

Environmental Sampling Module – Midline

DAY 1

PROMPT: Please deliver the toy ball to the target child or respondent.

1. Who did you give the ball to?

1 = Target child

2 = Respondent

3 = Other caregiver

4 = Ball not delivered

77 = Other (specify)

2. (if question 1 is not 4) Record the time that the toy ball was delivered (24H format, HH:MM).

3. (if question 1 is 4) Why was the toy ball not delivered?

1 = Respondent/caregiver refused

2 = Did not have a toy ball to deliver

77 = Other (specify)

PROMPT: Can you please show me the area where you prepare food?

PROMPT: Hang fly tape as close as possible to the food preparation area. If there is more than one food prep area, hang the strips near where food was most recently prepared. Do NOT hang the strips over or near to a cooking fire. Ask the respondents to leave the tape undisturbed.

4. Record the time that the fly paper was hung at the food preparation area (24H format, HH:MM)

PROMPT: Can you please show me your primary latrine area?

PROMPT: Hang fly tape as close as possible to the primary latrine area. If there is more than one primary latrine area, hang the strips near the latrine that the respondent used most recently. Ask the respondents to leave the tape undisturbed.

5. Record the time that the fly paper was hung at the primary latrine area (24H format, HH:MM)

DAY 2

SECTION 1. HAND RINSE SAMPLING

1.1	Record whether the respondent has washed her or target child's hands at any time before this question since you arrived at the household. Select all that apply. [1] Observed respondent washing hands [2] Did not observe handwashing directly but respondent had wet hands [3] Did not observe respondent washing hands or with wet hands [4] Observed respondent washing/wiping target child's hands [5] Did not observe handwashing directly but target child had wet hands [6] Did not observe respondent washing/wiping target child's hands or child with wet hands
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1.2	<p>READ: Thank you. Now, I would like to do a quick inspection of your hands. I hope you don't mind. Can you please show me your hands?</p> <p>BOTH HANDS SHOULD BE SHOWN (NOT JUST ONE HAND). USE <u>APPEARANCE CODES</u> BELOW TO RECORD THE DESCRIPTION THAT BEST DESCRIBES THE LEVEL OF CLEANLINESS.</p> <p>ASK: Please show me [TARGET CHILD NAME]'s hands. DO NOT TOUCH HANDS.</p>	MOTHER/CAREGIVER	
		Left Hand	Right Hand
		A _ FINGERNAILS	D _ FINGERNAILS
		B _ PALMS	E _ PALMS
		C _ FINGER PADS	F _ FINGER PADS
		TARGET CHILD	
Left Hand	Right Hand		
G _ FINGERNAILS	J _ FINGERNAILS		
H _ PALMS	K _ PALMS		
I _ FINGER PADS	L _ FINGER PADS		

APPEARANCE CODES:

- [1] VISIBLE DIRT (DIRT/MUD/SOIL/ASH OR ANY OTHER MATERIAL IS VISIBLE)
- [2] UNCLEAR APPEARANCE (NO DIRT IS VISIBLE ON THIS PART OF THE HAND BUT, IN GENERAL, THIS PART OF THE HAND APPEARS UNCLEAR)
- [3] CLEAN (OBSERVED PART OF THE HAND IS CLEAN AS WOULD APPEAR AFTER SOMEONE WASHES HANDS OR TAKES A BATH)
- [88] N/A
- [99] OBSERVATION NOT POSSIBLE/REFUSED/TARGET CHILD NOT AVAILABLE

PROMPT: Collect a hand rinse sample from the target child by rinsing both hands in same Whirlpak bag.

1.3 Please enter the 4-digit unique numerical ID.

PROMPT: Please label the whirlpak with the following label: H.[PID].[DAY].[MONTH]

1.4 Has a child hand rinse sample been collected successfully? Select all that apply.

- 1 = Yes, both hands rinsed
- 2 = No, only one hand rinsed
- 3 = No, some sample was spilled
- 4 = No, the inside of the sample bag was contaminated
- 5 = No, sample not collected

1.5 (if 1.4 is not 5) Record time that sample was collected (24H format, HH:MM).

SECTION 2. SENTINEL TOY SAMPLING

2.1 (ask) Did you receive a toy ball from our team yesterday?

- 1 = Yes
- 2 = No → Skip to Section 3

PROMPT: Could you please show me where the ball that was delivered to your household yesterday is currently located?

2.2 (ask) May I now rinse the toy ball that was delivered to your household yesterday?

- 1 = Yes
- 2 = Ball was lost → Skip to Section 3

3 = Ball was given away to another household → Skip to Section 3
4 = Refused → Skip to Section 3
77 = Could not retrieve the ball for other reason (specify) → Skip to Section 3

2.3 (obs) Where is the ball located?

1 = Outside: on dirt
2 = Outside: on concrete/cement/wood
3 = Outside: in container
4 = Outside: in another home
5 = Inside: on dirt floor
6 = Inside: on concrete/cement/wood floor
7 = Inside: on surface other than ground, not in container (e.g. on bed, on table, etc.)
8 = Inside: in storage container/cabinet
9 = In child's hands
77 = Other (specify)

2.4.a (ask) In your opinion, how much did (target child's name) play with the toy ball over the past 24 hours? (read each choice)

1 = Several times (4 or more times)
2 = Few times (2-3 times)
3 = Only once since he/she got the ball
4 = Never
99 = DK/Not sure

2.4.b In your opinion, how much time total did (target child's name) spend playing with the toy ball over the past 24 hours? (enter hours)

2.5.a (ask) In your opinion, how much did any of the other children in the household or bari play with the toy ball in the past 24 hours? (read each choice)

1 = Several times (4 or more times)
2 = Few times (2-3 times)
3 = Only once since he/she got the ball
4 = Never
99 = DK/Not sure

2.5.b In your opinion, how much time total did other children in the household or bari spend playing with the toy ball over the past 24 hours? (enter hours)

2.6 (ask) Did children from other baris play with the toy ball in the past 24 hours? (read each choice)

1 = They played with it within this bari
2 = They played with it outside this bari
3 = No
99 = DK/Not sure

2.7 (ask) From what you saw, did the children play with the ball mostly inside the home (indoors), mostly outside the home (outdoors) or equal amount inside and outside the home?

1 = Mostly inside the home
2 = Mostly outside the home
3 = Equal amounts inside and outside the home
99 = DK/Not sure

2.8 (ask) How did the child play with the ball? Read each choice.

1 = With hands
2 = With feet
3 = With hands and feet
99 = DK/Not sure

2.9 (ask) Did you do anything to clean the ball?

1 = Yes

2 = No

2.10 (ask) (if 2.9 is 1) What did you do to clean the ball? Select all that apply. Read each choice.

1 = Washed with water only

2 = Washed with water and soap

3 = Wiped with towel

4 = Wiped on clothes

77 = Other (specify)

2.11 (ask) (if 2.9 is 1) How long ago did you clean the ball? (Enter hours, 99=DK)

2.12 (obs) Have children played with the ball since you arrived at the household? (select all that apply)

1 = Target child has played with ball

2 = Other children in the household have played with ball

3 = No children have played with ball

2.13 (obs) Toy appearance.

1 = Unused

2 = Used, clean appearance

3 = Used, unclean appearance

4 = Used, visibly dirty

5 = Used, visibly wet

2.14 (obs) Toy condition.

1 = Good condition

2 = Bulging (from being stepped on, sat on, heat applied, etc)

3 = Deflated (ball has lost air)

4 = Burst/Torn (ball has visible hole)

PROMPT: Collect a toy rinse sample by rinsing the toy in the Whirlpak bag.

2.15 Please enter the 4-digit unique numerical ID.

PROMPT: Please label the whirlpak with the following label: T.[PID].[DAY].[MONTH]

2.16 Has a toy rinse sample been collected successfully?

1 = Yes, toy rinsed successfully

2 = No, some sample was spilled

3 = No, the inside of the sample bag was contaminated

4 = No, sample not collected

2.17 (if 2.16 is not 4) Record time that sample was collected (24H format, HH:MM).

SECTION 3. WATER SAMPLING

If (target child's name) wanted a drink of water right now, could you show me how you would give it to him/her? [If target child is too young to drink water, ask: If your child < 3 years wanted a drink of water right now, could you show me how you would give it to him/her?] [If the mother has no children < 3 years, ask: If you wanted a drink of water right now, could you show me how you would get it?]

Ask the question and observe.

3.1	IS WATER FOR DRINKING CURRENTLY AVAILABLE?	[1] YES [2] NO → SKIP TO SECTION 4		
	WHAT DID RESPONDENT DO BEFORE TAKING THE WATER?	YES	NO	D/K
3.2	Rinsed glass / cup with drinking water before filling	[1]	[2]	[99]
3.3	Washed hands with water before drinking water was obtained	[1]	[2]	[99]
3.4	Washed hands with soap before drinking water obtained	[1]	[2]	[99]
	FROM WHERE DID THE RESPONDENT TAKE THE WATER?	YES	NO	D/K
3.5	Brought directly from the water source	[1]	[2]	[99]
3.6	Brought directly from water stored in a container	[1]	[2]	[99]
3.7	Brought directly from water filter	[1]	[2]	[99]
3.8	Stored water was covered or in a narrow mouth vessel	[1]	[2]	[99]
	HOW DID SHE GET THE WATER INTO THE GLASS/CUP?	YES	NO	D/K
3.9	Hands touched / contacted the drinking water	[1]	[2]	[99]
3.10	Glass/cup dipped into water container	[1]	[2]	[99]
3.11	Ladle used to obtain water	[1]	[2]	[99]
3.12	Water poured from container	[1]	[2]	[99]
3.13	Water poured from tap / handpump	[1]	[2]	[99]

3.14 (ask/observe) What is the source of the drinking water?

- 1 = Tubewell
- 2 = Unprotected spring
- 3 = Protected spring
- 4 = Unprotected dug well
- 5 = Protected dug well
- 6 = Rainwater collection
- 7 = Cart with small tank / drum
- 8 = Tanker truck
- 9 = Surface water (river, dam, lake, pond, stream, canal, irrigation channel)
- 10 = Piped water into dwelling
- 11 = Piped water into yard / plot
- 77 = Other (specify)
- 99 = DK

3.15 (obs) (if 3.6 is 1) What is the type of the container?

- 1 = Kolshi **[B]** / Jerrycan **[K]**
- 2 = Jug
- 3 = Topaz (provided by icddr) **[B]**
- 4 = Bucket
- 5 = Other wide mouth container
- 6 = Other narrow mouth container
- 99 = Could not observe

3.16 (if 3.6 is 1) How long ago did you or somebody in your home collect this water? (99 = Don't know)

- A ☐ ☐ HOURS
- B ☐ ☐ DAYS

3.17 (if 3.6 is 1) Have you done anything to make this water less cloudy or safer to drink?

1 = Yes

2 = No → Skip to 3.20

99 = DK/Not sure

3.18 (if 3.17 is 1) How was this water treated? 🖱️ Do Not Read Responses. Mark all that apply.

1	[1] Yes [2] No	Aquatabs [B] / Chlorine dispenser [K] (field code differs by country)
2	[1] Yes [2] No	Waterguard / bottled chlorine
3	[1] Yes [2] No	Boil
4	[1] Yes [2] No	Strain it through cloth or other material
5	[1] Yes [2] No	Water filter [ceramic, sand, composite]
6	[1] Yes [2] No	Solar disinfection (SODIS)
7	[1] Yes [2] No	Let it stand and settle
8	[1] Yes [2] No	Biosand filter
9	[1] Yes [2] No	Lifestraw Family Filter (Vestergaard Frandsen distributed) [K]
10	[1] Yes [2] No	Coagulant (alum)
11	[1] Yes [2] No	PUR (flocculant + disinfectant)
12	[1] Yes [2] No	Other (specify)

3.19 (if 3.18 is 1=Y or 2=Y) Approximately how long ago did you treat the water?

HH:MM □□:□□ (99:99 Don't know)

PROMPT: (if 3.18 is 1 or 2) Please collect a drinking water sample by pouring the water from the glass provided by the participant into a Whirlpak with sodium thiosulphate.

PROMPT: (if 3.18 is 1=N and 2=N) Please collect a drinking water sample by pouring the water from the glass provided by the participant into a regular Whirlpak.

3.20 Please enter the 4-digit unique numerical ID.

PROMPT: Please label the whirlpak with the following label: W.[PID].[DAY].[MONTH]

3.21 Has a drinking water sample been collected for microbiological testing?

1 = Yes

2 = No

3.22 (if 3.21 is 1) Record time that sample was collected (24H format, HH:MM)

PROMPT: (if 3.18 is 1=Y or 2=Y) Please fill a plastic tube with stored water for chlorine testing.

3.23 (if 3.18 is 1=Y or 2=Y) Has a sample from the storage container been collected for chlorine testing?

1 = Yes

2 = No

3.24 (if 3.23 is 1) Record time that sample was collected (24H format, HH:MM)

SECTION 4. FLY DENSITY

4.1 Observe fly activity in the food preparation area. Estimate the total number of flies seen.

1 = None

2 = Low (1-5)

3 = Moderate (6-10)

4 = High (>10)

4.2 Was the fly tape hung under a roof (protected from rain)?

1 = Yes

2 = No

4.3 Is the food prep area inside or outside?

1 = Walls and roof

2 = Walls but no roof

3 = Roof but no walls

4 = No roof and no walls

4.4 (record) How many steps are the strips hung from the food preparation area?

4.5 (obs) Was the fly tape in the food preparation area tampered with or did it fall down?

4.6 (record) What is the total number of flies counted on all strips?

4.7 (record) (if 4.6 is not 0) Write the number of each species observed:

Musca domestica_____

Lesser house fly_____

Blow/bottle fly_____

Flesh fly/sarcophaga_____

Other_____

Cannot distinguish_____

4.8 Record the time you performed the fly density observation at the food preparation area (24H format, HH:MM)

4.9 Observe fly activity in the latrine area. Estimate the total number of flies seen.

1 = None

2 = Low (1-5)

3 = Moderate (6-10)

4 = High (>10)

4.10 Was the fly tape hung under a roof (protected from rain)?

1 = Yes

2 = No

4.11 (record) How many steps are the strips hung from the latrine area?

4.12 (obs) Was the fly tape in the latrine area tampered with or did it fall down?

4.13 (record) What is the total number of flies counted on all strips?

4.14 (record) (if 4.13 is not 0) Write the number of each species observed:

Musca domestica_____

Lesser house fly_____

Blow/bottle fly_____

Flesh fly/sarcophaga_____

Other_____

Cannot distinguish_____

4.15 Record the time you performed the fly density observation at the latrine area (24H format, HH:MM)

SECTION 5. RESIDUAL CHLORINE MEASUREMENT

PROMPT: (if 3.23 is 1) Measure the free chlorine residual in the stored water sample. Please leave the compound before conducting the chlorine test.

5.1 (record) (if 3.23 is 1) Free chlorine: _____._____ mg/L

5.2 (record) (if 3.23 is 1) Record time that chlorine was measured (24H format, HH:MM)

Field Instructions

A. Hand Rinse Samples

1. Put on gloves.
2. Enter the unique numerical ID into the tablet.
3. Add sample ID to hand rinse bag before collecting the sample: "H.PID.DAY.MONTH"
4. Take out the stopwatch or timer; prepare to time.
5. Help the mother place the child's LEFT hand in the hand rinse bag. Make sure the full hand is submerged. Make sure that the mother does not touch the child's hands or the inside of the bag.
6. From the outside of the bag, massage the child's hand for 15 seconds. Make sure to massage each finger, between the fingers, and the palm.
7. With the child's hand still fully submerged in the bag, shake horizontally for 15 seconds.
8. Remove the child's hand from the bag (do not touch the child's hand).
9. Repeat steps 5-9 with the RIGHT hand.

B. Toy Rinse Samples

1. Put on gloves.
2. Enter the unique numerical ID into the tablet.
3. Add sample ID to hand rinse bag before collecting the sample: "T.PID.DAY.MONTH"
4. Ask respondent for the toy ball left with the house the previous day
5. Observe visible dirt on the ball and record on tablet
6. Place the toy ball into the sampling bag and whirl closed.
7. Massage the toy ball in the sample bag for an additional 15 seconds.
8. Shake bag with ball for 15 seconds.
9. Remove ball from the sample bag by only touching the outside of the bag and moving the ball up the inside of the bag. DO NOT PLACE HAND IN BAG TO REMOVE BALL.
10. Whirl bag 3-4 times and close bag
11. Dry ball with paper towel and return the toy to the respondent

C. Stored Water Samples

1. Enter the unique numerical ID into the tablet.
2. Add sample ID to whirlpak before collecting the sample: "SW.PID.DAY.MONTH"
3. Ask the respondent to bring a glass of water as if giving it to her young children (see questionnaire).
4. Ask the mother to pour the water directly into the whirlpak bag, careful not to touch cup to the bag.

5. If the respondent reports that water has not been treated with chlorine, use a normal whirlpak bag for collection.
6. If the respondent reports the water has been treated with chlorine, use whirlpak with sodium thiosulfate tablets for collection. The sodium thiosulfate neutralizes any chlorine that may have been added to the water.
7. If the responded reported that the water has been treated with chlorine, use a 50mL centrifuge tube to collect some water to later test for chlorine. Do not test for chlorine at the household, wait until you have left the bari.

D. Fly densities

Hanging Fly Tape

1. Find a suitable location to hang three strips of fly tape in the food preparation area but away from the stove and smoke. Hang under a roof or protected from rain if possible.
2. Coat fingers with petroleum jelly to limit sticking.
3. Cut 3 pieces of sticky tape each 1.5 feet (use measuring tape) using scissors.
4. Using a short piece of string tied to each end of the fly tape and to two anchor points, hang the tape horizontally near the desired location at a minimum height of 4 feet from the ground (to keep away from the reach of children).
5. Tie up the fly tape so it hangs horizontally and is fully stretched (taught).
6. Repeat with 2 more pieces of tape, hanging them 2-3 inches apart horizontally below the first piece.

Counting Flies

1. Count the total number of flies present on all three strips. Record the number of flies in each category of fly species (refer to fly speciation chart).
2. Remove and dispose of the fly tape in your trash bag. Do not leave the fly tape at the household.