HFMD outbreaks: What you can do

SCOPE

1. What is HFMD?
2. Health screening
3. Hygiene and Sanitation
4. Outbreak Control Measures
5. Common CDLENS Mistakes Made
What is HFMD?

- Causative agents: Enterovirus
  - Coxsackievirus A16, CA5, CA10
  - Enterovirus 71 (EV71)
- Age of onset: any, but more predominant in children (<10 yrs)
- Incubation period: 2 – 5 days (Range 2 – 14 days)
- Symptoms include fever, rashes on hands/feet/buttocks and mouth ulcers

Modes of transmission

- Direct contact with vesicular fluid of skin lesions, nose and throat secretions, or stools of infected person
- Indirect contact with articles used by infected persons
Risk Factors

- Children more susceptible due to lack of immunity
- Parents sending sick child to centre
- Cases not detected and isolated
- Close contact among classmates
- Asymptomatic cases
- Poor personal hygiene
- Contamination of toys, furniture and premises

Clinical complications

- Rare but severe and potentially fatal
- EV71 may cause viral meningitis and encephalitis which may be fatal
- EV71 isolated in HFMD outbreaks in Malaysia (1997, 2006) and Taiwan (1998)
- No specific anti-viral treatment available for HFMD
Immunity

- Infection results in immunity to the specific virus
- A second episode may occur following infection with other enterovirus

Present trend

- Shift in dominant circulating strain to EV 71
- Rise in the no. of HFMD case notifications
- Rise in no of clusters of HFMD in institutions

Seasonal distribution of HFMD, 2005-2007

HFMD Clusters

Week

No. of Clusters
Health Screening

Basis for health screening

• Early detection and prompt isolation
• Children should be monitored daily, noting any unusual symptoms or behaviour
• A child should not be allowed to continue class if he/she appears unwell
Health Screening for HFMD

• Designated check point (preferably near entrance)
• Check each child individually for symptoms
  – Fever
  – Rashes on hands/feet/buttocks
  – Mouth sores/ulcers
  – Others (lethargy, sore throat, poor appetite)
• “No-touch” screening is the best

• Ensure that you wash your hands with soap and water before and after checking the children.
Health Screening for HFMD

Fever

• Take the child’s temperature using a digital or aural (ear) thermometer.
• Use a new thermometer sheath / ear probe cover for each child.
  – > 37.9 deg C orally
  – > 38.2 deg C via ear
• Isolate child and take temperature ½ hour later to confirm
Health Screening for HFMD

Mouth ulcers

• Ask child to say “Ah”
• Use torch and look for ulcers on the tongue, inner sides of the mouth and on the lips.
Health Screening for HFMD

Rashes

• Ask child to hold out his hands
• Look for small pinkish/reddish bumps or tiny blisters with fluid on palms and back of hands
• Ask the child to remove his shoes and socks.
• Look for small pinkish/reddish bumps or tiny blisters with fluid on upper part of feet and soles

Photos Source: HPB. Courtesy of Learning by the Park (1A Pearl Bank)
Health Screening for HFMD

- Wash hands after checking each child, especially where there is physical contact.
- Use hand sanitisers if sink and water are not available.
- Hands should be washed with soap and water if they are soiled.
What to do if a child has HFMD

- Isolate ill child in the sick bay
- Inform parents and advise them to take the child to the doctor

- Notify the authorities (MOH and MCYS/MOE) immediately if there is a cluster (2 or more cases)
- Affected child should stay away from centre until well

FAQs

- Qn: During screening, this child was found to have 1 ulcer. Should I send the child away? The parents are very unhappy!
- Ans: There is no need to exclude child with single ulcer with no fever. Similarly for rashes, a single dot with no fever is not necessary to exclude. However, judgement should be used. When in doubt, isolate and check again later.
FAQs

• Qn: Why do doctors diagnose HFMD cases differently? One says it is, the other says it isn’t!
• Ans: HFMD is generally diagnosed based on clinical symptoms not lab test. Diagnosis is based on judgment at that point in time. Symptoms can progress/regress quickly. So, when the second doctor sees a patient, the diagnosis may change.

FAQs

• Qn: Why do doctors give different MC lengths for HFMD cases?
• Ans: HFMD infection can range from asymptomatic to severe. MOH recommends a 7-day MC period but doctors must use their judgment and give MC period depending on the severity and phase of the patient.
FAQs

• Qn: This parent didn’t tell me her child has HFMD until MOH called me. Why can’t the doctor write the reason on MC?
• Ans: MOH cannot force doctors to write the reason for MC as this is a matter of patient confidentiality. Centres should strive to have close working relationship with parents to avoid such scenarios.

FAQs

• Qn: This child is a sibling of a HFMD case. Can I exclude him from school because of this?
• Ans: Screening should be done for all children and anyone showing symptoms should be excluded. There is no medical basis to exclude well children from school.
Hygiene and Sanitation

Hand washing

• Not emphasized enough
• One of the most important route of transmission of infection
• Single most effective practice to prevent spread of germs
  – Practice it
  – Teach it
  – Monitor and enforcement of good handwashing practices
Hand washing facilities

- Provision of liquid soap dispenser
- Disposable hand towels or hand dryer
- Certain tap designs not child friendly

Proper hand washing procedure

- Wet hands and apply a small amount of liquid soap to hands.
- Rub hands (at least 15 seconds) Be sure to scrub between fingers, under nails and around the tops and palms of hands.
- Rinse hands under running water.
- Dry hands with blower/paper towel Avoid touching the faucet handles or towel holder
- Discard used towel in lined rubbish bin (bins with foot-pedal operated lids are preferred)

Successful promotion of Hand Hygiene

- Keep message simple and fun (e.g. Sing Happy Birthday twice – 20 secs contact time)
- Routine observation and feedback/reward
- Engineering control – make hand hygiene possible, easy, convenient, make soap & water available
- Reminders in the centre
When to wash hands

- Before handling food
- Before and after eating
- After using the toilet
- After contacting body fluids
- After playing on the playground
- After contacting any contaminated sites
- After handling pets, pet cages, pet objects
- When hands are visibly dirty
- Before giving medication

Toilet hygiene

- Diaper changing is a high-risk for contamination of the child, caregiver and environment
- Universal precaution must be observed, with designation of specific diaper changing area with easily cleanable surfaces and sink and separate from food preparation and serving areas
Communal bathing

- Mass bathing exposes the children to increased risk of infection
- Healthy children may come into contact with bodily fluids and secretions from infected children
- Mass bathing not recommended

Fomite dangers

- Toys, play items and school equipment must be cleaned and disinfected with sodium hypochlorite (bleach) after every use
- Non-washable and soft toys that are difficult to clean when soiled must not be used
- Mattresses must have waterproof PVC protection which can be cleaned
Disinfection

- Domestic bleach (5.25% sodium hypochlorite) is a good sanitising agent but should never be used undiluted

<table>
<thead>
<tr>
<th>Surface Type</th>
<th>Dilution</th>
<th>Strength</th>
</tr>
</thead>
<tbody>
<tr>
<td>Excrement soiled surface</td>
<td>1 part bleach to 10 parts water</td>
<td>Strong</td>
</tr>
<tr>
<td>General surfaces</td>
<td>1 part bleach to 50 parts water</td>
<td>Normal</td>
</tr>
<tr>
<td>Surfaces on contact with food/mouth</td>
<td>1 part bleach to 250 parts water</td>
<td>Weak</td>
</tr>
</tbody>
</table>

- Solution should have at least 2 min contact time

How to disinfect toys

- The toy should be scrubbed in warm, soapy water using a brush. Care must be taken to make sure crevices are cleaned. The toy is rinsed in clean water
- Weak bleach solution [1 part bleach (5.25% sodium hypochlorite) to 250 parts water] should be prepared and used to soak the toys for 15 minutes. Remove, rinse well in cool water and leave to air dry.
- Toys must be washed and sanitised after use by a child before other children handle them.
- Soiled toys should be put in a clearly-labelled bin reserved for dirty toys and kept out of reach of children until they are washed and sanitised.
FAQs

• Qn: Is bleach safe?
• Ans: If used correctly, bleach is safe. It should not be used undiluted. Never mix other fluids (other than water) with bleach, especially acids. Solutions for disinfection should be prepared fresh and leftover should be thrown away.

FAQs

• Qn: Everyone is accusing CCCs as cause of spread of HFMD. What about playgrounds and other places?
• Ans: HFMD is widespread in S'pore. Children can get the infection from home, community or school – anywhere that humans congregate. But CCCs are high risk due to close proximity, young population and long hours spent. Children may always introduce the infection into the CCC, but you must do your best to ensure that it does not spread.
Outbreak Control Measures

Step up measures

- Continue health screening and ensure high level of personal and environmental hygiene
- Implement staggered meal times to limit contact between children
- Eliminate communal area activities where all the children congregate
- Limit staff to work with fixed no of children in specific groups
- Prohibit use of wading pools, dress up clothes, communal floor mats
- If all else fails, may wish to consider voluntary closure for 10 days to break chain of transmission
# Epidemic Phase for Childcare population

<table>
<thead>
<tr>
<th>Trigger Level</th>
<th>Criteria for Trigger</th>
<th>MOE registered institutions (Kns and pre-schs)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>No. of cases = 2 or more cases</td>
<td>MOH to alert centre/school</td>
</tr>
<tr>
<td>2</td>
<td>No. of cases &gt;7(average) OR Attack rate &gt; 9%(average) OR Transmission period &gt;9 days (average)</td>
<td>MCYS to conduct field visit and provide feedback to MOH</td>
</tr>
<tr>
<td>3a</td>
<td>No. of cases &gt;13 (1SD) OR Attack rate &gt;18% (1SD) OR Transmission period &gt;15 days(1SD)</td>
<td>MOH to conduct investigations and highlight serious hygiene irregularities for NEA action</td>
</tr>
<tr>
<td>3b</td>
<td>Transmission period &gt;15 days(1SD)</td>
<td>MCYS to implement voluntary closure</td>
</tr>
<tr>
<td>4</td>
<td>Transmission period &gt;15 days (1SD) AND No. of cases &gt; 13 (1SD) OR Transmission period &gt;15 days (1SD) AND Attack rate &gt;18% (1SD)</td>
<td>MCYS to implement mandatory closure</td>
</tr>
</tbody>
</table>

## Rationale for closure

- Triggers are based at 1 standard deviation above average
- 15 days is also 3 incubation periods
- Closure for 10 days allows a break in transmission of disease
Public education efforts

- Print ads on newspapers
- Live reads on radio
- TV ads
- Booklets & Posters to CCCs and workplaces
- FAQs on HPB and MOH websites
- MOH Press releases

CDLENS online notification of cases

Common Mistakes Made When Logging Notifications in CDLENS

- Why does a error message appear when I try to login?
  - You must click on the ‘logout’ button after you finish your work. If you close the screen without logging out properly, you can’t login the system for next 30 minutes
  - This is necessary for security reasons
Common Mistakes Made When Logging Notifications in CDLENS

- What do I do if I submitted wrong information in the Form A/B accidentally?
  - You are allowed to amend only certain information when you go to ‘update recovery date and doctor’s information’ function and update the notification.
  - Note that NRIC, Name, D.O.B and Date of Onset cannot be amended. You can submit a fresh form with the correct information and indicate in the remarks column that this is a replacement.

Common Mistakes Made When Logging Notifications in CDLENS

- Cases were submitted thru CDLENS but unable to find the notification when need to update recovery date and doctor information.
  - In such cases where you couldn’t find your submission under the ‘update recovery date & doctor information’ function, it means the notification was not successfully submitted. Make sure you must see the message ‘successfully submitted’. If not, need to look out for error message at the top of screen.
Common Mistakes Made When Logging Notifications in CDLENS

• How to add in all class details if school/centre has more than 5 classes.
  – Click on the tab ‘add class’, fill up the 5 rows available then click on save. After that, click on the tab ‘add class’ again and another 5 empty rows will appear.

• Should the no. of children affected under the class details be accumulative?
  – No, the count will depend on how many cases you are submitting.

POINTS TO NOTE

• Instruction manual on how to use CDLENS could be downloaded after you login to the system.
• If you are unsure what is the Super user ID and password issued to your centre/school, please contact Ministry of Health.
• If you are a Super user and you forget your password, please contact Ministry of Health to reset it for you.
• Tel No: 1800 – 3258451
• Email moh_ens@moh.gov.sg
Guidelines for the Prevention and Control of Infectious Diseases in Child Care Centres/Kindergartens/ Pre-school Centres


FAQs on HFMD


MOH Contact Points:
Lalitha K (lalitha_kurupatham@moh.gov.sg – 6325 8601)
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Toh Hai Yin (toh_hai_yin@moh.gov.sg - 63258356)
Chan Pei Pei (chan_pei_pei@moh.gov.sg – 6325 8599)
SCREENING FOR HAND, FOOT AND MOUTH DISEASE:
A GUIDE FOR PRE-SCHOOLS AND CHILD CARE CENTRES

Pre-screening instructions

- Designated check point for screening
- Check each child individually.
- Take care not to allow the children to crowd around you during screening
Pre-screening instructions-
Cont’d

- Ensure that you wash your hands with soap and water before and after checking the children.

- Wash your hands with soap after checking each child.

- Use a new thermometer sheath (for digital thermometers) or ear probe cover (for aural thermometers) for each child.

Specific checks for HFMD

- Take the child’s temperature.
Specific checks for HFMD - Cont’d

- Look for mouth ulcers.

- Look for blisters on the hands.
Specific checks for HFMD - Cont’d

- Look for blisters on the feet.

What to do if you suspect a child has HFMD

- Isolate the child in the isolation room/sick bay away from the other children.

- Contact the child’s parent/caregiver.
What to do if you suspect a child has HFMD- Cont’d

- Inform the parent/caregiver to bring the child to the family doctor for a check up.

- Once the child has left, disinfect any furniture or toys that you know the child may have been in contact with.

- If the child is diagnosed with HFMD, please ask the parents/caregivers to keep the child at home until fully recovered. The child should return after the expiry of the MC given by the family doctor when he/she is well.

- Do remember to be calm and polite at all times.

Helpful tips when planning checks:

- Consider starting your checks early.

- For the early-birds, you may even wish to check the children in the presence of the accompanying parent/caregiver.

- Set up a roster for staff to do screening. For example, for each class, you may wish to roster one staff to do the checking and one to help the children with shoes/socks and maintain orderliness. As you will know your centre/school best, please organise a roster that best suits your setting.
Things to remember:

- Make sure the children wash their hands frequently with soap and running water, particularly at these times:
  1. when they enter school
  2. before and after eating
  3. after play time
  4. after using the toilet.

- Remind children to cover their mouth and nose while coughing or sneezing.

Things to remember:

- Please refer to the following guides for more information:
  1. All about Hand, Foot and Mouth Disease (HPB Booklet)
  2. Guidelines on the Prevention and Control of Infectious Diseases in Child Care Centres/Kindergartens/Pre-school Centres.
Acknowledgments

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