This quick reference guide summarises the main recommendations in the SHPN guidance for the public health management of measles outbreaks and incidents in Scotland (available on the measles page on the HPS website).

As measles is highly infectious, all steps should be performed urgently.

**Case Definitions**

Where no outbreaks are ongoing, measles should be considered if the patient has:

- fever (temperature 38°C or higher) **AND**;
- a generalised maculopapular rash **AND**;
- either cough, coryza **OR** conjunctivitis

All clinically suspected cases should be investigated using PCR (throat swab) and IgM testing (serum or oral fluid).

**Laboratory Diagnosis**

In the presence of clinical symptoms and absence of recent vaccination, measles may be confirmed by:

- PCR positive for measles virus (prodrome to 6 days post-rash; throat swab); **OR**
- Measles IgM positive (serum or saliva) (anytime; clotted blood); **OR**
- ≥ four fold rise in measles IgG between acute and convalescent sera.

Oral fluid testing should be undertaken for all suspected measles cases, regardless of whether PCR negative or positive.

**Risk Assessment**

‘Significant contact’ with a measles case cannot be definitively described. However, any contact lasting 15 minutes or more is sufficient for transmission; less if face-to-face or if contact is immunosuppressed.
Actions for health protection teams in the event of notification of suspected measles

**Receive report of suspected measles:**
- Notification from primary or secondary care [Maculopapular rash; temperature ≥38°C, cough, conjunctivitis or coryza], or
- Local diagnostic laboratory result

**Obtain history from the case including:**
- Contact with a case of measles?
- Travel to endemic areas or areas with ongoing outbreaks?
- Case attends childcare/school/work?
- Living in close community?
- Part of Travelling Community?
- Date of onset and clinical condition of case / hospitalised
- Significant contacts

**Risk assessment**
- Check for linked cases
- Check immunisation status
- High-risk contacts? (e.g. HCW, vulnerable groups) – check immunisation status or previous clinical history
- Is prophylaxis indicated? – organise MMR or HNIG
- Advise on exclusion (inform school/nursery/work)

**Call a PAG/IMT if part of cluster or outbreak. It may be necessary to call a PAG/IMT for a single case.**

**Complete enhanced measles surveillance form and send to HPS**
Control Measures

Standard Infection Control Precautions and RPE

Standard Infection Control Precautions (SICPs) must be used by all healthcare workers at all times and in all settings. Comprehensive guidance and advice is available in the National Infection Prevention and Control Manual (NIPCM).

Transmission Based Precautions (TBPs) should be followed in addition to SICPs when caring for laboratory confirmed or suspected cases of measles while considered to be infectious. More information can be found in appendix 11 of the NIPCM.

Exclusion

Confirmed measles

People with confirmed measles should be excluded from their usual place of work or study or from shared childcare facilities or any other shared space until at least four days after the rash has developed. Advise case to self isolate and to avoid contact with vulnerable groups during this time.

Exposure to measles

Exclusion of non-immune individuals exposed to measles or those with likely possible/probable measles from their usual occupation, place of study or childcare facility should not await laboratory confirmation, if index of suspicion sufficiently high.

Vaccination

Vaccination should be offered to eligible susceptible contacts of measles cases as soon as possible after exposure (unless contraindicated), ideally within three days.

Contraindicated individuals for vaccination include: immunosuppressed individuals; pregnant women; those who have had a confirmed anaphylactic reaction to MMR vaccine or components.

More information can be found in the Green Book.
Immunoglobulin (HNIG and IVIG)

HNIG or IVIG should be offered to eligible susceptible people who have been exposed to a confirmed case of measles and who fall into one of the groups listed below:

- Anyone with a contraindication to MMR vaccine;
- Immunocompromised adults or children;
- children less than 6 months of age;
- children aged 6-8 months exposed in the household setting;
- some pregnant women.

To access HNIG contact your local hospital pharmacy department.

Healthcare workers

When healthcare workers are exposed to a confirmed, probable or likely case of measles, evidence should be provided that they have received two doses of measles vaccine or laboratory confirmed measles. Those who are unable to provide this should be administered MMR if within six days of exposure (preferably within three days). Assurance of immunity should be gained by urgent immunity testing at an appropriate time interval to determine exclusion period from work.

High Risk Groups

Infants

TABLE 1: Post exposure prophylaxis in infants of UK born mothers

<table>
<thead>
<tr>
<th>Infants</th>
<th>Household exposure</th>
<th>Exposure outside of household</th>
</tr>
</thead>
<tbody>
<tr>
<td>Infants &lt;6 months</td>
<td>Assume susceptible and issue HNIG regardless of maternal status within six days of exposure</td>
<td>Assume susceptible and issue HNIG regardless of maternal status within six days of exposure</td>
</tr>
<tr>
<td>Infants aged 6-8 months</td>
<td>Offer HNIG within six days</td>
<td>Offer MMR ideally within 72 hours if not contraindicated</td>
</tr>
<tr>
<td>Infants ≥9 months</td>
<td>Offer MMR vaccine, ideally within 72 hours of exposure if not contraindicated</td>
<td>Offer MMR vaccine, ideally within 72 hours of exposure if not contraindicated</td>
</tr>
</tbody>
</table>
**Pregnant women**

**MMR vaccine is contraindicated in pregnancy.**

**TABLE 2: Management of pregnant measles contacts**

<table>
<thead>
<tr>
<th>Pregnant women</th>
<th>Measles infection/vaccination history</th>
<th>Action to take</th>
</tr>
</thead>
<tbody>
<tr>
<td>Born before 1990</td>
<td>History of measles infection</td>
<td>Assume immune</td>
</tr>
<tr>
<td></td>
<td>No history of measles infection</td>
<td>Test and administer HNIG within six days only if measles antibody negative</td>
</tr>
<tr>
<td></td>
<td>Two measles vaccines</td>
<td>Assume immune</td>
</tr>
<tr>
<td></td>
<td>One measles vaccine</td>
<td>Test and administer HNIG within six days only if measles antibody negative</td>
</tr>
<tr>
<td>Born 1990 or later</td>
<td>Two measles vaccines</td>
<td>Assume immune</td>
</tr>
<tr>
<td></td>
<td>One measles vaccine</td>
<td>Test and administer HNIG within six days only if measles antibody negative</td>
</tr>
<tr>
<td></td>
<td>Unvaccinated</td>
<td>Test and administer HNIG if measles antibody negative. If not possible to test within six days of exposure, offer HNIG.</td>
</tr>
</tbody>
</table>

**Immunosuppressed**

All immunosuppressed individuals should be considered for treatment with IVIG as soon as possible after the exposure occurred (preferably within 3 days, but treatment may be effective within 6 days).

Appendix 10 of the main Guidance for the Control of Measles Incidents and Outbreaks in Scotland details how immunosuppressed contacts of probable or laboratory confirmed measles cases should be managed.

**Unvaccinated groups**

In an outbreak situation, it is important to specifically target unvaccinated groups so they can receive MMR or HNIG if indicated.