childcare facilities. All excluded children and staff were required to provide two stool samples, taken 24 hours apart, for microbiological testing. Exclusion would be lifted on receipt of two negative samples.

Nineteen children who attended the Rose Lodge Nursery baby room were excluded from all childcare facilities, and six further household contacts of suspected, probable or confirmed cases were excluded from work or school, on 23 May 2012. Twelve members of the Rose Lodge Nursery staff who had worked in the baby room since 10 May 2012 were excluded from working in childcare. Two members of staff tested positive for *E coli O157*, and one of their household contacts was excluded from work.
4. INVESTIGATIONS, RESULTS, AND CONTROL MEASURES

4.3 Human microbiology results

In total, stool samples were submitted from sixty three individuals, comprising twenty two children (including three cases tested in hospital), twelve members of nursery staff, and twenty-nine contacts of suspected, probable, or confirmed cases.

All samples that tested positive for *E.coli O157* at the Medical Microbiology Department at Aberdeen Royal Infirmary were sent to the Scottish *E. coli O157/VTEC Reference Laboratory* (SERL) in Edinburgh. SERL reported the results of phage typing and pulsed field gel electrophoresis (PFGE) for the sample from each confirmed case (table 4).

<table>
<thead>
<tr>
<th>Case</th>
<th>Phage Type / PFGE results</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>PT4 VT1- VT2+</td>
</tr>
<tr>
<td>2</td>
<td>PT4 VT1- VT2+</td>
</tr>
<tr>
<td>3</td>
<td>PT4 VT1- VT2+</td>
</tr>
<tr>
<td>4</td>
<td>PT4 VT1- VT2+</td>
</tr>
<tr>
<td>5</td>
<td>PT4 VT1- VT2+</td>
</tr>
<tr>
<td>6</td>
<td>PT4 VT1- VT2+</td>
</tr>
<tr>
<td>7</td>
<td>PT4 VT1- VT2+</td>
</tr>
</tbody>
</table>

All seven confirmed cases were infected with a relatively rare, phage type of *E.coli O157*. Phage type 4 accounted for less than 3% of culture positive *E.coli O157* cases reported to Health Protection Scotland Enhanced Surveillance between 1999 and 2011. The isolates from all seven cases were reported as indistinguishable by PFGE typing. This supported the hypothesis that the cases were linked.
5. COMMUNICATIONS

5.1 Private water supply communications

5.1.1 Residents

The private water supply to which case 3 was exposed was a single property supply. Communication between Aberdeenshire Council Environmental Health and the occupiers was verbal.

The private water supply to which case 1 was exposed supplied eighteen houses and two steadings. Aberdeenshire Council Environmental Health posted a written boil notice on Monday 21 May 2012. The results of initial sampling and related advice were communicated in a letter from Aberdeenshire Council Environmental Health on Friday 25 May 2012 (appendix 2).

A second joint letter from Aberdeenshire Council Environmental Health and NHS Grampian HPT was sent on Friday 22 June 2012 (appendix 3).

5.2 Rose Lodge Nursery communications

5.2.1 Parents of excluded children

All parents of excluded children received advice by telephone from Grampian HPT on the afternoon or evening of Wednesday 23 May 2012. A letter to parents confirming the telephone advice was posted on 23 May 2012 (appendix 4). A follow-up letter advising of the results of the investigation was sent on Monday 18 June 2012 (appendix 5). Parents were advised verbally and in writing by Grampian HPT about stool sample results and the lifting of formal exclusions.

5.2.2 Professionals

An initial alert letter was sent to General Practitioners and A&E departments on 23 May 2012 (appendix 6). A follow-up letter advising the results of the investigation was sent to local GPs on Monday 18 June 2012 (appendix 7).

5.2.3 Scottish Government Health Department

A briefing was given to the CMO office on Wednesday 23 May 2012 prior to the IMT meeting. This was subsequently followed by an email, sent later the same day, confirming the outcome of the IMT meeting.
5. COMMUNICATIONS

5.2.4 Elected Members Aberdeenshire Council

NHS Grampian Corporate Communications: (a) briefed the Chairman of NHS Grampian, who is also an elected member of Aberdeenshire Council, by email, on Wednesday 23 May 2012; (b) discussed the issue at a regular meeting with Grampian MPs and MSPs on Friday 1 June 2012.

5.2.5 Public and the media

Media requests were handled by NHS Grampian Corporate Communications Team. Three media statements were used during the outbreak (appendix 9).

5.2.6 Nursery Management

A post-investigation visit was made on Friday 15 June 2012 to share the investigation conclusions with nursery management and staff.
6. CONCLUSIONS

- The IMT concluded that coincidence was a highly unlikely explanation for the linked cases, given the results from SERL.
- The IMT concluded that the sequential timing of onset of symptoms (as seen in the Gantt chart in figure 2) made a point source outbreak highly unlikely.
  - Case 1 became symptomatic on Tuesday 15 May 2012. A nursery source of exposure on Monday 14 May 2012 is unlikely in relation to the expected incubation period. A point source exposure in the nursery setting would necessarily have had to have occurred during the previous week. However this would result in the other child cases having incubation periods of 7 or 8 days, and the symptomatic member of staff having an incubation period of 11 days, all of which are substantially longer than the average incubation period normally observed (though not impossible).
  - The cases had no known contact with each other outside the nursery, making a point source outwith the nursery setting extremely unlikely in view of the absence of other cases in the community.
- The IMT concluded that a food-borne outbreak was a highly unlikely explanation.
  - Food hygiene practice within the nursery was, on inspection, considered to be of a good standard.
  - All food in the nursery was prepared in-house, and was served throughout the nursery. A food-borne outbreak would therefore be expected to result in cases throughout the nursery.
- The IMT concluded that this was a propagated outbreak, through person-to-person spread. This necessarily requires there to have been a failure of infection control within the nursery baby room associated with the changing of faecally contaminated nappies.
  - The IMT concludes that case 1 was probably infected at home, through contact with animal faeces either in the surrounding environment or contaminating the domestic water supply.
  - The IMT concludes that cases 2,3,4,5 and 7 were probably infected through faecal-oral spread, most likely due to a failure of hand hygiene within Rose Lodge Nursery baby room.
  - The IMT concludes that case 6 was probably infected through faecal-oral spread following household contact with a child case, most likely due to a failure of hand hygiene within the household.
7. LESSONS LEARNED

Debriefing questionnaires were sent out to all IMT participants and responses were received from four organisations.

Lessons for Scottish Government

- Section 57 of the Public Health etc. (Scotland) Act 2008 states, “a health board may compensate any person who is subject to an exclusion order...and who incurs any loss caused by complying with the order”. However, this “does not apply where the loss is attributable to the fault of the person claiming the loss”.
- The IMT attributed fault to the nursery, not to parents. The nursery continued to require parents to pay nursery fees during exclusion. Accordingly, NHS Grampian reimbursed the cost of nursery fees to parents. By reimbursing the cost of nursery fees to parents NHS Grampian effectively protected Rose Lodge Nursery from financial loss. In this situation, current legislation resulted in the NHS effectively providing financial protection to the party at fault.

Lessons for Health Boards

- Local Consultant Microbiological input was needed at each of the IMT meetings. This would have facilitated communication and understanding of local protocols and procedures between investigating laboratories.

Lessons for communications

- It can prove difficult for Environmental Health to quickly and accurately identify all known users of a private water supply, due to the absence of a mandatory registration scheme. Obtaining telephone numbers to provide urgent verbal advice to boil water for drinking and food preparation can also be difficult.
- The initial HPT letter to parents at the nursery should have stated E coli O157 specifically. This would have prevented the impression voiced by a small number of parents that information was being withheld.
- An individual HPT letter to parents should have been given to parents in other parts of the nursery, to reassure the “worried well”.
- The HPT letter sent to parents containing the conclusions of the IMT was felt to be positive in that it demonstrated openness and transparency, and did not produce any adverse consequences.
- The visit to the nursery once the outbreak was declared over was felt to be positive, as it provided the opportunity for discussion and questioning to assist Rose Lodge Nursery to fully understand the basis for the conclusions of the outbreak investigation.

Lessons for future investigations

- The index case for the outbreak appeared infectious to others prior to the development of symptoms. What does this mean for the health protection response to a future single case of E coli O157 infection in a child who attends nursery?
8. RECOMMENDATIONS AND ACTION PLAN

1. NHS Grampian Health Board should request Health Protection Scotland to produce national guidance on asymptomatic infectivity or, where the evidence is not available to inform such guidance, research should be undertaken to attempt to describe:
   i. the risk of transmission of *E coli* O157 infection from an infected, asymptomatic person (differentiating between those who do develop subsequent symptoms, and those who do not develop subsequent symptoms)
   ii. whether the risk of transmission of *E coli* O157 infection from an infected, asymptomatic person is different between the period prior to the onset of symptoms and the period after symptoms have resolved but stool samples remain positive

2. NHS Grampian Health Board should request the Care Inspectorate to review the frequency and rigour of their arrangements to monitor infection control practice within nurseries, with particular emphasis on provision and procedures for staff and children's hand washing, and nappy changing facilities and practices.

3. NHS Grampian Health Board should request the Scottish Government’s National Care Standards Committee give additional guidance on infection prevention and control in the next revision of the *National Care Standards: early years and childcare up to the age of 16*. It would be particularly valuable for all nurseries to provide hand wash sinks with running hot and cold water for staff and children in all playrooms, including rooms used for care of babies.

4. NHS Grampian Health Board should request the Scottish Government create a mandatory registration scheme for properties that are supplied by a private water supply, to aid rapid investigation and provision of advice subsequent to a case of *E coli* O157 infection.

5. NHS Grampian Health Board should request the Scottish Government require landlords who rent out domestic properties served by a private water supply to inform their tenant(s) of this fact in their lease, and should provide information on the implications for health.

6. NHS Grampian Health Board should request the Scottish Government provide guidance on the NHS reimbursement of losses where this effectively reimburses those responsible for their own loss.
APPENDIX 1: Timeline of notifications, investigations, and control measures

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**Morning**
- 1
- 7

**Afternoon**
- 2
- 5
- 6 (A&A HPT)

**Evening**
- IMT #1
- IMT #2
- IMT #3 (outbreak declared over)

**KEY**
- Initial identification of suspected case (subsequently confirmed, numbered by date of symptom onset)
- Notification of probable case (subsequently confirmed, numbered by date of symptom onset)
- Telephone call to Rose Lodge Nursery (to review infection control protocols and procedures; to check for other cases)
- HPT & EHO joint visit to Rose Lodge Nursery
- All baby room contacts excluded
- All baby room contact exclusions lifted by this date

Two cases remain excluded
APPENDIX 2: Grampian HPT written report provided to Rose Lodge Nursery

Date 31st May 2012

As you are aware, I visited the nursery on the 23rd May 2012 with my colleague, [Redacted] in order to make ourselves aware of the layout and current infection control practice in the nursery. [Redacted] from Aberdeenshire Council undertook a kitchen and waste inspection at the same time. These visits were prompted following three reports of *E coli O157* in children attending the Baby Room at the nursery.

Overall, we found the nursery to be clean, bright and cheerful, if a little cramped with little dedicated storage space. The staff were cheerful and welcoming and the children appeared happy.

Reception Area
Appears clean and bright although crowded. The children in both the Green (3-5 years) and the Blue Rooms (2-3 years) hang their coats in this area, and have access to handwashing facilities in the toilets opposite.

Green Room
Thirty-five children from 3-5 years are registered to attend with a maximum of 18 children at any one time. The room is quite large but again, storage appears difficult. The room looks clean. There are easy to clean vinyl table covers on all tables. There is a sink in the room but it is at adult height, however the children are close to the toilets for hand washing.

Toilets
There are three toilets and hand basins at a low height suitable for the children. Liquid soap and paper towels are freely available and there is a bin for disposal, however the bin does not have a lid and I advised this was required. The toilets looked clean but there were cleaning products on the half wall between the toilets and the storage area that you walk past to enter the toilets. Cleaning products should be stored in a cupboard.

The storage area is packed with boxes of toys and puzzles, the vacuum cleaner and paper for crafts. I am concerned that this is not the most suitable place for storage, as there is no door on this storage area and the wall between it and the toilets does not go all the way up to the ceiling. However, I do recognise the limit of storage space and perhaps the Care Inspectorate will be able to advise you?

Blue Room
Ten children attend the Blue Room at any time and are between 2 and 3 years of age. This room is the smallest and also very tight for storage. The room looks clean and has a large sink area at adult height and a smaller handwashing sink, liquid soap, paper towels and a bin however, no lid on the bin. They do sometimes have a potty in the room if a child is potty training. Potties belong to the individual child – parents bring one in from home. Potties are washed after use; however, I did not clarify where they washed or the
APPENDIX 2: Grampian HPT written report provided to Rose Lodge Nursery

process. However, you should have a written process for potty cleaning including the use of protective clothing, they should not be washed in a sink also used for hand washing, a general-purpose detergent should be used and they should be dried thoroughly. Currently, there are no children using potties.

Yellow Room
Twelve children attend the baby room at any given session. Children are aged up to 2 years of age although at the time of the visit I did not see any very young infants, most appeared to be “toddling”.

This room looks clean, is the largest, and therefore appears less cluttered than the others do. The room is “L” shaped with a carpeted area at furthest end from doors used as a soft play area. The hard-floored area is spacious with the “eating area” to the right of the room. There is no sink of any kind in this room. Children had their hands washed from a bowl of soapy water using disposable wipes for each child. I advised that this was not acceptable practice. Hands should be washed under running water with liquid soap. Children who are too young to stand at a sink can have their hands washed for them using a wipe but not from a communal bowl. During my visit, the staff managed to set a step up at a sink beside the staff toilet to wash the children’s hands.

The nappy changing area is through an open doorway with a safety gate in it. The changing area has a shelf above it where all the nappies are neatly stored in size order. I advised the staff that the Care Inspectorate prefer the nappies to be stored in sealed boxes and agreed that this could be done.

The detergent/disinfectant (“Protect”) used for cleaning the changing mat between use is sitting on the surface beside the mat. No one seems clear what “Protect” actually is and it is decanted into spray bottles from a bulk buy. The bottle in the nappy changing area had no label on it saying what it was or when it had been reconstituted. I advised that decanting is not acceptable unless as part of a closed system. agreed that going back to individual spray bottles could be done with little problem.

The handwashing sink in the nappy changing area has a geyser; whilst I was there, I overheard someone washing her hands who clearly thought the water was too hot. This cannot promote effective hand washing and caused me concern that although staff are fully aware when to wash their hands they may not be washing them thoroughly enough to prevent the transmission of organisms.

The sleep area has four cots in it. The laundry is removed and washed after every child and the waterproof mattresses are cleaned with “Protect.” The staff toilet is off the sleep area and has a small hand washing basin with liquid soap and paper towels.
APPENDIX 2: Grampian HPT written report provided to Rose Lodge Nursery

There is a separate access for parents to collect their children directly from the baby room and parents picking up their children could potentially walk through the hard floor area to collect their child from the carpeted area. The potential is here for dirty shoes to be traile through the room and children’s hands to be contaminated from crawling on the floor.

I suggest parents do not come too far into the room for collection.

Summary

• Handwashing
Communal bowl must never be used as organisms from the hands of both staff and children will accumulate in the water which poses a risk of infection to all those using the bowl. A step was placed at a sink in order to allow the children to stand at a sink for hand washing during my visit and this practice needs to continue unless a handwashing sink at an appropriate height for the children can be installed in the room.

The older children wash their hands at the sinks in the toilets. This is mostly supervised by staff e.g. prior to meals, snacks and when coming in from playing outside. Some of the children wash their hands unsupervised after visiting the toilet. Hands are washed at appropriate times, e.g. after going to the toilet, before eating (meals and snacks), after coming from outside play, when visibly dirty. Flannels are not used for faces etc, disposable wipes are in use.

Alcohol hands rubs are present in the nursery but are only used by staff. I advised that these are not necessary, as thorough hand washing under running water using a liquid soap is preferable.

As mentioned, I am concerned that handwashing is not as thorough among staff as it could be, particularly in the nappy changing area where the water from the geyser appears to be too hot. However, during a phone call you assured me that the temperature on the geyser could be reduced to an appropriate level for handwashing. I would also remind you that sinks used for hand washing should not be used for cleaning toys, equipment etc.

• Nappy Changing
I was pleased that there is a written procedure for nappy changing and found the note kept describing nappy contents helpful! This further confirmed the reports that there were no children in the nursery with symptoms. Staff are using two gloves and an apron to change nappies and are washing their hands after cleaning the area and removal of PPE.

One further issue with the sink in the nappy changing area was that the paper towel dispenser was not readily available but I observed the staff using the disposable, absorbent roll for drying hands. I was also assured that a paper towel dispenser was to be installed in the room soon.
APPENDIX 2: Grampian HPT written report provided to Rose Lodge Nursery

I advised that the Care Inspectorate prefer the nappies to be kept in sealed containers and was informed that this would be done.

As previously mentioned – the changing mat is cleaned with reconstituted “Protect” but it was agreed that decanting would cease.

• **Toilets**
  I felt that they were satisfactory other than the cleaning solutions being stored on the partial wall.

• **Cleaning Procedures**
  There are up to date cleaning schedules in place, which are signed by staff when completed. Toys are all cleaned at the end of each day. The nursery is visibly clean and smells fresh. An area of good practice is the “spillage boxes” in each room containing PPE, a bowl, bleach etc. Advised that all new equipment and toys should be purchased with knowledge of how they can be decontaminated.

• **Cleaning equipment**
  Staff appear clear about colour coding of mops although I got the impression there was less clarity about how the mop heads should be dealt with and stored. I advised that mops should be stored as dry as possible. Mop heads should be laundered if possible at the end of each day.
  I was concerned regarding adherence to COSHH, as there were unlabelled bottles of “Protect” in the nappy and toilet areas.

• **Water/Sand Play**
  I was pleased that staff had taken the initiative early on in this incident to stop sand and water play and the use of play dough whilst they thought there might be an issue. Sand is normally changed weekly and is covered when not in use. The water tank for play is drained, cleaned and dried after every use.

• **Waste**
  I had agreed with XXXXXXXX that he would look at waste and the kitchen; however, I did notice that very few of the bins have lids and this is a possible source of cross infection. I advised that all bins should have lids on them and preferably be foot operated.

• **Food**
  No foods are brought in from home. XXXXXXXX inspected the kitchen at the same time as my visit and had no concerns regarding kitchen practice.
  Nursery staff make up bottles of formula milk as required and in line with the policy, bottles are washed with general-purpose detergent and a bottlebrush, rinsed and placed in a microwavable steriliser. I was also advised that all the water consumed in the baby room is boiled.
APPENDIX 2: Grampian HPT written report provided to Rose Lodge Nursery

• **Tooth brushing**
Nursery staff are advised by the Childsmile team that if there is an outbreak in a nursery setting they should stop tooth brushing. However, under usual circumstances each child's toothbrush is stored as dry as possible in an individual, named, sealed container.

• **Sleep area**
As mentioned, bed linen is laundered after each individual use so no need to dedicate linen to individual children. The sleep area also stores buggies but does not seem to be an issue for staff. Mattress covers look new, clean and intact. Mattresses are all dated when they come into use.

• **Laundry**
Laundry is done upstairs away from the nursery setting. Soiled clothing is dealt with appropriately by sending home in a sealed bag with parents.

• **Storage**
Storage areas are clean although due to lack of space appear a bit cluttered.

• **Outdoor Environment**
Gorgeous. Well maintained and enclosed with appropriate fencing. Outdoors toys are easily cleaned.

• **Staff and Illness Policy**
Staff are aware that if they suffer a GI illness they must remain off work until 48 hours after their symptoms have settled. There have been no reports of illness among staff since the beginning of May and that person took the requisite time off.

I hope this information is of assistance to you and if you have any further queries, please do not hesitate to contact me.

Yours sincerely

[Name]
Health Protection Nurse Specialist

cc. [Name], Nursery Manager
    [Name], Care Inspectorate
    [Name], Care Inspectorate
25 May 2012

The Occupier

The Private Water Supplies (Scotland) Regulations 2006
Private Water Supply XXXXX: XXXXXX

I refer to the above supply and sample taken on 22 May 2012.

Our investigation has identified that the water is at risk from bacteriological contamination. You have already been advised to boil water for the following purposes:

- For drinking (including brushing teeth)
- For preparing food which will be eaten uncooked (e.g. salads and fruit)
- For making ice

and you should continue to do so.

If you have suffered any form of stomach upset within the last 14 days I would ask you to contact NHS Grampian’s Public Health Team on 01224 558520. The team is gathering information regarding these matters.

Should you wish to discuss the contents of this letter, please do not hesitate to contact me at this office.

Yours sincerely

[Name]
Principal Environmental Health Officer
To all supply users

The Private Water Supplies (Scotland) Regulations 2006
Private Water Supply XXXXXX: XXXXXX

Investigations into possible E.coli contamination

This letter has been written on behalf of both Aberdeenshire Council and NHS Grampian to advise you of the up to date position with regard to your water supply and to invite all users on the supply to a meeting to discuss recent investigations.

E.coli bacteria were found in samples taken from your private water supply at the end of May following its identification as a possible source of E.coli O157 infection. Although the infection has so far not been conclusively linked to the supply, investigations are still on-going and NHS Grampian Health Protection Team strongly advises that this water is not fit for human consumption unless it has been boiled.

By now all supply users should have received guidance to boil their water before use for food preparation etc. and you are advised to continue to do so until the supply can be cleared for use (full details are contained in the enclosed leaflet). This clearance will be provided in writing by the Council.

If you already have some form of bacteriological treatment such as a UV steriliser on your domestic system and are relying on this for protection, please be aware that such systems need regular and appropriate maintenance. UV bulbs require to be replaced on at least a yearly basis, and the internal glass bulb housing should also be cleaned annually. If such work has not been carried out then the unit is unlikely to be effective and again we would advise you to boil your water before use.

As there is no requirement to register the use of a private water supply, it took some time to identify all users of the supply in this case. The council is reliant on records of previous dealings with supply users, along with information from other users or, as in this case, the local land owners. A list of supply users has now been compiled and the addresses supplied are included at the end of this letter. If you know of other users not listed, please ask them to contact us with details and advise them of the content of this letter.

At the first indication of the presence of E.coli, XXXXXX XXXXXX staff took appropriate action to chlorinate the supply at the implicated source. Since then they have assisted council staff with their risk assessment of the supply and sought advice and assistance from a local contractor which specialises in works to private water supply systems. Further short term improvements to the system are also being implemented.
APPENDIX 4: Private water supply letter #2
Joint EHO/PHT letter to properties supplied sent 22 June 2012

The Risk Assessment has however identified a number of significant problems including:-

1) The lack of programmed management and maintenance of the supply.
2) The need for major improvements to the sources, tanks and other supply infrastructure.
3) The lack of bacteriological treatment to the supply.

It was also recognised that there were other possible improvement options available such as connecting to the public water mains or the provision of alternative sources of water. These may not be available to all users and a combination of different improvement schemes may be necessary to secure satisfactory water supplies for all the properties. Whichever improvement option is adopted, however, will result in significant expense in both the short and longer terms and it is strongly recommended that as a matter of urgency all the users and/or their agents should get together to discuss and agree the way forward.

With this in mind the Factor for [XXXXXXX] which owns the majority of land where the supply rises and through which the pipework passes has indicated a willingness to convene a meeting of all the owners of property on the supply and will contact you shortly with proposed arrangements.

Grants are available for the improvement of private water supplies (but not for connecting to the public mains) and details regarding any possible grant application can be found in the attached leaflet. It must be stressed however that the grants are available for a comprehensive improvement to the supply and whilst you may wish to install UV treatment as an envisaged immediate solution to the problem it can not be guaranteed that grant funding will be available for that course of action depending on the final improvement solution/s adopted for the supply.

As always NHS Grampian advises anyone with symptoms of diarrhoea and/or vomiting to contact their GP. A patient information leaflet on E.coli is enclosed with this letter.

If you require further information on any of the information covered in this letter then please use the appropriate contact details in the leaflets enclosed.

For more information on keeping your private water supply safe, visit www.aberdeenshire.gov.uk/environmental/water.asp.

Yours sincerely,
Dear Parent/Guardian

As you may be aware, there have recently been a small number of children affected with symptoms of vomiting and diarrhoea. I would like to reassure you that NHS Grampian in collaboration with Aberdeenshire Environmental Health Department are investigating these cases. We are working with nursery staff to ensure infection control practices in the nursery are as effective as possible.

It is important to remember that these symptoms are relatively common at this time of year and may be caused by a number of different types of viral and bacterial infections.

There are simple measures that can be taken to help prevent the spread of infection both at nursery and in the home which include:

- **If you or your child has diarrhoea and/or vomiting, please contact your GP for advice.**
- Encourage thorough handwashing particularly after visiting the toilet and before eating or preparing any food. Further information regarding handwashing can be found at [www.washyourhandsofthem.com](http://www.washyourhandsofthem.com);
- If you have any concerns regarding illness in yourself or your child, contact your GP;
- If symptoms persist for longer than 48 hours please contact your GP who will arrange for appropriate samples to be taken.

Thank you for your co-operation in this matter.

Yours sincerely

*Diana Webster*

**DR DIANA WEBSTER**
Consultant Public Health Medicine (CD/EH)
Dear Colleague

Three suspected cases of E coli O157 Infection in children attending Rose Lodge Nursery School in Aboyne

We are currently investigating 3 suspected cases of E coli O157 infection in children who attend the Rose Lodge Nursery School in Aboyne. We are providing advice to the parents of all children who attend this nursery and to the staff who work there. Please see the attached letter to parents.

Staff and children who have been assessed as contacts of the cases have been excluded from the nursery until they have submitted 2 stool samples that are negative for E coli O157. They have also been asked not to attend any similar facilities.

If you see any symptomatic cases possibly linked to these premises please contact Public Health. Please consult the duty paediatrician about the clinical management of any affected children. Please arrange for a faecal sample to be sent to Aberdeen Royal Infirmary Labs and mark it 'Rose Lodge'.

Please remember that bloody diarrhoea in a child, with no previously identified cause, should be regarded as a medical emergency. The child should be referred for urgent clinical assessment. The parents should not be advised "to go home and wait and see".

Please contact us if you have concerns on this matter from 9 am to 5 pm on 01224-558520, or out of hours through switchboard at Aberdeen Royal Infirmary 0845-456-6000, asking for the Public Health doctor on-call.

Thank you for your co-operation in this matter.

Yours sincerely

Diana Webster

DR DIANA WEBSTER
Consultant in Public Health Medicine (Health Protection)
APPENDIX 7: Rose Lodge Nursery parent letter #2
Second letter to parents from NHSG HPT

Distribution:
Parents/Guardians of Children
at Rose Lodge Nursery School

Date 18th June 2012
Enquiries to 01224 558520
Email: grampian.healthprotection@nhs.net

PRIVATE & CONFIDENTIAL

Dear Parent/Guardian

E coli O157 infection and Rose Lodge Nursery School

My purpose in writing is to provide you with information about the result of our investigation into the recent cases of E coli O157 infection which affected a small number of individuals attending Rose Lodge Nursery School, Aboyne. The investigation was undertaken jointly by the NHS Grampian Health Protection Team and Aberdeenshire Council Environmental Health Department.

A total of 6 individuals (4 children and 2 staff) attending the nursery ‘baby room’ caught the E coli O157 infection. Our investigation has shown the most probable course of events is that the infection was introduced into the nursery by a child. This child did not have any diarrhoeal symptoms whilst within the nursery. After going home at the end of one day, the child became obviously unwell during the course of the evening and did not attend the nursery again until better. However, it is possible this child was excreting E coli O157 bacteria in its faeces for a number of days before developing any symptoms. Our investigation has shown that E coli O157 bacteria infecting this child were transmitted to 5 other individuals attending the baby room within the nursery. The investigation team has concluded the most probable way this happened was that nursery staff failed to maintain an adequate standard of hand hygiene in the baby room.

The nursery management has cooperated fully with our investigation and made improvements in working practice in response to our advice. There have been no new cases of E coli O157 infection in those attending the nursery since control measures were put in place by the investigating team. A full report of the investigation of this outbreak of infection will be compiled over the next few weeks. Once complete, it will be accessible to the public on the NHS Grampian web site.

Yours sincerely

Diana Webster

DR DIANA WEBSTER
Consultant Public Health Medicine (CD/EH)
Dear Colleague

**Outbreak of E coli 0157 infection – Rose Lodge Nursery School, Aboyne**

Please find enclosed a copy of the letter which is being circulated today to the parents of children who attend Rose Lodge Nursery School, Aboyne.

This letter is for information only. Our investigation into the nursery is completed. There have been no new cases of E coli 0157 infection in those attending the nursery since infection control measures were put in place by the investigating team. The nursery has now resumed all usual activities.

Yours sincerely

*Diana Webster*

**DR DIANA WEBSTER**
Consultant Public Health Medicine (CD/EH)
APPENDIX 9: Media communications

- **Wednesday 23rd May 2012: media holding statement**

Three cases of suspected E.Coli infection attending a nursery

We are currently investigating three suspected cases of E coli O157 infection in children who attend Rose Lodge Nursery School in Aboyne. Around 40 children attend the nursery at any one time.

E coli O157 are bacteria that are commonly carried in the gut of a variety of farm animals and can be found in their faeces. Careful hand washing can prevent infection arising after handling clothes and footwear that are dirty following outdoor play or work, handling animals or raw meat, and visiting the toilet. Careful hand washing before preparing or handling food, and thorough cooking can prevent infection being passed on through food.

The symptoms of E Coli O157 infection include diarrhoea, which is sometimes bloody, abdominal cramps, loss of appetite and more rarely vomiting. The infection is very easily spread in households. As always, it is important that everyone maintains a good standard of hand hygiene as a matter of routine.

- **Thursday 24th May 2012: Updated media holding statement**

Three cases of suspected E.Coli infection attending a nursery

We are currently investigating 2 confirmed and 4 suspected cases of E coli O157 infection in children who attend Rose Lodge Nursery School in Aboyne. Around 40 children attend the nursery at any one time.

Three children have been hospitalised but all 3 are in stable condition. NHS Grampian health protection team has contacted staff and parents/carers of all the children that attend Rose Lodge nursery and provided information about the ongoing investigation and the control measures that have been put in place.

E coli O157 are bacteria that are commonly carried in the gut of a variety of farm animals and can be found in their faeces. Careful hand washing can prevent infection arising after handling clothes and footwear that are dirty following outdoor play or work, handling animals or raw meat, and visiting the toilet. Untreated water supplies can also be a source of the bacteria. Careful hand washing before preparing or handling food, and thorough cooking can prevent infection being passed on through food.

The symptoms of E Coli O157 infection include diarrhoea, which is sometimes bloody, abdominal cramps, loss of appetite and more rarely vomiting. The infection is very easily spread in households. As always, it is important that everyone maintains a good standard of hand hygiene as a matter of routine. If parents are concerned about the health of their children, please contact your GP or NHS24.
APPENDIX 9: Media communications

- Friday 25th May 2012: Updated media holding statement

**E.coli infection update**

NHS Grampian’s Health Protection Team is now investigating three confirmed and six suspected cases of *E.coli* O157 infection in children who attend Rose Lodge Nursery School in Aboyne.

Of the three confirmed cases in children who were in hospital, one has been discharged today. NHS Grampian’s Health Protection Team has contacted staff and parents/carers of all the children who attend Rose Lodge nursery and provided them with information about the ongoing investigation and the control measures that have been put in, and remain in place.

The investigation is not confined to the nursery, whose staff are cooperating fully with the investigation. The Health Protection Team is continuing to work with Aberdeenshire Council’s Environmental Health Team to identify potential sources of exposure.

*E.coli* O157 bacteria are commonly carried in the gut of a variety of farm animals and can be found in their faeces. Untreated water supplies can also be a source of the bacteria. Careful hand washing can prevent infection arising after handling clothes and footwear that are dirty following outdoor play or work, handling animals or raw meat, and visiting the toilet. Careful hand washing before preparing or handling food, and thorough cooking can prevent infection being passed on through food.

The symptoms of *E.coli* O157 infection include diarrhoea, which is sometimes bloody, abdominal cramps, loss of appetite and more rarely vomiting. The infection is very easily spread in households. As always, it is important that everyone maintains a good standard of hand hygiene as a matter of routine. If parents are concerned about the health of their children, please contact your GP or NHS24