

**Lesson Plan 2: Disease Transmission and Blocking****1 hour 40 minutes****Learning Outcomes**

At the end of this session participants will be able to:

1. Illustrate the transmission routes of water-related diseases
2. Explain how to prevent water-related disease transmission

**Materials**

- Markers
- Flip chart paper
- Tape
- Color pictures of feces
- Poster/Flex of 5F diagram
- Flip Chart/Flex of Blocking 5F diagram
- 5 sets of 5F diagram (adopted from Government of Nepal - GoN)
- 2 Sets of *Transmission Routes* (including *Blocking*) Cards with *Arrows* (adopted from CAWST)
- 2 cards with animals from CAWST 3-pile sorting
- Instructions for the 5F diagram
- Pamphlets/ Flex of various POU options
- Hand-Washing Steps
- Picture of fowl for the flex and blocking card

**Preparation**

- Read and prepare lesson plan
- Write learning outcomes on the flip chart
- Compile 2 sets of Transmission Routes and Blocking Cards and Arrows (adopted from CAWST)
- Compile 5 sets of 5F diagram (adopted from the Government of Nepal)
- Print or prepare the 5F diagram instructions
- Prepare the POU pamphlets at a station for participants to view during breaks

**Introduction****10 minutes**

1. Distribute several pictures of feces to the participants and ask them to pass them around and look at them, touch and smell them.

2. Ask to the participants to share how they feel when they see, touch and smell the pictures.
3. Ask the participants: "Do you think you have ever eaten feces?" *Note their expressions and responses. Normally, the majority of participants will say 'No.'*
4. Explain that everyone, including you, has probably indirectly eaten microorganisms from feces. Continue to explain that this lesson will explore how this occurs and how we can prevent it.
5. Introduce the learning outcomes.

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### Disease Transmission Routes

**30 minutes**

1. Explain to the participants that they are going to explore how microorganisms from feces can get into our food, water, and finally our mouths.
2. Divide the participants into 5 groups.
3. Provide one set of the 5F diagram (GoN) cards to each group.
  - *Each set contains one specific transmission route. For example, flies; fingers; fluids; fields; and fowls (animals like dogs, chickens etc.)*
4. Allow participants to start working in their groups and ask them to create a story with the help of available cards. Walk around and ensure that there is no confusion. Give them 5-10 minutes to complete this task.
5. Ask the participants to share their story as a large group, one group at a time. When each group presents, ask the other groups to come over to see their story. Make necessary corrections if needed.
6. Summarize the session by explaining all five transmission routes by displaying the 5F diagram in a large poster or flex.

\*\*\*\*Possible lunch break\*\*\*\*

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### WASH Practices to Block Disease

**50 minutes**

1. Ask the participants to return to their previous groups (5 groups) and the picture story they shared. Provide each group with a piece of flip chart paper and several markers.
2. Ask the participants to have a discussion in their individual groups about how they can prevent their transmission route. Ask them to think of more than one barrier.
3. Ask the participants to write down their ideas for preventive measures on their piece of flip chart paper. Give the groups approximately 5-10 minutes to record their ideas.
4. After 5-10 minutes, ask each group to share their ideas with the larger group. Have the larger group add suggestions as each group presents their barriers.

5. Have the groups with “flies”, “fields”, and “fowls” present first.
6. After the first three groups have presented, explain the last two are very important things which are only effective if people know how to do them properly, and so will be explored in some more detail.
7. Ask the remaining two groups “fingers” and “fluids” to present.
8. After the group with “fingers” presents, see if they have already identified any of the critical hand-washing times.
  - a. If they have, circle them and explain that hand-washing must occur at multiple times in order to be effective and that the words circled are some of the critical times. Ask participants to discuss in a large group the other times they believe are critical for hand-washing to be effective. Add their responses to the list (along with any missing critical times) to arrive at a complete list and record on flip chart.
  - b. If they have not, explain that there are critical times at which hand-washing must occur for it to be effective for blocking disease transmission. Ask the group to brainstorm ideas for the critical hand-washing times. Add any that they are missing and record on the flip chart.
  - c. Explain to participants that it is very important to wash hands thoroughly/ properly (cleaning all of the fingers, under the fingernails, palms, and backs of hands) and to wash hands using soap and clean water.

\*\*\*Possible lunch break – tell the participants “now you can go wash your hands before eating lunch!”

9. After the group with “fluids” presents, see if they have already identified any of the POU options.
  - a. If they have, circle them and explain that these are some of the ways they can ensure their water is safe in their homes. Ask the participants to discuss as a large group what other solutions they can use in their homes to make water safe to drink. Add their responses to the list.
  - b. If they have not, explain that there are several ways they can ensure their water is safe in their home. Ask them to discuss as a large group what other solutions they can use in their homes to make water safe to drink. Add their responses to the list.
  - c. Explain to participants **only** the key information for the following POU options. Additional information will be available in the form of pamphlets/flex which participants can view during a break or after the workshop.
    - i. Boiling: Boiling our water for a few minutes can kill all pathogens in our water, making it safe to drink.
    - ii. Chlorination: Adding chlorine (such as Piyush) to water can kill most pathogens. Chlorine is a chemical which takes some time to be effective, so you must wait at least 30 minutes after adding it to water before drinking.

- iii. Filtration: Pouring water through different types of filters can remove most pathogens from our water. There are many types and sizes of filter (ex: Candle filter, CS filter, Bio-sand filter).
  - iv. SODIS: Putting clear water in a clear PET bottle and leaving it in direct sunlight for about 6 hours can kill most pathogens. The water must be clear for the UV radiation to kill the pathogens.
  - v. Tell the participants that treating water at the household level can reduce incidences of diarrhea by up to 39%.
- d. Tell the participants that if they want more information about how to do any of these point-of-use options, ENPHO has available resources they can refer to during a break or after the workshop. Have these materials available and prepared in advance. *(Note: If delivered with CHP training, participants will also have the opportunity to deepen their knowledge of POU options during the IEC practice session.)*
10. After all of the participants have presented, ask them what barrier was the most common for all transmission pathways. *Using a toilet is a very important barrier that can stop the spread of diseases.*
11. *Only in arid regions where groundwater is commonly used:* Explain to the participants that it is very important for toilets to be far away from the water source so that microorganisms from feces cannot get from the toilet into the water that people are drinking. It is recommended to build latrines at least 15 m from the nearest water source and not directly uphill of the water source.
12. Explain that the toilet is very important and use of toilets can reduce incidences of diarrheal diseases by up to 32%. However, the other barriers are also necessary. For example, if people are using toilets but are not washing their hands at the critical times or have animals defecating near water, etc., they can still end up indirectly eating feces and becoming sick.

**Note:** *The following are examples of barriers for the transmission routes:*

- **Barriers for *Flies*:**
  - *Cover your food and water*
  - *Keep your dishes clean and covered.*
  - *Use a toilet to prevent flies from coming in contact with feces*
  - *Dispose of solid waste properly so it does not attract flies*
  - *Use screens/ nets on doors and windows of houses*
- **Barriers for *Fingers*:**
  - *Hand-washing at critical times with soap. The critical times are 3 “afters” and 3 “befores.” Washing hands properly with soap at these critical times can reduce incidences of diarrhea by up to 45%.*
    - I. *After using toilet*
    - II. *After cleaning child feces*

- III. *After touching waste*
- IV. *Before eating*
- V. *Before feeding*
- VI. *Before preparing food*

- **Barriers for *Fluids* (Water):**
  - Use of toilet to prevent source contamination
  - Source water protection
  - Using any Point-of-use water treatment option
  - Safe storage
- **Barriers for *Fields*:**
  - *Use of toilet or latrine*
  - *Wash raw fruits and vegetables with safe water*
  - *Cook vegetables thoroughly*
- **Barriers for *fowls* (Animals):**
  - *Use of toilet to block animals from contacting feces*
  - *Keep animals contained (for example, on tethers or in kennels)*
  - *Keep food in places where animals cannot access it*

13. Summarize the session by showing the Flex with the barriers to transmission on the 5F diagram.
14. Summarize why we need to use all the barriers: We haven't blocked the transmission of disease fully with only one. We need to use all water, sanitation and hygiene.
15. **Optional:** Explain that using all the barriers is like a 3 legged stool, one leg is water, second leg is sanitation and the third leg is hygiene. If you take away one leg the stool will no longer stand just as if you neglect any of the 3 of water, sanitation and hygiene your health will fail.

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**Review**
**10 minutes**

1. Divide the participants into 2 groups and provide them with a complete set of the Transmission Routes (CAWST) cards to each group.
  2. Tell the participants they are going to race to see which group can complete the routes of transmission first in a right way.
  3. Explain that each group should put the image of the feces and mouth at opposite locations and then connect the two by placing the other images and arrows in between them.
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### Reflections on Lesson

### Hand-Washing Steps

