Management of Child Feces: Study Design and Measurement Tips

Things to Consider When Selecting Methods, Designing Surveys and Questionnaires to Better Measure, Define and Understand Child Feces Management Behaviors

The aim of this document is to describe techniques and to propose strategies for measuring safe and improved stool disposal behavior collected through formative and other project based research studies. This guidance is intended for project managers and researchers planning to conduct studies in middle or low-income countries. This document highlights different methods that may be most appropriate to explore this behavior, as well as study design considerations and additional research topics that may be worthy of investigation. Challenges or limitations of existing research methods are also presented. The document is divided into five main sections. First, background information is provided to address why it is important to measure child feces disposal behavior, and the relevance of this behavior in the context of broader sanitation efforts. Second, challenges to measuring this behavior are presented as a means to help the reader understand some of the complexities of child feces management. Third, different measurement approaches that are available to investigate this behavior, as well as existing questionnaires or other study guide resources, are discussed. Fourth, survey design and other methodological considerations are addressed, such as sample size considerations and the target group. Finally, suggestions for additional research questions and areas that merit further exploration are presented as a means to build on the existing knowledge base.

To supplement this document, sample interviews in the Annex can also be reviewed and modified according to the research objectives. These sample interviews include a self-report quantitative survey, with spot observations, and qualitative discussion and in-depth interview guides.

1. WHY MEASURE CHILD FECES DISPOSAL BEHAVIOR?

Measurement of children's feces disposal behavior (see Box 1 for a definition) is paramount given that unsafe and unimproved disposal of child feces may represent a significant health risk to communities, and in particular to children (Fischer et al. 2012; Feachem et al. 1983). Child sanitation may be particularly important in breaking the fecal-oral transmission since children are more susceptible to diseases such as diarrhea and they often defecate in areas where other children could be exposed (Gil et al. 2004; Lanata et al. 1998). Young children are also susceptible to infections given the amount of time they spend on the ground and their exploratory behaviors (Moya et al. 2004). Research shows that unsanitary disposal of children's feces is associated with an increase in diarrheal disease incidence (Baltazar et al. 1989; Traoré et al. 1994). For example, a study in South Sumatera, Indonesia, demonstrates that disposing of children's feces in open places rather than in a latrine is significantly associated with diarrheal disease incidence among children under three years of age (Aulia et al. 1994). Poor sanitation can also result in other substantial health impacts in children, including intestinal worms, enteropathy, malnutrition, and death.

Despite the health risks associated with unsafe feces disposal, child feces management is not routinely addressed in many Water, Sanitation and Health (WASH) programs, and yet health impacts are measured as diarrhea or stunting in children.

BOX 1: WHAT IS "SAFE DISPOSAL" OF A CHILD'S FECES?
The safest way to dispose of a child's feces is to help them use a toilet or latrine or, for very young children, to put or rinse their feces into a toilet or latrine. For the purpose of this toolkit, these disposal methods are referred to as "safe," whereas other methods are considered "unsafe." By definition, "safe disposal" is only possible where there is access to a toilet or latrine. When a child's feces is put or rinsed into an "improved" toilet or latrine, this is termed "improved child feces disposal."

What Is the Definition of a Child?
Throughout this document reference is made to children, or a child, regarding the practices associated with the safe and improved disposal of a child's feces. For the purpose of this toolkit, a child is defined as being between the ages of 0 and 5 years, unless otherwise specified.

2. WHY IS CHILD FECES MANAGEMENT CHALLENGING TO MEASURE?

Measurement of safe and improved stool disposal is challenged by the complexities of this human behavior. A child's feces may be disposed of in different ways according to a number of factors, such as different times of the day, where the child defecates (e.g., at home or outside of the home), or/and the caregiver that is looking after him or her. Moreover, the child's caregiver, who is typically interviewed regarding the disposal practices, may be inconsistent in their behavior, for example safely disposing of a child's feces after some defecation events but not all. Such variation also risks the possibility of misclassifying the behavior. This is further complicated by the fact that a child may have more than one caregiver (e.g., a mother, an older sibling, a nanny, and/or a grandmother) and the disposal of their feces is dependent on the person caring for them at the time they defecate (Curtis et al. 1993; Cousens et al. 1996).

In addition, there are also a number of other important behaviors to consider, such as how the feces is transported, whether or not the hands of the child and the caregiver are washed, if any cloths are used to clean the child, and how and where the cloths are washed. Other factors may also influence safe and improved stool disposal, such as a caregiver's perception that children's feces are harmful, social norms in the community regarding the disposal of children's feces, the age of the child and his or her mobility level, and accessibility to a latrine or child potty (see Section 5 for further discussion).

In short, to measure whether or not a child's feces is disposed of safely, and to understand reasons for this, requires taking into account a number of variations in, and influences of, the behavior, as well as the many practices associated with the final outcome. Ultimately, how one decides to measure this behavior needs to consider different methods that may be most suitable to meet the research objectives at hand.

3. WHAT OPTIONS ARE AVAILABLE TO MEASURE CHILD FECES MANAGEMENT?

A number of methods and survey questionnaires have been developed, which can be referenced and drawn on when designing child feces management surveys and instruments. Among the methods available for this purpose are the following: structured self-report questionnaires (administered in population based surveys), participant observation, and qualitative methods such as focus group discussions and key informant interviews. Each technique can contribute to an understanding of child feces management behavior but all have shortcomings in identifying and quantifying what occurs in practice.

3.1 Structured self-report questionnaires

Structured self-report questionnaires are commonly used to ascertain information on safe and improved stool disposal. Guidance on the standard approach to assessing child feces management measurement is provided by the World Health Organization (WHO) and the UNICEF Joint Monitoring Program for Water Supply and Sanitation (JMP). A trained interviewer administers the questions in a structured survey instrument to the household respondent, typically the child's primary caregiver. Questions ask caregivers about the method of stool disposal for their child the last time he or she defecated. These questions address the core indicator "percent of children whose stools were disposed of safely," which is typically disaggregated by the child's age. Guidance on the numerator, denominator and indicator is provided by the JMP WHO/UNICEF (Box 2).

BOX 2: CORE QUESTIONS ON THE SAFE AND IMPROVED FECES DISPOSAL OF CHILDREN'S FECES

QUESTION 9: Disposal of children's faeces

The purpose of this question is to determine how the faeces of all children under three years of age in the household were disposed of when they most recently passed stool. The safe disposal of children's faeces is of particular importance because children's faeces are the most likely cause of faecal contamination to the immediate household environment.

The preferred disposal method, which is likely to ensure protection of the household environment from faecal contamination, is putting or rinsing stools into a sanitation facility.

Q9. The last time [name of youngest child] passed stools, what was done to dispose of the stools?
Child used toilet/latrine
Put/rinsed into toilet or latrine
Put/rinsed into drain or ditch
Thrown into garbage
Buried
Left in the open
Other (specify)
DK

Indicator
Sanitary disposal of children's faeces.

Numerator
Number of children under the age of 3 years whose (last) stools were disposed of safely.

Denominator
Total number of children under the age of 3 years surveyed

Sanitary disposal of children's faeces

- Child used toilet/latrine
- Put/rinsed faeces into the toilet or latrine
- Buried the faeces

Unsanitary disposal of children's faeces

- Put/rinsed faeces into drain or ditch
- Faeces thrown into the garbage
- Faeces left or buried in the open
- DK

Source: WHO/UNICEF 2006, page 15.

These questions have routinely been included in mixed-purpose, nationally representative population surveys, such as the Demographic and Health Survey (DHS) or the Multiple Indicator Cluster Survey (MICS), but have also been included with ease in smaller formative or other project based research studies.

There are several advantages to using these JMP recommended questions, including comparability over time and between different surveys. For example, the WSP and UNICEF investigated safe and improved feces disposal in children across 24 countries, using data gathered from the DHS and MICS. Among caregivers in households with a child under the age of three, in 14 of the 24 studies, more than 50 percent of caregivers did not dispose of the feces into any kind of toilet or latrine—i.e., the feces was unsafely disposed (World Bank Group/UNICEF 2014). Given the standardization of these questions, researchers were able to make these comparisons across studies and countries. Another advantage of using the JMP questions is that there is also specific guidance provided on how the indicators can be calculated, with the added advantage that findings can then be compared to nationally representative surveys, allowing a researcher/project manager to discuss how similar or different their findings are to that of larger surveys.

In addition to the standard JMP questions, recent efforts have included additional measures that go beyond the "last time the child defecated." These questions may address the frequency of defecation and disposal behaviors, and frequency regarding the use of potties, and frequency of latrine use among all family members (Jenkins et al., 2014; Arnold et al., 2014). For example, the Safe San Index (SSI), quantifies the hygienic safety of a household's defecation and human feces disposal practices. Questions on the frequency of behavior are administered to the female head of the household, and include measures of young children (Jenkins et al., 2014; see Box 3):

BOX 3: EXAMPLE OF SAFE SAN INDEX QUESTIONS

ODR7 3	Considering the routines of children (15 and under) in your household during the past week, on how many of the last 7 days did school age children in your household defecate in the open?	No school age children (0) No days (1) Some days (2) Most days (3) Every day (4)
ODR7 4	On how many of the last 7 days did any pre-school age child in your household defecate in the open?	No pre-school children (0) No days (1) Some days (2) Most days (3) Every day (4)
LUF 6	When school age children in your household are at home, how often do they use the toilet to defecate?	Sometimes/Occasionally (2) Usually/Mostly (3) Always (4)
LUF 7	For young children who are too young to be able to use the toilet, after they defecate on the ground in your courtyard or in your house, how often do you put their feces in the toilet?	Sometimes/Occasionally (2) Usually/Mostly (3) Always (4)

Source: Jenkins et al. 2014, 8324.

In another example, provided by the WASH Benefits survey implemented in Kenya and Bangladesh, questions are administer to address the frequency of child potty use (see Box 4).

BOX 4: SAMPLE WASH BENEFITS BASELINE SURVEY, 2013

CHILD POTTY USE (ADMINISTER TO ALL HOUSEHOLDS)

C.815	Does your household have a potty? Nyumba yako ina poti ya watoto? [EVEN IF POTTY DOES NOT BELONG TO RESPONDENT / RESPONDENT'S CHILD]	[1] YES [2] NO [99] DON'T KNOW/NOT SURE	→SKIP TO C.821 →SKIP TO C.821
C.816	In the last week, how often did your child (or children) use the potty? Katika wiki iliyopita, mtoto/watoto wako walitumia poti kwa kiwango kipi?	[1] EVERY TIME OF DEFECATION [2] MORE THAN HALF OF ALL DEFECATION EVENTS, BUT NOT EVERY TIME [3] LESS THAN HALF OF ALL DEFECATION EVENTS, BUT OFTEN [4] RARELY (DEFINED BY A FEW OCCASIONS) [5] USED TO USE IT, BUT NO LONGER USE [6] NEVER [99] DON'T KNOW/NOT SURE	→SKIP TO C.821 →SKIP TO C.821 →SKIP TO C.821
C.817	What are the ages of the child or children using the potty in this household?	YES	NO

Source: Arnold et al. 2013, page 53.
Note: The questionnaire was shared through personal communication. Details of the project and additional information can be requested through Arnold, et al.

An advantage of these self-report questionnaires is that they may also be used to elicit information relevant to behavioral factors that may facilitate or impede safe and improved stool disposal; such determinants may include attitudes and beliefs, as well as logistical factors such as access to adequate quantities of water. One set of determinants that is commonly measured is the perception that children's feces is less harmful than that of adults. Describing changes in this perception may be useful as part of monitoring a sanitation promotion campaign that proposes to increase awareness of the harmfulness of child's feces. These determinants are discussed more fully in Section 5, but an example is presented in Box 5.

BOX 5: SAMPLE QUESTIONS FROM THE WSP VIETNAM SURVEY, 2014 (PAGE 16)

Q.108	**We have a list of statements on behaviors related to MANAGING CHILDREN EXCRETA. We would like to know how much you AGREE or DISAGREE with each statement. You are free to give your opinion. There is no right or wrong answer. Let's start with … (READ OUT FIRST STATEMENT). Do you STRONGLY AGREE, AGREE, DISAGREE, or STRONGLY DISAGREE with this? Surveyors show card of levels of agreement and disagreement**				
SaniFOAM Determinants	**Statements**	**1. Strongly disagree**	**2. Disagree**	**3. Agree**	**4. Strongly Agree**
Available / Access	1.There are shops in nearby markets selling child potties or bowls for children to defecate in.	1	2	3	4
Social Norms	2.Most of the people in this community think it is acceptable to throw children's excreta in the open or in a river / ditch.	1	2	3	4
Sanctions	3. People who dispose of their child's excreta in open / in the river should be punished / fined.	1	2	3	4
Knowledge	4.The children caretakers in my family have the knowledge to dispose of children's excreta safely.	1	2	3	4
Roles and Decision	5. In my household, it is the job of the women / mother to dispose of children's excreta.	1	2	3	4
	6.The elder children (>6 ys) help to take care of their younger siblings, including disposal of their excreta.	1	2	3	4
	7.Our family is busy and do not have time to wrap child's excreta carefully before disposal / dig a hole to bury it.	1	2	3	4

Source: Courtesy WSP Vietnam. Questionnaire shared through personal communication.

A general advantage of using a self-report questionnaire in population based surveys is the opportunity to run statistical tests to assess differences between for example, age groups, and to do additional mining of the data, such as investigating safe stool disposal among households that have access to an improved latrine. For example, in the Lao People's Democratic Republic, it was found that among caregivers living in households with an improved latrine, only 36 percent safely disposed of child feces (World Bank Group/UNICEF 2014). Tests for significant differences can be conducted and relationships between the behavior and other measured variables can be tested. This method also allows for trends to be investigated over time.

Challenges: Self-report questionnaires are not without challenges, particularly as this pertains to the accurate measurement of child feces management behavior. It is noted that self-report questionnaires have low validity in that caregivers may report the expected or desirable behavior of their children, and avoid reporting "wrong" behaviors (Gil et al. 2004). It has been demonstrated through numerous studies that self-report questionnaire data are less valid than direct observations for the study of defecation practices at the household level (Stanton et al. 1987; Huttly et al. 1994; Curtis et al. 1993). Recall periods are also important, since recall bias worsens when the time period is extended, which is a key reason why the JMP indicators use "last time of defection." However, studies that rely on obtaining results from a single time frame may not be accurate if the behavior is not always practiced in the same manner. Self-report questionnaires are limited in that they can only provide an estimate for what happened the last time the child defecated, according to the recall of the child's caregiver. This may be acceptable if one expects that the caregiver will repeat their behavior time and time again, but more challenging if their behavior is expected to vary according to the time of day, or where the child is, or if the child has multiple caregivers. A researcher may consider using more than one measurement, or consider complementing findings with other methods to obtain a more valid estimate. That said, it has been found that the method of stool disposal is one of the most repeatable hygiene behaviors (Cousens et al. 1996). Other behaviors, such as the use of a potty, cleaning the child, and handwashing, were found to have greater variability.

Another challenge specific to the JMP questions is that many surveys have modified the manner of questioning, be through changes in the structure or alteration of response options. For example, response formats are altered allowing for multiple choice answers rather than a single answer, timeframes are changed whereby no time frame is provided (i.e., how do you usually dispose of your child's feces?), the language of the question is modified (i.e., what are the ways people in this household dispose of babies poo?) or/and the questions are administered to respondents other than the caregiver of the child, typically the male head of the household or chief wage earner. When these questions are modified, this compromises the utility of the data and the comparability of the outcome indicators. Ideally, researchers should strive to maintain the line of questioning suggested by the JMP to allow for comparability across different studies and standardization in the final outcome indicators.

Take-away message: Self-report questionnaires remain an important source of information about child feces management and other determinants of this behavior, especially as research in this field broadens to include additional measures of behavior, in addition to the standard JMP questioning. Using quantitative self-report surveys will allow for data to be disaggregated, different analytical tests to be performed, and further investigation of possible determinants of behavior. Given some of the social desirability challenges, a researcher may consider using more than one measurement of behavior, or/and consider complementing findings with other methods to obtain a more precise estimate of safe and improved stool disposal. It is important to replicate the JMP recommended line of questioning and consider adding in addition behavioral questions as necessary.

3.2 Direct Measures: Structured observations

Structured observations have been used to measure safe and improved stool disposal. These observations require trained observers to watch and record the manner in which a child feces is disposed of over a fixed period of time in the household. The information is collected on a structured form which will include a list of selected variables for the data collector to observe, such as where the child defecated, how the feces was transported, where the feces was finally placed and how the child's bottom was cleaned. An example of an observation tool used for child feces management is provided in Box 6.

BOX 6: EXAMPLE OF STRUCTURED OBSERVATIONS USED IN THE WASH BENEFITS SURVEY, "EXCRETA DISPOSAL AND HYGIENE PRACTICES FOLLOWING CHILD DEFECATION AMONG PERI-URBAN HOUSEHOLDS IN WESTERN KENYA."

2.0 COMPOUND OBSERVATIONS				
Number	**Practice/Behavior**	**Options**	**Time of Event**	**Notes**
2.01	Child mobility	1. Not mobile 2. Crawls 3. Walks 99. Don't know	N/A	
2.02	Child's initial defecation site *(For all responses except potty, please proceed to **2.06**)*	1. Potty → **2.03 – 2.05** 2. Nappy 3. Diaper 4. Clothes 5. Other linens 6. Latrine 7. Household floor 8. Soil outside of household 9. Bushes/field 88. Other, specify _____ 99. Don't know		
2.03	Location of potty	1. Inside the house 2. Outside the house	N/A	
2.04	Cleanliness of potty before use	1. Clean (no urine or feces present) 2. Dirty (urine or feces present) 99. Don't know	N/A	
2.05	Cleaning of potty after use	1. Water 2. Water and soap 3. Rag		

Source: Rush 2008, pages 58-59.

Caregiver practices are observed by trained interviewers. Data are analyzed based on the observations and presented in a quantitative manner (see Box 7 for an example).

BOX 7: EXAMPLE OF THE PRESENTATION OF OBSERVED HYGIENE BEHAVIOR REGARDING OPEN DEFECATION USED IN THE SURVEY "EXCRETA DISPOSAL AND HYGIENE PRACTICES FOLLOWING CHILD DEFECATION AMONG PERI-URBAN HOUSEHOLDS IN WESTERN KENYA."

Table 1. Observed hygiene behaviors surrounding child defecation (n=26)

Behavior	n (%)
Child's defecation site[1]	
Clothes	6 (23)
Household soil	5 (19)
Potty	5 (19)
Other	8 (31)
Not observed	4 (15)
Cleaning method[2]	
Rags / Paper	7 (27)
Child's clothes	4 (15)
Tissue paper	4 (15)
Other materials	5 (19)
Not observed	9 (35)
Disposal Site[3]	
Latrine	13 (50)
Outside / Bush	5 (19)
Drainage ditch	4 (15)
Garbage pile	2 (8)
Not observed	4 (15)
Caretaker handwashing after last contact with child feces	
Water and soap	3 (12)
Water only / washing water[4]	16 (62)
Not observed	7 (27)
Child handwashing after defecation	
Water and soap	4 (15)
Washing water[4]	1 (4)
Not observed	21 (81)

[1] Two events had two defecation sites each.
[2] Three events had two cleaning methods each.
[3] Two events had two disposal sites each.
[4] The presence or absence of soap in the washing water could not be determined.

Source: Rush 2008, page 54.

The benefits of structured observation are the ability to record objective data on child stool disposal practices and the richness of information gathered (Ram 2010). Some studies have concluded that data collected through direction observation may have greater validity than those obtained through questionnaire interviews, which may tend to overestimate the frequency of good practices (Curtis 1993; Rush 2008). In addition, during structured observation, the observer has the opportunity to record information about different children in the household, different caregivers, and how their behaviors may vary according to different times of the day or different children, allowing for some assessment regarding the consistency of the behavior.

Challenges: A key challenge with the observation of child's feces disposal is that this behavior is hard to observe, given that defecation may be done only once per day and may not occur at all during the observation period. If the observation period extends for only a few hours, the chances of observing a defecation practice will decrease. For example, a study investigating child defecation practices using 2-3 hour structured observations from 549 households found that data could only be gathered on child defecation behaviors on 277 occasions. The appropriate selection of the time of the day and the number of hours to be observed are critical for the study of defecation practices (Gill et al. 2004). It is estimated that at least five hours of observation over a single time period is needed (Curtis 1993). Moreover, defecation behavior may differ according to the time of day, possibly rendering morning observations incomparable to afternoon or evening observations. Thus, depending on the required sample size to demonstrate project outcomes, structured observations would require substantial numbers of trained individuals, or a prolonged data collection period, either of which might be expensive.

There are other more general points to consider with this method as well. When individuals are observed, behavior may be altered by the presence of the observer. For example, a phenomenon called reactivity may occur, when a subject feels discomfort when being observed because the observation is intrusive (Huttly et al. 1994). Structured observations are also prone to the Hawthorne effect (i.e., the effect on the person being studied, usually a positive or beneficial one, precisely because they are being studied) (Stanton and Clemens 1987). The inter-observer variation is also an important issue to be considered. In that case, a single behavior may be interpreted differently by two different observers (Gil et al. 2004).

Take-away messages: Structured observations are useful tools for investigating child feces management. This method can provide rich data regarding caregiver practices, including how a child's stool is disposed of, but also the many other behaviors associated with this. Repeated observations have an additional advantage in that they may be particularly useful to investigate the extent to which behavior may change according to different circumstances or over time. However given that structured observations are also time consuming and can be expensive, this method may be less practical for "lighter" formative or project based research studies.

3.3 *Direct observation: Spot observations*

Spot observations are made at the moment the observer is visiting the household to directly observe hygiene practices and environmental conditions related to the behavior. Spot observations of the household can be an efficient means to gather additional evidence regarding child feces management practices and the materials that may be available within the household to ensure safe and improved stool disposal. These include observations on the type of potty, transport materials, inspection of nappies, presence of feces on the floor or ground, handwashing stations, as well as the presence of a latrine and its components (see Box 8 for an example). While these measures do not directly indicate safe and improved stool disposal, they can be used as additional indicators and provide supplementary and complementary information to other methods being used. This information can be relatively easily and rapidly collected, and added on to other survey methods, making this method relatively cost effective. Questions used as part of interviewer spot observations have included:

- Were feces present on the latrine slab? Were feces present in the yard? Was stagnant water visible in the yard? (Curtis et al. 1993)

- Was the potty in a place that is easily accessible? How was the condition of the potty? What is the condition of the tool that is used to pick up feces (e.g., feces on the tool, broken, easily accessible by children)? (see Box 8 for an example).

BOX 8: EXAMPLE OF SPOT OBSERVATIONS USED IN A WASH BENEFITS BASELINE SURVEY, 2013

C.819	OBSERVATION: WAS THE POTTY IN A PLACE THAT IS EASILY ACCESIBLE? (CIRCLE YES OR NO FOR EACH OBSERVATION) **NOTE:** "EASILY ACCESSIBLE" FOR THE CHILD MEANS THAT THE CHILD COULD RETRIEVE THE POTTY WITHOUT ADULT / CAREGIVER ASSISTANCE; "EASILY ACCESSIBLE" FOR THE MOTHER/CAREGIVER MEANS THAT IT CAN BE RETRIEVED QUICKLY WITHOUT EXTENSIVE RUMMAGING OR SEARCHING IN THE COMPOUND OR HOUSEHOLD.	YES	NO
1	EASILY ACCESSIBLE WHEN NEEDED BY CHILD	[1]	[2]
2	EASILY ACCESSIBLE WHEN NEEDED BY MOTHER	[1]	[2]
	OBSERVATION: POTTY CONDITION (CIRCLE YES OR NO FOR EACH)	YES	NO
3	VISIBLE SIGNS OF FECES INSIDE/ON POTTY	[1]	[2]
4	POTTY WAS COVERED WITH THE LID	[1]	[2]
5	POTTY WAS COVERED WITH ANYTHING OTHER THAN THE LID	[1]	[2]
5A	POTTY MISSING LID	[1]	[2]
6	DRY	[1]	[2]
7	BROKEN SO THAT UNUSABLE, DESCRIBE:_____	[1]	[2]
8	COVERED IN DUST/SIGNS OF NON-USE	[1]	[2]
C.819A	ASK: How many children use this potty?		

Source: Rush 2008, page 54.

To further complement the utility of spot observations, two alternative methods may be considered, both which are used in the handwashing literature (Ram 2010). First, to ascertain if a potty is easily accessible, the interviewer can record the amount of time needed for the respondent to bring the potty to the interviewer; if less than one minute is required, that could indicate the readiness of the availability of a potty. Another approach is to ask the caregiver to demonstrate the usual child feces disposal practice. While social desirability may prompt an improved behavior during the demonstration compared to usual behavior, other research has suggested that there may be a fair degree of agreement between structured and spot observations (Biran et al. 2008). See Box 9 for an example of indicators that can be obtained using spot observations.

BOX 9: INDICATORS THAT COULD BE TRACKED USING RAPID OBSERVATIONS OF THE HOUSEHOLD

- Presence of feces in or outside the home?
- Procurement of child potty in the home within one minute of interviewer's request
- Presence of a tool to dispose of feces
- Presence of a designated place to wash hands with water available at the time of inspection
- Presence of a designated place to wash hands with a hand cleansing agent, such as soap, available at the time of inspection
- Presence of a designated place to clean the child after defecation
- Presence of cloths soiled with feces
- Use of latrine to dispose of feces following a request to demonstrate usual manner of feces disposal

Challenges: Similar to direct observations, spot observations may also be subject to inter-observer variation, where an indicator may be interpreted differently by two different observers. It is important that appropriate observer training is provided to minimize this bias, and that observation checklists are specific and leave little scope for interviewer interpretation. In addition, rapid observations of the household do not provide information on the stool disposal behavior of children, unless adjustments are made to include a caregiver demonstration.

Take-away message: Observations are not generally conducted as a stand-alone study, rather they are tagged on to quantitative population based surveys to provide additional objectively recorded information. This makes them cost efficient and useful to help confirm and triangulate data from quantitative surveys. These observations of the household environment, or tools or accessories, are useful to gather clues about the child feces management behavior, and could be further complemented with child feces management demonstrations from the caregiver(s).

3.4 Qualitative methods

Qualitative methods, such as focus group discussions or one on one in-depth interviewers, will also be useful to measure children's stool disposal. Focus group discussions can be complemented with pile sorting techniques and mapping, which are participatory techniques that help to stimulate discussions on sensitive topics. This includes using imagery of stool disposal practices, where group members are asked to comment on pictures that are good or bad. They may also be used to assess the desirable attributes of a product, including the price and features. In focus groups, discussions are facilitated by one or two moderators, using a discussion guide. These guides can include a breadth of topics related to stool disposal and allow for questions to be posed such as "how is child's poo normally disposed of," "why is this practice common," etc.

Most studies use several focus groups, with different types of participants. In the context of child feces disposal, it might be worthwhile to include a range of caregivers of children with different ages, unless cultural or contextual norms dictate otherwise. In addition, the design should consider whether or not participants have access to latrines in their household, or the risk is that respondents simply state that the current stool disposal method is based on the fact that they don't have access to a latrine.

In-depth interviews can also be used to provide additional insights regarding behavior, or used to gather narrative accounts regarding what the caregiver did the last time the child defecated. The guides allow for probes to identify why certain decisions were made, and how behavior may vary across different situations. The guides also provide an opportunity for the participant to explain their behavior. These qualitative methods are most appropriate for producing information on culturally sensitive issues or behaviors, as well as to study the determinants of child feces management. Examples of these guides can be found in Box 10.

BOX 10: SAMPLE FGD GUIDES ADDRESSING CHILD FECES MANAGEMENT "EXCRETA DISPOSAL AND HYGIENE PRACTICES FOLLOWING CHILD DEFECATION AMONG PERI-URBAN HOUSEHOLDS IN WESTERN KENYA."

6) In our observations, we noticed that caretakers in this community disposed of children's stools in several locations.
Kuom gik mane waneno, newafwenyo ni jorit nyithindo mane gqweng ka wito chieth nyithindo kuonde ma opogore opogore.

Note taker: Start writing the list (be sure to leave a few out): latrine, garbage pit, drainage ditch, outside/bush.

Possible Discussion Questions:

- What else would you add to this list?
Gin ang'o ma unyalo medo e magi?
- How do you feel about caretakers disposing of children's stools in *site X*?
Iwinjo nade ka jorit nyithindo wito chieth e X?
- Which site do you think is the (1. most common; 2. easiest; 3. safest) place for caretakers to dispose of children's stools? Why?
- If you saw old/dry feces on the ground, would you need to dispose of them? Why or why not? Where would you dispose of them? *Discuss if this is a different site than where they would dispose of new/fresh feces*
Kaponi ineno chieth motuo e laro,bende inyalo wite? Nang'o? ok kamano nang'o?.
- If you were washing soiled clothes/nappies/potties, where would you dispose of the water? *Discuss if this is a different site than where they would dispose of solid feces*
Kaponi ne iluoko lewni, napkin,kata potty,ere kama inyalo puko e pi ma iluokogi no.

7) What are some of the reasons why people in this community do not use a latrine to dispose of children's feces?

Source: Rush 2008, page 70.

If a research objective is to investigate the multiple behaviors associated with child' feces management, and to understand how this may vary according to the caregiver, the time of day, and the child, as well as the reasons why this behavior may vary, then the use of qualitative methods may provide valuable insights. The use of qualitative research methods would allow patterns of behavior to be investigated, including how, and why, behavior may differ according to different populations and varying child demographics. Qualitative research can also facilitate understanding of the relevant determinants of this behavior, i.e., the drivers and barriers to performing safe and improved stool disposal. This qualitative evidence could also be used to inform the design of structured questions for collecting both

observational and self-reported data in future quantitative surveys. Example of the types of questions that could be answered by qualitative research methods are presented in Box 11.

Given the complexity of child feces management behavior and the scarcity of research on this topic, qualitative methods may be particularly valuable when investigating child feces management. However, if an objective of the research is to evaluate the success of monitoring of a project intervention, then qualitative research is not a suitable method to use. Rather, this method will be very helpful to investigate the plethora of behaviors associated with child feces management as well as the determinants of these behaviors, making this method suitable to help inform the design of project interventions.

BOX 11: RESEARCH QUESTIONS THAT COULD BE ANSWERED BY QUALITATIVE RESEARCH

- Where do children typically defecate?
- What are common ways in which children's stool is disposed of? Why are these practices most common?
- Who typically disposes of a child stools? Are there certain situations where stools may be disposed of in different places? What are these situations?
- How are children cleaned? Are cloths used to clean the child? Where are soiled clothes disposed of? Where is dirty water emptied?
- Are children trained to signal defecation or use a toilet?
- What types of tools are caregivers aware of to enable the safe disposal of child feces? What are the barriers for caregivers to access or use such tools and products?
- What are the main impediments to safe and improved stool disposal? What are reasons that people strive to dispose of feces safely?
- How did you teach your child to use the potty? How do other families train their children?
- How do you think your neighbors feel about your child's defecation location?
- What are the emotional, physical, and social barriers associated with feces disposal? How do they differ among households that already have access to, or ownership of, a latrine? What are the key motivational factors that influence safe and improved stool disposal?
    - How do social norms influence how children's feces is disposed of?
    - How does knowledge regarding the perceived harmfulness of child's feces relate to safe and improved feces disposal?
    - What are accessibility issues, such as perceived availability of child potties or tools to transport the feces?
    - To what extent is inconvenience a barrier to the safe and improved feces disposal?

Findings should be presented to illustrate variations according to the time of day, or across seasons, by a child's age, gender, a child's ambulatory ability, and/or by its caregiver(s).

Challenges: A common challenge with qualitative research is finding suitable moderators or interviewers that are well trained and versed in collecting good quality data. This may be overcome by using smaller groups of participants, which may be particularly useful when discussing sensitive topics and easier for a less experienced moderator to manage. In addition, analysis of qualitative data can be poorly executed, where data is not well presented in reports, and thus the credibility of the data is dismissed. Finally, qualitative data will include the presentation of themes and quotes, rather than point estimates and because of this, the method may be discredited as being unreliable or invalid.

Take-away message: Qualitative research is a very useful method to explore child feces management, and to help inform the design of project interventions. It allows for topics to be investigated in detail, and facilitates explorations of the reasons why caregivers may perform different behaviors or have different attitudes towards child feces management. Given the complexity of child feces management behavior, it may be particularly well suited to the research questions being posed. Appropriate training is needed of moderators to ensure that rich information can be gathered from the discussions and interviews, and suitable analytical techniques must be used to synthesize the data, to ensure that results are credible and endorsed by program managers and other relevant parties.

3.5 Summary of Measurement Options

In summary, given the complexity of child feces management behavior, careful consideration is needed regarding the selection of appropriate methods and tools that are most suitable to answer the research question(s) at hand. Although there is broad agreement about the health benefits of safe and improved stool disposal, there is not general agreement about the best way to measure this behavior. The most common methods used to date to address child feces disposal practices have been self-report questionnaire surveys. Recent research efforts in this field have started to move beyond the realms of "safe and improved stool disposal," and begun to look at various dimensions of this behavior. Some studies have used alternative research methods or/and expanded on the standard questions given the complexity of child feces management behavior and the noted challenges with the reliability of survey questionnaires. Observational surveys have been employed to directly observe patterns of behavior, and how this behavior may change over time. Using a variety of methods offers a better understanding of these human behaviors but ultimately the types of measurement that may be used will vary according to the resources available and the specific research questions at hand.

4. WHAT STUDY DESIGN/METHODOLOGICAL SHOULD BE CONSIDERED?

This section discusses the importance of different study design components that may be considered when investigating child feces management. Specially, three points are discussed: defining the target population, sample size considerations for quantitative surveys and recording a child's age. These points are made in reference to population based quantitative surveys, given these methods have typically been employed to investigate child feces management, but other measurement issues are raised where and as appropriate.

Interview or observe the child's primary caregiver: It is postulated that safe and improved disposal of a child's feces is contingent on the behavior of the caregiver of the child (Cousens et al., 1996). In accordance with recommended practices to investigate childhood behavior in other sectors, data collected on the disposal of children's feces should ideally be gathered from the primary caregiver of that child. Standard population based survey recommendations specify that the primary caregiver of the child answers the survey questions, and likewise qualitative research efforts should strive to include a range of caregivers, including those with multiple young children.

However, this is complicated by the fact that a child may have more than one caregiver and the disposal of their feces is dependent on the person caring for them at the time they defecate (Cousens et al. 1996; Curtis et al, 1993). Particular challenges have been noted in quantitative self-report surveys where child feces related questions are at times completed by the head of the household or another representative, rather than the caregiver of the child. Other studies have prioritized interviewing the female household head but have accepted responses from male household members if the female head is not available.

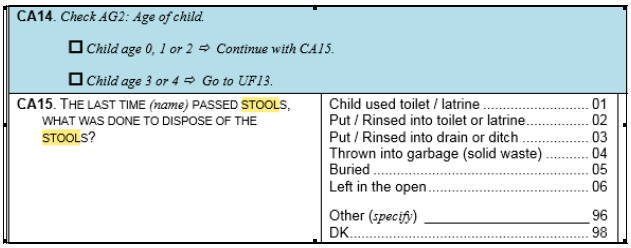
Ideally future child feces management studies should target the child's principal caregiver, and questionnaires should include measures to identify the primary caregiver of that child. In case a child's caregiver is not present at the time of the survey, the survey design procedures could specify the need to make household call-backs if resources allow.

Sample size: When questions on child sanitation are part of surveys that collect data on a broader range of topics, there is often a disregard for the number of children under the age of three or five, or rates of latrine ownership when developing sample sizes during the study design stage. In particular, if there is an interest to explore differences in a child's age and whether or not stool is disposed of safely, then future studies should consider the sample size needed to ensure a sufficient number of children of different ages. In addition, if a research objective is to investigate differing safe and improved feces disposal rates among households with different categories of latrines, sample size calculations should also consider latrine ownership rates. This is particularly important if there is a need to investigate determinants of safe and improved feces disposal into a hygienic latrine, given that having access to such latrine is a precursor to being able to perform the desired behavior.

Record the child's age: The frequency of safe and improved stool disposal varies according to age, and it is recommended that results are typically disaggregated by age. However, to date a child's age has not been routinely recorded, or/and recorded in an inconsistent manner across sanitation research studies. For example, the DHS uses the JMP line of questioning but only asks information for the youngest child under the age of five. In this example, if a caregiver looks after a child that is nine months old and another child that is two and a half years old, then the question is only asked for the youngest child, so results are not representative of all children under five. To overcome this aforementioned challenge, the MICS surveys capture this information by asking about all children aged between 0 and 36 months. The JMP standard questions are then administered to the primary caregiver for each child, so information on all children under the age of three in the household is gathered. Following the MICS approach is ideal in that it will allow for data to be disaggregated according to different age groups.

BOX 12: SAMPLE CHILD FECES MANAGEMENT QUESTIONS USED IN THE MICS AND THE DHS

MICS



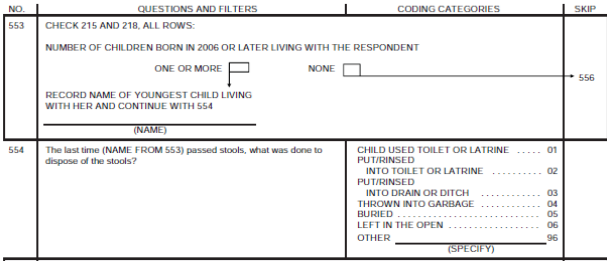
CA14. *Check AG2: Age of child.*

☐ *Child age 0, 1 or 2 ⇨ Continue with CA15.*

☐ *Child age 3 or 4 ⇨ Go to UF13.*

CA15. THE LAST TIME *(name)* PASSED STOOLS, WHAT WAS DONE TO DISPOSE OF THE STOOLS?	Child used toilet / latrine ..... 01 Put / Rinsed into toilet or latrine ..... 02 Put / Rinsed into drain or ditch ..... 03 Thrown into garbage (solid waste) ..... 04 Buried ..... 05 Left in the open ..... 06 Other (*specify*) _____ 96 DK 98

DHS



NO.	QUESTIONS AND FILTERS	CODING CATEGORIES	SKIP
553	CHECK 215 AND 218, ALL ROWS: NUMBER OF CHILDREN BORN IN 2006 OR LATER LIVING WITH THE RESPONDENT ONE OR MORE ☐ NONE ☐ RECORD NAME OF YOUNGEST CHILD LIVING WITH HER AND CONTINUE WITH 554 _____ (NAME)		→ 556
554	The last time (NAME FROM 553) passed stools, what was done to dispose of the stools?	CHILD USED TOILET OR LATRINE ..... 01 PUT/RINSED INTO TOILET OR LATRINE ..... 02 PUT/RINSED INTO DRAIN OR DITCH ..... 03 THROWN INTO GARBAGE ..... 04 BURIED ..... 05 LEFT IN THE OPEN ..... 06 OTHER _____ 96 (SPECIFY)	

In other studies, sometimes the age of the child is omitted all together or the questions are altered to refer to "children" or "babies" without a clear definition of what constitutes a child or a baby. One question may ask about a child, followed by another that asks about a baby. A respondent's reference point could then vary according to what he or she believes is a "baby," meaning there is less precision in the indicator. Without a clear record of the age of the child, estimates cannot be calculated regarding the safe and improved feces disposal among children under the age of three, five, or other relevant age groups.

Given that patterns of behavior may vary according to a child's age, further studies should consider recording this information for all children in the households, and presenting data according to different age categories. Information may also be gathered regarding a child's ambulatory status, which is discussed further in Section 5.

Summary of Design Considerations: In summary, there are a number of important study design elements that will be useful to consider to ensure meaningful and accurate data as it pertains to child feces management. Ensuring a sufficient sample size will allow for additional exploratory analysis to be conducted, such as observing behavior and practices among children living in households with a hygienic latrine. Interviewing the primary caregiver will help to capture more reliable and accurate information regarding how the stool is disposed of. Ensuring a child's age is recorded will allow data to be disaggregated according to different age categories, and addressing child feces management for all children in the household will allow for a more accurate measure of this behavior.

5. WHAT ELSE SHOULD BE INVESTIGATED?

This section describes areas where further research is merited, such as exploring different practices associated with safe and improved stool disposal as well as other behavioral determinants. The importance of technological and contextual factors as it relates to safe and improved stool disposal behavior is also increasingly recognized, such as the attributes and availability of products needed to perform the behavior correctly, as well as the need for a supportive societal or structural environment.

Explore other behaviors: While most studies have investigated the core indicator on safe disposal of feces, fewer have investigated the plethora of behaviors that are associated with safe and improved feces disposal among children. In a meta-analysis of 10 observational studies published between 1987 and 2001, it was found that child feces disposal behaviors considered risky (open defecation, feces disposal in the open, feces not removed from soil, feces seen in household soil, and children seen eating feces) were associated with a 23 percent increase in risk of diarrheal diseases (Gill et al. 1993). This suggests that there is merit in studying other child related behaviors, which ensures preventing the spread of pathogens, such as how the feces is handled, transported, and finally disposed of (Yeager et al. 2002). In addition, whether or not hands are washed with soap after the child defecates is also important, as well as if the child is properly cleaned following defecation, given these practices may also be associated with contamination.

Research to date also shows that anal cleansing has been reported to be a fairly common behavior among caretakers of young children and is often performed by wiping the child's bottom with bare hands, or by using a clean section of a soiled diaper, or/and using paper, or cloth (Aiello et al. 2008). Water is frequently used in the cleaning process, but cleansing agents such as soap, mud or ash have been less commonly reported or observed (Jinadu et al. 2004). The disposal of the cleaning materials is rarely investigated and merits further exploration.

Explore possible determinants of safe and improved stool disposal: Additional research has been used to understand relevant demographic characteristics or other behavioral factors that may facilitate or impede safe and improved stool disposal; such determinants may include attitudes and beliefs, perceived opportunity, ability or motivation to perform the desired behavior as well as a child's ambulatory ability.

Research efforts have investigated a child's ambulatory ability (see Box 13). It was found that the odds of safe and improved disposal of child feces was three times higher in ambulatory children than in non-ambulatory children, among children living in households that own a latrine, suggesting that a child's ability to walk or crawl may be important factors to investigate (Majorin et al. 2014).

BOX 13: EXAMPLE SELF-REPORT QUESTIONNAIRE MEASURING A CHILD'S AMBULATORY ABILITY.

Q1	Do you have a child under 5 years old that cannot yet walk? (Record for the youngest child)	Yes No SKIP to Q4
Q2	The last time this child passed stools, where did he/she do it?	
	Child used latrine Child used potty Child used nappy Defecated on paper Defecated on the roadside Defecated on ground in the compound Defecated on ground inside the household Defecated in an open field Other, please specify	01 Skip to Q4 02 03 04 05 06 07 08 88_____
Q3	The last time he/she passed stools, what was done to dispose of the stools?	
	Put/rinsed into latrine Thrown into garbage Thrown into field Buried Left in the open Don't know Other, please specify	01 02 03 04 05 99 88_____
Q4	Do you have a child under 5 years old that can walk? (record for the youngest child)	Yes No skip to Q7
Q5	The last time this child passed stools, where did he/she do it?	
	Child used latrine Child used potty Child used nappy Defecated on paper Defecated on the roadside Defecated on ground in the compound Defecated on ground inside the household Defecated in an open field Other, please specify	01 Skip to Q7 02 03 04 05 06 07 08 88_____
Q6	The last time he/she passed stools, what was done to dispose of the stools?	
	Put/rinsed into latrine Thrown into garbage Thrown into field Buried Left in the open Don't know Other, please specify	01 02 03 04 05 99 88_____

Source: Majorin et al. 2014.
Note: Questionnaire shared through personal communication. Details for the project and additional information can be requested through Majorin et al.

In terms of behavioral determinants, a number of factors have been found to influence safe and improved stool disposal. For example, qualitative research in Orissa, India, suggests that safe disposal of feces in the latrine, even in households with long established and consistent latrine use, is rare. This is attributed to low caregiver awareness regarding the importance of safely disposing of children's feces in a latrine and perceptions of inconvenience (Jenkins et al. 2014). Similarly, caregiver's perceptions of how dirty children's feces are may also influence safe and improved stool disposal. There is evidence that feces from infants or small children are not considered as dirty, repulsive, or hazardous as feces of older children or adults (Gorter et al. 1998; Huttly et al. 1998). Other research shows that poor latrine product attributes may influence whether or not a child uses a latrine, as well as the fear that young children may fall into the pit (World Bank Group/UNICEF 2014; Curtis, et al. 1993). Personal issues of time, as well as other obstacles such as distance and availability to a latrine, the perception that the transfer of

feces from pots into latrines can be cumbersome, have also been cited as reasons to not dispose of feces into a latrine (Biran 2005; Yeager et al. 1999; Rush 2008).

Three broad options for identifying behavioral determinants are outlined in Table 1. In general determinants can be measured using either qualitative or quantitative research. Each option is appropriate in different circumstances, and has its own advantages and disadvantages. In a given context, it may be useful to use a mix of methods to identify behavioral determinants.

TABLE 1: METHODS FOR IDENTIFYING BEHAVIORAL DETERMINANTS USING QUANTITATIVE OR QUALITATIVE RESEARCH

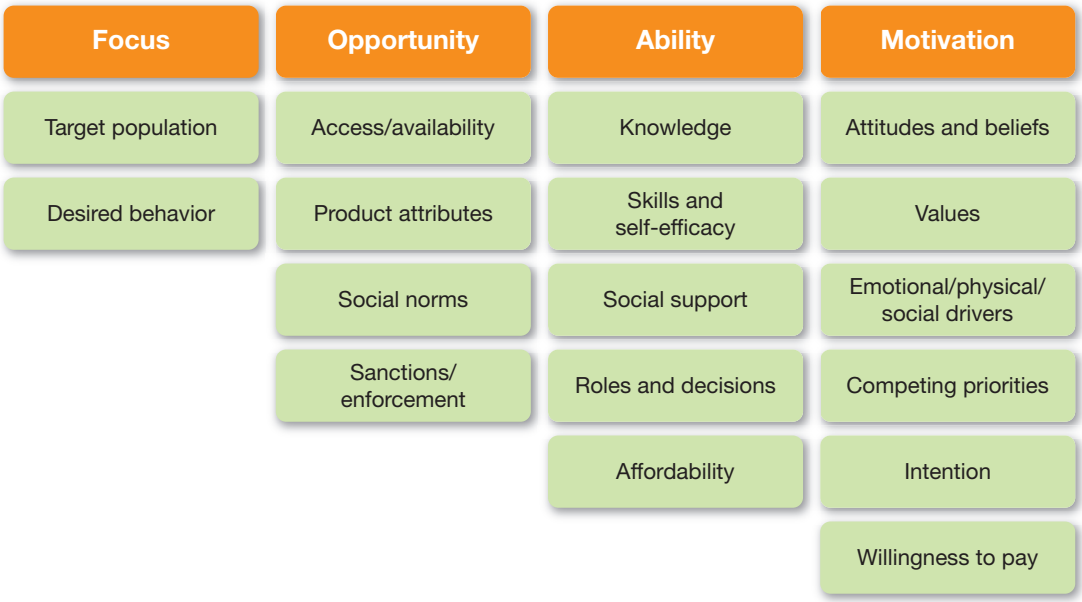
Method	When to Use	Advantages	Disadvantages
Quantitative	• When information on behavioral determinants is lacking • When potential determinants can be identified, but their level of association with the behavior is not well-established • When the required sample size can be obtained with available time and resources	• When appropriate sampling methods are used, results can be generalized to the target population • Quantifies prevalence / level of determinants in the target population • Allows for statistical tests of association between determinants and behaviors	• Costly • Time-consuming • Results may not be available in time to inform program design
Qualitative	• When information on behavioral determinants is lacking • When determinants of behavior among the target audience are not well-understood, and potential determinants cannot be identified • When population based surveys would require a very large sample size and therefore data collection would be very expensive • When population based survey data collection is unrealistic due to time constraints • When few people in the population are performing the desired behavior	• Relatively quick • Relatively low-cost • Provides rich information for understanding the consumer and can feed into the evidence-based decision making process	• Limited ability to generalize to the entire target population • Does not provide a numeric measure of association between the determinant and behavior • Can be challenging to find well-trained moderators to ensure good quality data. Analysis can also be challenging.
Secondary sources	• When information on behavioral determinants in the program context is available from previous studies	• Allows for evidence-based programming without the time and cost involved in conducting primary research	• Measurement of determinants may not exactly correspond to a behavior change a given framework, so results will have to be retrofitted.

Examples of child feces management determinants can be found in several studies. For example, a WASH survey in rural Bangladesh and Kenya collected potential determinants in structured interviews (Arnold et al. 2013):

- How satisfied are you with the cleanliness of this compound?
- Does contact with children's feces pose a risk to your health?
- Does contact with animal feces ever pose a risk to your health?
- Do any other households in this community practice open defecation?

WSP formative research studies have included multi-items scales to address determinants or factors influencing safe and improved disposal of feces. Box 14 illustrates how the development of these factors is guided by a conceptual framework, SaniFOAM, which sees behavior influenced by an individual's opportunity, ability and motivation (Devine 2009).

BOX 14: THE SANIFOAM FRAMEWORK



Source: Devine 2009.

For example, a 2013 formative research study in the Rajasthan, India included the following statements, for which respondents were asked their level of agreement (strongly agree, agree, disagree, strongly disagree):

BOX 15: EXAMPLE CHILD FECES MANAGEMENT QUESTIONS USED IN RAJASTHAN BY WSP, 2013

	Statements	Strongly disagree	Disagree	Agree	Strongly Agree
Beliefs and attitudes					
a	Babies' faeces are less harmful than adult faeces	1	2	3	4
b	If a child only has breastmilk, his/her faeces is not harmful	1	2	3	4
c	If a child is still having breastmilk while consuming other food, his/her faeces is not harmful	1	2	3	4
d	It is not necessary to clean hands with soap and water after cleaning breastfed child as their faeces are not harmful	1	2	3	4
e	If child's excreta is disposed in bushes it is not harmful as it provides manure to the trees	1	2	3	4
f	It is safe to wash a infant's excreta in the drain	1	2	3	4

Source: Water and Sanitation Program, World Bank Group's Water Global Practice

While scaled items are useful to measure the level of agreement, there are important considerations in their design and development, such as the question phrasing and response options. The scaled items also require more complicated analysis to ensure their utility. Because of this, sometimes the scaled items may not be presented or omitted from survey reports if there is not capacity or guidance on how to perform the data analysis. Additional discussion and advice on developing scales can be found online at http://www.wsp.org/sites/wsp.org/files/publications/Study-Design-and-Questionnaire-Tips-for-Sanitation-Research.pdf.

Consider availability of existing enabling products and tools and services: Several products and tools, such as diapers, hygienic latrines, potties and instruments to pick up and transport feces, like leaves and hoes may help enable a caregiver to practice safe and improved feces disposal. The presence of affordable and widely available potties in the market may be of particular relevance given that the disposal of feces into a latrine occurs most frequently after a child has defecated in a potty. For example, a study from Burkina Faso found that children who used a pot for defecation were twenty-six times more likely to have their feces discarded into a latrine than another location (Curtis et al. 1993). Investigating what tools or products a household may be using to dispose of the feces will be helpful to further understand safe and improved stool disposal (see Box 16 for an example). This can be complemented with supply side data to illustrate what tools and products may actually exist in the market place and at what price. In addition, it may be useful to investigate the perceived attributes of the product or technology (e.g., the physical attributes of a child potty), which can also influence its adoption and sustained us. Qualitative research may be particularly useful for this latter objective.

BOX 16: EXAMPLE QUESTIONS TO ADDRESS AVAILABILITY OF TOOLS TO COLLECT FECES

SANI-SCOOPER USE (ADMINISTER TO ALL HOUSEHOLDS)				
C.821	Does your household have a dedicated tool to clean up feces around your household?	[1] YES [2] NO [99] DON'T KNOW/NOT SURE		
C.821a	What kind of tool do you primarily use to clean up feces?	[1] JEMBE [2] SPADE [3] KIPUPU [77] OTHER (SPECIFY): _____ [88] NO TOOL USED TO CLEAN UP FECES → **SKIP TO S.833**		
C.822	How often do you use the [TOOL] to clean up feces? DO NOT READ RESPONSES.	[1] MULTIPLE TIMES PER DAY [2] ONCE PER DAY [3] A FEW TIMES EACH WEEK [4] LESS THAN ONCE PER WEEK [5] USED TO USE IT, BUT NO LONGER [6] NEVER	 → **SKIP TO S.833** → **SKIP TO S.833**	
C.823	What do you use the [TOOL] for? DO NOT READ RESPONSES. PROBE UNTIL RESPONDENT IS FINISHED. CIRCLE ALL THAT APPLY.			CIRCLE IF MENTIONED
1	CLEAN UP ANIMAL FECES			[1]
2	CLEAN UP CHILD FECES			[1]
3	CLEAN UP GARBAGE			[1]
4	TAKE THE SCOOP TO THE FIELD (FOR WORK)			[1]
5	DIGGING/GARDENING			[1]
77	OTHER (SPECIFY): _____			[1]
C.824	Could I please see the tool? OBSERVATION: JEMBE/SPADE/KIPUPU/OTHER TOOL CONDITION. CIRCLE ALL THAT APPLY.		YES	NO
6	CANNOT PRODUCE TOOL		[1]→ **SKIP C.825**	
1	VISIBLE SIGNS OF FECES ON TOOL		[1]	[2]
2	DRY		[1]	[2]
3	BROKEN AND NEEDS REPAIR		[1]	[2]
4A	EASILY ACCESSIBLE BY CHILD		[1]	[2]
4	EASILY ACCESSIBLE BY ADULT		[1]	[2]
5	SIGNS THAT TOOL IS NOT USED		[1]	[2]

Contextual factors and the existing enabling environment: Existing government policies, guidelines and strategies should be reviewed to determine the extent to which they include any mention of the management of child feces. In locations already implementing community-led total sanitation, it may be useful to check whether or not safe and improved feces disposal (i.e., everyone's feces are safely disposed) is a criteria of being considered open defecation free. It may also be important to consider temporal factors or other barriers such as flooding, or soil conditions, which may influence accessibility to latrines and how a child's feces is finally disposed of. These contextual factors may include environmental barriers such as the availability of water sources or patterns of precipitation.

The relevance of such contextual factors is noted in a number of WASH behavior change frameworks, such as the Integrated Behavioral Model (IBM)-WASH framework, which has been applied to the use of child potties, as shown in Box 17 (Dreibelbis et al. 2013). This is an example of another framework that can be used to guide researchers and practitioners in acknowledging the various levels of influence that may shape the use of child potties. Similar to the SaniFOAM framework, this framework can be used to identify areas in which additional qualitative or quantitative research may be needed to understand the different factors that may influence safe and improved stool disposal. The framework can be applied to the development of data collection tools and instruments intended to better understand WASH behaviors.

BOX 17: EXAMPLE OF THE IBM-WASH BEHAVIOR CHANGE FRAMEWORK APPLIED TO THE USE OF CHILD POTTIES

Levels	Contextual factors	Psychosocial factors	Technology factors
Societal/Structural	Rainy and dry seasons and their effect on child defecation habits. Type of soil	Leadership / advocacy for use of child potties	Manufacturing capacity for child potties; national policies re: child defecation
Community	Access to latrines, sewers, potable water in the community	Shared values, collective efficacy for community-wide use of potties	Availability and distribution of child potties in the community
Interpersonal/Household	Household members and division of labour related to child-care and disposal of child faeces; condition of the latrine	Injunctive norms, descriptive norms for child potty use; responsibility for cleaning potty at household level	Sharing of access to product, modelling/demonstration of use of product
Individual	Wealth, education and employment of caretaker of child; age and developmental stage of child and their effect on potty use	Self-efficacy for potty training of child and correct use of potty; knowledge of diarrheal diseases; disgust and perceived threat related to child faeces in the household or courtyard	Strengths and weaknesses of child potties for end-users; adaptation of design to respond to consumer preferences
Habitual	Favourable environment for formation potty using habit, and regular emptying of potty; defecation away from home and its impact on habit formation	Existing habits for disposal of child faeces; outcome expectations: What is the expected outcome of consistent potty use by the child	Ease / Effectiveness of routine use of child potties, need for potty training; visible potty as cue to action for potty use

Source: Table 6 in Dreibelbis et al. 2013.

Summary of Other Considerations: Many studies only report standard indicators on safe and improved disposal, and have not looked for associations or factors that influence this behavior. Research has not routinely included information on the child's ambulatory ability or investigated how this may influence safe and improved stool disposal. What children and caregivers do at different stages of mobility needs to be further investigated. Few studies have investigated caregiver's perceptions or attitudinal factors towards child feces disposal. In cases where this is explored, household or child demographic

characteristics are utilized as a means to determine how, e.g., age, is related to safe and improved feces disposal. Given evidence is relatively nascent there is opportunity to explore the various determinants of safe and improved stool disposal.

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ANNEX A: Possible Qualitative Interviews Using Narratives

In-depth narratives will provide examples of lived experiences regarding the management of child feces, and to compare and contrast the behavior of those who safely dispose of children's feces and those who do not. Depending on the variety of the population, it is suggested that interviews with around 12 caregivers of children should be conducted. Factors for inclusion should be determined prior to narrative collection. To be eligible for inclusion factors such as if the caregiver lives in a household that has a latrine, whether or not the caregivers child is ambulatory, or whether or not safe and improved stool disposal is practiced could be considered. In addition, there may be merit including a caregiver with two children under the age of three to explore how practices may be different for each child (or increasing the sample of interviews to see if there are differences according to the age of the child age). While the target group is children under the age of three, there may be merit in expanding the age range to include children who are older, if this is a desirable program objective. If the interview is to take place in the caregiver's home, then an observation can also be used to complement data from the interview.

1. NARRATIVE INTERVIEW OUTLINE

Instructions to the interviewer: First begin by an introduction. Then ask the informant to first describe in detail what happened the last time the child pooped, from the very first step (e.g., signs that the child was going to poop) to the final step, possibly where the poop was disposed of or how the caregiver cleaned the child's bottom or her hands). The behavior will consist of multiple steps/actions—be sure to probe for all actions that may have occurred. Try to elicit information on all steps, what prompted each action to be taken, and the rationale for each action (or inaction). Additionally, try to elicit information about who was involved in deciding and guiding each step in case decisions were made that deviated from the caregiver being interviewed. Try to construct a thorough, chronological account of the feces disposal by prompting the informant to respond to the questions listed below. Of particular interest is identifying how informants choose to handle, transport and finally dispose of the feces, barriers they may encounter regarding safe and improved disposal, and how they were able to overcome (or not) those obstacles. In addition, a key element is to understand if the behavior reported for the last time deviates from what the caregiver normally does, or by other factors such as by the time of day.

Begin the interview with a very open question that encourages the informant to talk generally about the child Then, use a question to tell the story of the last time the youngest child pooped

then follow up with probes such as those listed below to elicit any important information that was not spontaneously mentioned by the informant. It may be useful to have the informant first describe the behavior, and then start again trying to pull out details of each step.

2. INTRODUCTION

- Thank informant for participating
- Explain the purpose of the interview
- Obtain informed consent

Sample text for interview with caregiver of child <5:
"Thank you very much for talking with me today. I am interested in learning more about how families dispose of children's poop in your community. When I say children, I am referring to young children under the age of three. Your experience will help us understand how we can help families to better look after their children.
You have been selected for this interview because you have a child under the age of three. I would like you first to tell me about your youngest child, and what happens when your child goes poop and everything that you, or others, may do.
There are no right or wrong answers, and you should feel free to say anything you like. Everything that we discuss today will be kept confidential, and will not be discussed with anyone outside of the study. If you do not want to answer questions or do not want to continue the interview, we can end the interview at any time."

3. CHILD DAILY ACTIVITIES AND DEMOGRAPHICS

Interviewer to say: "Describe to me a typical day for [name], beginning with what happens when [name] wakes up in the morning, and then what happens in the afternoon, in evening time and through the night? I am interested to know what types of activities [name] does, what [name] eats and what clothes [name] wears."
Try to elicit information that answers the following questions by using follow up probes;

Daily activities and demographics:

- Is [name] walking? Is [name] crawling? Does [name] spend a lot of time on the ground?
- Can [name] dress him/or herself?
- Where does [name] spend most of his/her time? On the ground outside or inside the house? Carried by the caregiver?
- What type of food is [name] eating? Is name breast-feeding? Is [name] eating solid foods?
- What does [name] wear for under-garments? Are nappies or diapers used? What kind of diapers?

4. CHILD FECES MANAGEMENT

Interviewer to say: "Tell me about the last time [name] went poop, beginning with when you first noticed this, and everything and anything you did in response to this. Please take a few minutes to think about this, and take your time as you describe this to me."

Try to elicit information that answers the following questions. Broad probes include:

- "and then what happened?"
- "what did you do next?"
- "why did you do this?"
- "why didn't you do this?"

Specific probes are as follows:

Identification of Feces

- When did you notice the child had pooped?
- Where had the child pooped? (Directly on the ground in or outside the house? In a nappy or diaper? In a latrine? In multiple places?)
- Who noticed that the child had pooped? (The caregiver, another sibling, or did the child indicate this?)
- How long was after the child defecated before any action (or inaction) was taken to remove the feces?
- Was the poop solid or lose? Was it on the child's clothes or other surfaces? If so, where?

Feces Management

- Did you move the feces, or handle the feces? In what way? Or did someone else do this — what did they do?
- With what was the feces handled with? (Probe: bare hands, paper, leaves spade?)
- What places was the poop disposed? (Probe: latrine, garbage, buried, thrown outside, left there [not disposed of])
- Were any other actions taken to get rid of the feces? (probe for all steps/actions, i.e.,: washing the child, washing the clothes etc.)?
- Who was involved in these steps? (Probe: anyone other than the caregiver?)

Handwashing and cleaning

- Was the child's bottom cleaned? (Probe: Did the child clean him or herself [i.e., rubbing his/her bottom on the ground)? How was the child's bottom cleaned? (Probe: was water, soap, or/and cloths?)

- Explain how/why each cleaning step was taken. (Probe: and then what happened? Why did you next?)
- Was water obtained to clean the child? From where was water obtained to clean the child?
- Where was the water disposed of?
- Where were any soiled materials (e.g., cloths) disposed of? How were cloths cleaned?
- Were the caregivers hands washed? If not why? What were the hands washed with? When were the hands washed?
- Was anything done to wash the child's hands? If not, why? What was done? What was used to wash the hands? When were the hands washed?
- Was the spade, tin, washed afterwards? With what?

Interviewer to say: "Tell me, were any other actions/steps considered that last time your child defecated, to dispose of the stool? If so, why were they not taken?"

Interviewer to say: "Did you experience any obstacles / delays when you disposed of the your child's stool? Can you explain what these were?"

- Probe for time or logistical barriers, such as convenience, perceived safety or harmfulness of the stool, circumstances of the season or time of day etc

Interviewer to say: "How were these barriers overcome (or not)?"

Interviewer to say: "If it had been possible, would you have disposed of the feces differently? Why? How so?"

***Interviewer instructions*:** For the following question, the interview must frame this according to the behavior that was described:

For children that used a latrine:

Interviewer to say: "Can you please explain me the reasons why your child used the latrine? What might prevent you from letting your child use the latrine each time he or she needs to defecate? What motivates you to encourage this behavior?"

For children that did not use a latrine:

Interviewer to say: "Can you please explain me the reasons why your child did not use the latrine? What are the key reasons prevention you from letting your child use the latrine each time he or she needs to defecate? What things might encourage you to change this?"

Disposal of the feces in a latrine:

Interviewer to say: "Why was the poop disposed of in the latrine? Why do you believe this is important? What might prevent you from doing this all the time?"

Interviewer to say: "Why wasn't the poop disposed of in the latrine? What are the key barriers to this? What would encourage you to dispose of your child poop into the latrine in future?"

5. GENERAL QUESTIONS

- "Thank you for telling me about what happened that last time your child went poop. Can you tell me about any other times or situations when your actions may be different from what you just described and why?"

Try to elicit information that answers the following questions by using follow up probes (15-20):

- Are there certain times of the day when the action is different? (Probe: during certain seasons? When one is away from the home? Or if another caregiver is present?)
- How the actions are different in terms of the disposal, handing and cleaning of the child.
- Prompt the caregiver to explain why the actions different.

6. INTERVIEWER CHECKLIST

Interviewer instructions: This checklist can be used to ensure that the main topics and talking points were covered at the end of the interview. If you feel that certain information has not been captured, feel free to repeat questions again to the interviewee.

At the end of the interview, be sure that you can identify (interviewer, check as necessary):

- A profile of the child, whether or not he can walk, where he/she spend most of his time, what types of food the child eats, and what types of undergarments are worn.
- All action/steps that were taken to dispose of the feces, the point at which they were taken, and why these actions were taken
- Who was involved in these actions/steps and the decisions
- Any barriers or delays that were encountered
- How these barriers were overcome (or why they were not)
- How this actions/steps may vary or how typical this behavior is
- What other action/steps may be taken and why these are taken
- What are the barriers and motivators of safe and improved stool disposal?

ANNEX B: Focus Group Discussions

Focus group discussions (FGDs) can be conducted with caregivers of children under three in order to explore perceptions about the frequency and severity of disposing of feces safely in the community, common behavioral practices regarding the disposal of children's feces and how this may vary according to the child's demographics, places where children's feces is disposed of, and perceived barriers to safe disposal of children feces. The FGD can be used to further develop and refine findings that emerge from the illness narratives. FGDs could be conducted for a research study, depending on the size, cultural heterogeneity, and prevalence of unsafe children's feces disposal in each of the study communities. Ideally enough focus groups should be run until a point of saturation is achieved (i.e., no new information is found, and the researcher will end up hearing roughly the same things from a new group that has been heard in other groups. It could be that two FGD per target audience is sufficient. For example, audience 1 may be with caregivers that practice safe stool disposal, and audience 2 with caregivers that do not practice safe stool disposal. In this example, four FGD may be sufficient. In the context of child feces management, FGDs should be conducted with caregivers of children under the age of three. FGDs could also consider including only participants that have access to a latrine, and disaggregating groups according to participants that have ambulatory versus non-ambulatory children, and also consider including caregivers who consistently dispose of stool safely as a means to investigate positive deviants.

1. INTRODUCTION

- Thank informants for participating
- Explain the purpose of the group discussion
- Obtain informed consent from individuals in the group

The moderator should first introduce him or herself and indicate why the meeting is taking place. Speak clearly, using the local language. For example:

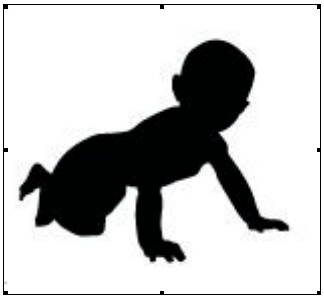
"Thank you very much for talking with us today. We are interested in learning more about how families handle children's poop in your community, and your views will help us understand how we can help families care for their children. We are going to ask your ideas and opinions about how children's poop is handled and disposed of, and we want you to let us know what you think. There are no right or wrong answers, and you should feel free to say anything you like. Everything that we discuss today will be kept confidential, and will not be discussed with anyone outside of the study team. You do not have to answer any questions that you don't want to, but we would like to hear everyone's thoughts. Does anyone have any questions?"

2. SETTING THE TARGET GROUP

Interviewer Notes: "The focus on safe and improved stool disposal includes children under the age of three. For the purpose of ensuring that the FGD participants provide their opinions of children aged between 0-36 months, it may be useful to have two or three photos or drawings of children in this age range. It might also help to give the children in the photos/drawings a name so that if a participant wants to distinguish between a toddler and a newborn, then they can refer to the child in the photo. These pictures could be further illustrative to show a child that is unable to walk or crawl, a child that is crawling, and one that is walking."

The moderator should set reference to the target groups, namely what is meant by a baby or child or young child. For example:

"I am now going to focus the discussion on children, and this refers to children under the age of three. I would like for the group to keep this age in mind when I mention 'children.' To remind us what we mean when we say 'children,' I have some photos for us to look at. Photo 1 here is Dayo, and she is 4 months old. Photo 2 is Goodluck, and he is 9 months old, and finally we have Precious, she is two and a half. Lets take a look at some pictures, which show Dayo, Goodluck and Precious."

		
Dayo, four months	**Goodluck, 9 months**	**Precious, 2 years**

3. WARM-UP: THREE-PILE SORTING[1] (15 mins)

Notes: This activity will indicate what participants believe is good bad hygiene practice as it relates to safe and improved stool disposal, and what they decide is in-between.

[1] This method derives from the Promotion of the Role of Women in Water and Environmental Sanitation Services (PROWWESS) participatory approach (Srinivasan 1990).

Interviewer instructions*: Hand out the cards. Ask participants to pass them around, and look at them. Once everyone has had a chance to look at the cards, collect them all and put them in the middle of the circle, each one face up.*

Interviewer to say: Now that you have had a chance to look at these pictures, can you tell me, do all of these pictures show familiar scenes? Which ones are not familiar? Why are they not familiar? Which of these practices are good or bad, and why?

Interviewer to say: I would like you to organize the cards into three categories; good, bad or in between. I want you as a group to decide which category each card fits into: good, bad, or in-between. (Not to interviewer: they can use the in-between option if the pictures are unclear, or if the group has not agreed whether the practice is good or bad).

Interviewer to say: Can you tell me which cards are in these categories and why?

EXAMPLE ILLUSTRATIONS

BOX A1: THREE PILE SORTING: WHAT IS IT, WHAT WILL BE NEEDED?

Participants should be given a set of drawings showing situations related to children's defecation practices, transportation of the feces, handling of the feces, disposal of water or materials used to clean the child, personal hygiene, etc. Participants should then be asked to discuss each drawing as a group and to arrive at a consensus as to whether it is good, bad, or in-between, and to explain why they think this. The purpose of this technique is to break down barriers and establish good communication. For this reason, it is a good tool to use at the beginning of fieldwork. This method also helps to introduce sensitive/personal topics for discussion such as defecation practices and handling of feces at the early stages of enquiry.

Materials that will be needed: *A set of twelve to sixteen cards (pictures mounted on thick paper or card board) showing activities related to child feces management and water-related hygiene (i.e., handwashing, disposal of water) should be used. The drawings can be drawn by local artists or adapted from health-related illustrated handbooks. It is important that the cards show local settings and practices. Each of the situations depicted should include at least one activity and/or feature that relates to the following behavior:*[2]

Excreta disposal:

- *Children's excreta disposal, handling and transportation*
- *Location of defecation sites*
- *Transportation of children's feces*
- *Use of cleaning materials*

Water uses:

- *Washing of children's feces*
- *Disposal and reuse of dirty water*
- *Bathing and washing children after defecation*
- *Handwashing at critical times (after cleaning children's bottoms, after handling children's feces, after defecation)*
- *Washing of clothes or other materials to remove feces*

The exact content of the drawings should depend on hygiene practices related to the management of child's feces. Label each card with a number so that you can refer to the number when writing down people's comments.

If it is useful (e.g., to enable participants to talk more freely, or to find opinions of different sections of the study population) divide participants into smaller groups, for example, according to gender or age.

[2] Adopted from the Five Clusters of Hygiene Behavior, Environmental Health Programme, LSHTM. Referenced in: Almedom, A.M. 1996. "Recent Developments in Hygiene Behavior Research: An Emphasis on Methods and Meaning. *Tropical Medicine and International Health* 1:171-182.

4. WHAT IS DIRTY?

Interviewer Notes: *Several barriers exist that limit the handwashing, primarily because of a misconception of what is considered dirty and what is not. In addition, feces from smaller children are not considered dirty or harmful, and this is also influenced by the child's age such that feces from infants or smaller children may be considered less dirty or less harmful, perhaps because a young child's feces smells less, is smaller, and may be less likely to have food residuals. This section is designed to investigate this further.*

Interviewer to say: What are examples of dirty things in your household? Why do you believe these things are dirty?

Note to interviewer: note take writes up all the places that children go to defecate.

Note to interviewer: Interviewer summarize what is on the "dirty" list.

Interviewer to say: We have a good list of things that you consider dirty, such as [interviewer summarize list]. Now what I would like to know, do you think any of these might be harmful to you health?

Interviewer to say: Are some things more harmful than others? (Probe: what about children's feces? What about feces from a baby compared to feces from a two year old child? What about adult feces?)

5. LOCATION/PLACE OF THE DEFECATION SITE

Interviewer Notes: *Children may defecate either in the soil inside the household, as well as in diapers, potties, latrines, and the backyard. Outside the household, they may defecate in bushes in the open field, as well as directly into rivers. Understanding where a child typically defecates is an important step to provide a landscape of common behaviors, and to illustrate practices relevant for a particular study site and according to a child's age or ambulatory status. Children may also be less likely to use latrines because they are perceived as unsafe.*

Interviewer to say: Let's talk about all the places that young children defecate. Where or what sorts of places do young children typically go to defecate? (Probe: is there anything else that should be added).

Note to interviewer: note taker writes up all the places that children go to defecate.

Note to interviewer: Interviewer summarize what is on the "defecation site" list.

Interviewer to say: We have generated a nice list of places or locations that young children go to defecate, such as [summarize what is on list]. What would you say are the most common places children defecate? What are less common places? Why would you say this is?

Interviewer to say: Are there certain factors that influence where a child defecates? What are these factors (Probe if necessary: age of a child, access to a latrine or potty, type of caregiver).

Interviewer to say: What do you think are the best places or locations for a child to defecate? Why?

Interviewer to say: Might the defecation sites vary according to things such as a child's age, or whether or not they can walk or crawl? How might they vary? What other things might influence this?

Interviewer to say: What do you think are the worse places or locations for a child to defecate? Why?

Interviewer to say: I am interested to know why think some children use a latrine while others do not. Let's start with why might children use a latrine? Why might children not use a latrine?

Interviewer to say: When might children be old enough to use a latrine all the time? What might be some of the barriers to this?

Interviewer to say: What assistance might be needed to help a child to use a latrine? Who might provide this assistance?

Interviewer to say: Are some of these sites more difficult to clean up then others? Can you tell me why (Probe for the list of defecation sites).

Interviewer to say: Can you tell me anything about defecation places or sites that are easier to clean up? Why are these easy?

6. DISPOSAL AND HANDLING OF FECES

Interviewer Notes*: The immediate removal of feces from the household environment and its disposal in more appropriate places (disposed in latrines) is important and understudied. The final destination of children's feces, irrespective of the initial defecation site, may include in the water — discarded after washing diapers; removed or buried from the soil; discharged in latrines, in the outside field or in rivers; or eaten by dogs. Evidence suggests that up to thirty percent of feces are not discarded or removed after being deposited in their original defecation site. Information on the sanitary disposal of feces at the household level can inform interventions that have a high potential of reducing diarrheal diseases in children.*

Interviewer to say: We talked earlier about where children defecate. Now I would like to know a little more about what is done with the child's feces? (Prompt: is it put anywhere? Where is it disposed of?).

Note to interviewer: note taker writes up all the places where feces is disposed of.

Interviewer to say: Are there situations where nothing is done with the feces? Why do you think feces is left in the open? How do you feel about this?

Interviewer to say: You have mentioned a number of places where feces is disposed of [*interviewer summarize list*]. Are there any other places?

Interviewer to say: What places are most common to dispose of the feces? Why?

Interviewer to say: What places are the safest way to dispose of the feces? Why?

Interviewer to say: Are there certain defecation places that make it more difficult for caretakers to dispose of the feces? Why these places?

Interviewer to say: What about people who have a latrine on their compound, why might they not use this to dispose of the children's feces? (Probe: time of day, security, distance, convenience, cleanliness and smell).

Interviewer to say: What about how the child's feces is transported. What are the typical ways in which young children's feces is transported and by whom? Why is this common? (Probe: hands, spade, paper, cloth, leaves?)

Interviewer to say: How might the disposal of child's feces vary within a family? (Probe: for example, between siblings or between different caregivers). Why?

Interviewer to say: How might the disposal of child's feces vary over time (Probe: by seasons)? Why?

Interviewer to say: Who usually disposes of the child's poop in a household? What other sorts of people might help or take responsibility for this?

7. HANDWASHING AND CLEANING

Interviewer Notes*: Three hygiene behaviors have been described as associated with children's defecation practices: handwashing (of the child's hand), cleaning/washing of the child's bottom, and handwashing of the mother/care provider after cleaning the child. Handwashing can interrupt transmission from contaminated hands into food, water or directly into the mouth of the susceptible host. Caregivers may be more likely to wash their infants hands after defecation than when they are toddlers. Rarely is this done with soap, an agent considered not appropriate for children in some cultures. Furthermore, wastewater from washing soiled diapers may contaminate the household soil, although very few studies describe this practice. When dirty cloth diapers are washed, children's feces may be transferred to the washing water and discarded at the site where the dirty water is discharged, most frequently in the soil of the household or a nearby area. This is important to explore in guidelines.*

Interviewer to say: After a child defecates, what are the ways that children's bottoms are cleaned after defecation? What materials might be used to clean their bottom after they defecate?

Interviewer instructions*: note taker writes up all the things that are done to clean bottoms.*

Interviewer to say: What materials might be used to clean their bottom after they defecate?

Interviewer instructions*: note taker writes up all the materials that may be used.*

Interviewer instructions*: interviewer summarize what is on the list.*

Interviewer to say: Of this, what do you think are the most common things that are done to clean a child after defecation?

Interviewer to say: Of this, what do you think is the easiest way to clean a child after defecation?

Interviewer to say: Of this, what do you think is the safest way to clean a child after defecation?

Interviewer to say: Where might water that is used to wash the soiled clothes, rags or potties be disposed of? What about any cloths or rags — where might these be disposed of?

Interviewer to say: can you describe where and how people typically wash their hands? (Do not prompt for soap).

Interviewer to say: what about young children's hands, are these washed in a similar manner and at similar times as adults? Why or why not? (Do not prompt for soap).

Interviewer to say: can you tell me about all the events that occur in a day when it necessary for family members to wash hands? (Do not probe other than state, anything else).

Interviewer to say: Thanks you have listed a number of events (*interviewer read out list*). Are family members more likely to always wash their hands before or after certain events? Which ones?

Interviewer to say: Why do you think it is important to always wash hands before or after certain events?

Interviewer to say: When is it a good idea to use soap when washing hands? Are there certain events where using soap is particularly important?

Interviewer to say: What about washing hands after cleaning a young child's bottom, or transporting feces? Is this necessary? Why? Is it important to use soap? Why or why not?

Interviewer to say: Are there particular events where children's hands should always be washed? (Probe: What about washing children's hands after they defecate or before they? Is this important?)

Interviewer to say: Do you feel that washing a young child's hands with soap can be dangerous? Why or why not?

Interviewer to say: If a caregiver has used water to clean a child's bottom, do you feel it is necessary for the caregiver to then wash her hands again? Why? Do you feel that washing a young child's hands with soap can be dangerous? Why or why not?

8. PERCEPTIONS OF SEVERITY OF CHILDHOOD ILLNESSES

Interviewer to say: What sorts of illnesses do young children in your community experience?

Interviewer to say: Which childhood illnesses are the most important / most common?

Interviewer to say: Which of these illnesses are the most common in your community?

Interviewer to say: What things can cause diarrhea in young children?

Interviewer to say: Can diarrhea be dangerous in young children? Can it be fatal in young children?

Interviewer to say: How can diarrhea be prevented in young children?

9. FACTORS INFLUENCING THE CHILD FECES MANAGEMENT

***Interviewer Notes**:* The sanitary disposal of human feces, particularly those of children, has been less studied. Little is known about current practices, their determinants, and the feasibility to change them.

Interviewer to say: We have discussed a number of different factors related to disposal of children's stool. To wrap up this discussion I would like to ask you a few more things about things that may act as barriers or motivators of this behavior. Feel free to speak openly.

- What things might influence how a child's feces is disposed of? (Probe: age, location of the child, access to a latrine).
- What about in households that have a latrine? What are common obstacles that prohibit caregivers from disposing of a child's feces into a latrine?
- Which of these can obstacles be overcome? How?
- Which cannot? Why?
- What sorts of things would motivate caregivers to dispose of a child's feces into a latrine?
- Are there certain factors that influence whether or not a child's feces is disposed of into a latrine? (Probe: times of the year, or certain age groups)
- In this community, what would be an ideal way to dispose of children's poop? What factors are prohibiting this? What things could change this?

10. INTERVIEWER CHECKLIST

Interviewer Instructions: This checklist can be used to ensure that the main topics and talking points were covered at the end of the interview. If you feel that certain information has not been captured, feel free to repeat questions again to the focus group discussants.

At the end of the focus group discussion, be sure that you can identify (interviewer to tick accordingly):

- Common patterns of disposal and transport of children's feces, and cleaning and handwashing
- Who is involved in disposing of the feces
- Common barriers associated with the safe and improved disposal of children's feces

- Barriers to disposing of feces into a latrine and using a latrine

  How barriers can be overcome (or not)
- Beliefs about the severity of childhood illnesses / perceptions of severity of diarrhea

ANNEX C: Possible Quantitative Surveys

The following modules provide example questions that address children feces management and factors that may influence these behaviors. These modules can be used to assist researchers and project managers during the questionnaire development stage of the research study. These modules can be adapted according to the research objectives and interests. Additional comments and other possible modes of measurement are provided using footnotes.

The specific research objectives that can be answered by using each module are presented here:

Module 1 is an example that can be used for household identification, including visit details, location of the household and any comments. It can be updated by the research agency according to geographical areas being used in the survey. This module will provide information on:

- What were refusal rates?
- What percentage of questionnaires were partially completed?

Module 2 is a household roster to determine the age of all household members and to identify the age appropriate children in the household for interview and their respective caregivers. Module 2 includes standard household roster type questions. This will be useful if an objective of the research is to interview all children in the household aged 0-36 months. Questions answered by Module 2 include:

- Who and how many children in the household are aged between 0-36 months and eligible for interview?
- What is the caregiver of each child in the household aged between 0-36 months?

Module 3 is administered to the female household and addresses the type of latrine owned, frequency of use and by which age groups, the presence of child potties, and tools to dispose of child's feces

- What are the rates of households with improved, shared, non-improved facility or no facility?
    - How frequently are latrines used by respondents?
    - What percentage of respondents use an improved versus unimproved latrine the last time they defecated
      at home?
- Which age group in the household uses the latrine? How frequently do different age groups defecate in the open?
- Does the household own a child potty? Is it easily accessible and in clean condition?
- Where is child feces usually disposed of?

Module 4 is administered to each caregiver of a child between the ages of 0-36 months. This section includes an example of verbal consent. Child demographic information is collected,

and a series of questions to ascertain information on what happened the last time the child defecated, including the location, what was done with the stools, how it was disposed of, and how it was handled. Additional questions are included on handwashing and cleaning of the child's bottom. Questions are also included to address the frequency of behavior as it relates to child feces management as a means to assess whether or not what happened the last time a child defecated is typical or reflective of the caregivers normal behavior. Observations are also conducted to observe if the child is wearing nappy and if his or her clothes are soiled.

- How/where was the feces handled, transported and finally disposed of?
- How long after the child defecated was the feces disposed of?
- How was the child cleaned?
- Were hands washed with soap?
- How frequent is child's feces disposed in a latrine?
- Are handwashing stations available? Is soap present at handwashing facilities?
- Is the latrine functioning?
- Is there ventilation?
- Is there a septic tank, and is it properly covered?

Module 5 is administered to caregivers of a child between 0-36 months. This section gathers information on the caregiver's knowledge as well as a variety of perceptions and beliefs related to child feces management such as the availability and affordability of nappies, awareness of child potties and tools to transport feces, their perceptions regarding the harmfulness of children's feces.

Sample scaled items are also provided, which address social norms and other behavioral factors, and are guided in this document by the SaniFOAM framework. Specifically they include questions to assess information on the opportunity, ability and motivation of respondents to engage in the desired behavior and are unique from other measures in that they include scaled questions. These scaled questions can be reviewed by the research agency to determine which ones may be most appropriate to include or modified according to culturally relevant response options. The results of these questions can then be presented according to caregivers the dispose of children's feces safely versus those that do not. Research questions answered by this module include:

- To what do opportunity, ability, and motivation determine latrine safe stool disposal?
- How available are diapers? To what extent are they perceived to be affordable?
- To what extent do respondents believe the children's feces is harmful?

Module 6 includes questions on respondent characteristics and background information, including questions on gender, education, marital status, as well as income and expenditure. Research questions should be administered to all respondents. These questions should be administered to the main household respondent. They may also be modified to address questions that are administered to caregivers and thus linked to module 5. Questions include ascertaining information on the following:

- What percentage of respondents are male?
- What are the levels of respondent education and what percentage of respondents are literate?

- What proportion of respondents are married?
- What is the average age of respondents?
- What is the median household expenditure?
- What are common household expenditures (food, education, health etc?)

1. HOUSEHOLD IDENTIFICATION

Questionnaire ID Interviewer-State-LGA-Locality-SA-HH [__|__]-[__|__|__]-[__|__|__]-[__|__|__|__]-[__|__|__|__]-[__|__|__] [3]		
1.1. Today's date DD-MM-YYYY: [__|__]-[__|__]-[_2_|_0_|_1_|_2_]		
1.2. Interviewer's name [_____]	Interviewer ID	1.2a. Interviewer code [__|__]
1.3. State [_____]	State	1.3a. State code [__|__|__]
1.4. Local Government Area [_____]	Local Government Area (LGA)	1.4a. Local Government Area code [__|__|__|
1.5. Locality [_____]	Locality	1.5a. Locality code [__|__|__|__]
1.6. Supervisory Area (SA) [_____]	Supervisory Area (SA)	1.6a. SA code [__|__|__|__]
1.7. Household Map ID[b] [__|__|__]	Household (HH)	1.7a. Household ID [__|__|__]

[a] This section should be updated based on the administrative divisions of your survey.

[b] This is relevant if a household census is being conducted at the village level.

1.30 Visit Details	**Visit 1**	**Visit 2**	**Visit 3**
Date	[__|__]-[__|__]-[_1_|_2_]	[__|__]-[__|__]-[_1_|_2_]	[__|__]-[__|__]-[_1_|_2_]
Result 1 = Completed full interview 2 = Interview interrupted 3 = Eligible respondent not available 4 = Entire household absent 5 = Dwelling abandoned 6 = Refused ***(Go to 1.31)*** 96 = Other *(specify)* [_____]	[____]	[____]	[____]
Time started ***(use 24hr clock N/A = 00:00)***	[___|___:___|___]	[___|___:___|___]	[___|___:___|___]
Time completed	[___|___:___|___]	[___|___:___|___]	[___|___:___|___]
1.31. Comments:			

	Supervisor: Name ID	Entered by: Name ID
Name	[_____] [___|___]	[_____] [___|___]
Date	[___|___]-[___|___]-[_1_|_4_]	[___|___]-[___|___]-[_1_|_4_]

[3] This is the household identification. Ideally this identification code should appear on each page of your questionnaire, and positioned in the header section. This is useful in case pages become detached from your questionnaire in the field, or if different modules are administered to different respondents the modules can easily be linked to the household from which information was gathered. The identification codes will also help to facilitate data entry.

2. HOUSEHOLD MEMBER INFORMATION[4]

COMPLETE THIS SECTION BY INTERVIEWING THE HEAD OF HOUSEHOLD OR HOUSEHOLD REPRESENTATIVE. VERIFY INFORMATION WITH MOTHERS OR CAREGIVERS.

INTERVIEWER TO SAY: "I am now going to ask you some questions about the members of your household"

1.1 ID	**1.2 NAMES OF HH MEMBERS**	**1.3 SEX**	**1.4 AGE** Enter ages for all household members	**1.5 CAREGIVER'S ID** Only enter caregiver's ID for anyone less than 3 years
	Record first name only	*1 = Male* *0 = Female*	*Enter '00' for children less than 1 year of age.* *Enter '99' if don't know.* *If age 3+, SKIP → Next HH Member*	
01	[_____]	[___]	[___|___]	[___|___]
02	[_____]	[___]	[___|___]	[___|___]
03	[_____]	[___]	[___|___]	[___|___]
04	[_____]	[___]	[___|___]	[___|___]
05	[_____]	[___]	[___|___]	[___|___]
06	[_____]	[___]	[___|___]	[___|___]
07	[_____]	[___]	[___|___]	[___|___]
08	[_____]	[___]	[___|___]	[___|___]
09	[_____]	[___]	[___|___]	[___|___]
10	[_____]	[___]	[___|___]	[___|___]

[4] If possible a household roster to identify all eligible children under the age of three in the household. If there is interest to increase the age range (e.g., children under 5) then questions 1.5 can be modified to increase the age of interest.

3. LATRINE OWNERSHIP

COMPLETE THIS SECTION BY INTERVIEWING THE FEMALE HOUSEHOLD HEAD OR REPRESENTATIVE

INTERVIEWER TO SAY:

"I am now going to ask you some questions about whether or not your household has a latrine."

2.1. Does this household own a latrine?

1 = Yes
0 = No

2.2. What kind of toilet facilities does your household use most often? ***(Circle <u>one</u> response.) Use prompt card)*** [5]

Flush or pour flush toilet
1 = Flush to piped sewer system
2 = Flush to septic tank
3 = Flush to pit latrine
4 = Flush to somewhere else
5 = Flush, don't know where
Pit latrine
6 = Ventilated improved pit latrine
7 = Pit latrine with slab
8 = Pit latrine without slab/open pit
9 = Composting toilet
10 = Bucket toilet
11 = Hanging toilet/hanging latrine
12 = No facility/bush/field **SKIP to Question 2.6**

96 = Other (*specify*) [_____]

2.3. Is this toilet shared with other households?

1 = Yes
0 = No

2.4. How many households use this toilet facility? [___|___] (Record "98" for don't know)

2.5. In the last two weeks, how frequently have adults of this household defecated in the open? Prompt: how frequently have adults of this household defecated somewhere other than a toilet/latrine?

1= Daily

[5] The response options to this question should be updated according to your countries latrine types. Ideally a prompt card should be use to help the respondent identify the type of latrine present in the household. Question 2.2-2.5 are standard DHS questions and are used as indicators for the UNCEF/WHO Joint monitoring program latrine coverage estimates. It is suggested that these questions be maintained.

2= Occasionally
3= Never

2.6. In the last two weeks, how frequently have children in this household aged 3-7 defecated in the open? Prompt: how frequently have children in this household aged 3-7 defecated somewhere other than a toilet/latrine?

1= Daily
2= Occasionally
3= Never

2.7. In the last two weeks, how frequently have children in this household that are younger than three defecate in the open? Prompt: how frequently have children in this household younger than three defecated somewhere other than a toilet/latrine?

1= Daily
2= Occasionally
3= Never

Child potties

2.8. Does your household have a child potty?

1= Yes
0= No
98= Don't know

2.9. Could you please take me to where the potty is?

1= Potty observed
0= Potty not observed

2.9a. **INTERVIEWER OBSERVATION:** Is the potty in a place that is easily accessible to a child? Interviewer: Probe for reasons as to why the potty is located where it is.

1= Yes [explain ;_____]
0= No [explain;_____]

2.9b. **Where is the potty located? Specify [_____]**

2.10. Where do you usually dispose of feces from the potty?

1= Put/rinsed into toilet or latrine
2 = Put/rinsed into drain or ditch
3 = Thrown into garage
4 = Buried

96 = Other (*specify*) [_____]

Tools for feces disposal

2.11. Does your household have a dedicated tool to clean up feces around your household?

1= Yes
0= No

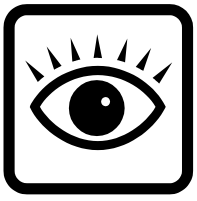
2.12. What kind of tool do you primarily use to clean up feces?

1= Spade
2= Can
3=Spoon
4=Leafs
5=Paper
98=Other [Specify: _____]

2.13. How often do you use the [TOOL] to clean up feces? Would you say you never, rarely, sometimes, most of the time, or always use this tool?

1=Never
2=Rarely
2=Sometimes
3=Most of the time
5=Always

2.14 Can you please take me to see the tool?



1=Produces tool
0=Cannot produce tool

2.15. OBSERVATION OF TOOL (Please check all that apply)

1= Visible feces on the tool
2 = Dry
3 = Broken and needs repair
4 = Easy accessible to the child
5 = Easy accessible to the adult
6=Signs that the tools is not used
96 = Other (*specify*) [_____]

2.16. When this tool is used, where do you usually dispose of feces?

1= Put/rinsed into toilet or latrine
2 = Put/rinsed into drain or ditch
3 = Thrown into garage
4 = Buried
96 = Other (*specify*) [_____]

4. MANAGEMENT OF CHILD FECES [6]

THIS SECTION SHOULD BE COMPLETED FOR EACH CHILD UNDER 3. REFER TO THE SECTION 1: HOUSEHOLD MEMBER INFORMATION FOR THE ELIGIBLE CHILDREN AND CAREGIVER TO BE INTERVIEWED.

VERBAL CONSENT FORM[7]

I certify that I have followed the study information guidelines and read these to the participant, and that he/she understands the nature and the purpose of the study and consents to the participation in the study. He/she has been given opportunity to ask questions which have been answered satisfactorily.

☐ Interviewer must tick to denote the consent process has been completed and the respondent agrees to be interviewed.

INTERVIEWER INSTRUCTIONS:
COMPLETE QUESTIONS 3.1A TO 3.2C BY REFERRING TO THE LIST OF HOUSEHOLD MEMBERS IN SECTION 1.[8]

3.1a. Caregiver's name [_____]	3.1b. Caregiver's ID [___][___]	3.1c. Caregiver's age [___][___]
3.2a. Child's name [_____]	3.2b. Child's ID [___][___]	3.2c. Child's age [___][___]

INTERVIEWER TO SAY:
"I am now going to ask you some questions about your child and how you may dispose of young children's stool in your household. When I talk about passing stools, I am referring to when the child shits, poops, defecates."

3.3. What is your relationship to the child?

1= Mother
2 = Grandmother
3= Aunt
4= Other [Specify: _____]

3.4. Do you have any children under the age of three?[1]

1 = Yes
0 = No SKIP to end of module

[6] If a household roster is not used, and a decision is made to administer the questions for the youngest child in the household, then the following questions must be included to identify the age of the youngest child.
[7] Given that different caregivers are being interviewed, verbal consent for each cagegiver may be necessary.
[8] These questions are necessary so that information regarding the child and caregiver can be linked at the analysis stage

3.5. What is the name of your youngest child living with you?
(Interviewer: Record name) [_____]

3.6. How old is this child? (Interviewer: Record in months) [___|___] (Record "98" for don't know)

Child demographic information

3.7. Is [NAME] a girl or a boy?

1=Girl
2= Boy

3.8. How many months old is [NAME]? [___|___] months

3.9. Is [NAME] currently breastfeeding?

1 = Yes
0 = No

3.10. Did [NAME] eat any solid, semi-solid, or soft foods yesterday during the day or at night?

1 = Yes
0 = No
98=Don't know

3.11. Has [NAME] had diarrhea in the last 2 weeks?

1 = Yes
0 = No
98 = Don't know

3.12. Is [NAME] able to walk unaided, crawl, or unable to crawl? **(*Circle <u>one</u> response).***

1 = Walk unaided
2 = Crawl only
3 = Unable to crawl or walk

Location, collection, transportation and disposal of child's feces

3.13. Who is the main person that is responsible for helping [NAME] pass stools? **(*Circle <u>one</u> response).***

1= Myself
2= Mother
3= Father
4= Sibling (Specify age: [__|__] years)
5 =Grandmother

6=Hired help / nanny
96= Other: ***(specify)*** [_____]

3.14. What other people in the house may help [NAME] to pass stools? **(*Multiple responses possible).***

1= Myself
2= Mother
3=Father
4=Sibling (Specify age: [__/__] years)
5 = Grandmother
6=Hired help / nanny
96= Other: ***(specify)*** [_____]

3.15. When was the last time [NAME] passed stools? ***(Circle <u>one</u> response).***

1=Today
2=Yesterday
3=Two days ago
4=More than two days ago
5=Don't know

3.16. The last time [NAME] pass stools, where did they defecate? ***(Do not read out responses. Prompt as necessary. Circle <u>one</u> response).***

1= Child potty in courtyard/garden
2 = Child potty in house
3 = In the household garden/court yard (without a potty or latrine)
4 = Inside the house (without a potty or latrine)
5 = Open space outside the household garden
6 = Bush, forest, field
7 = Into a latrine or toilet
8 = Into a nappy or diaper
96 = Other: ***(specify)*** [_____]
98 = Don't know

3.17. Is this the place [NAME] usually passes stool?

1 = Yes
0 = No
98 = Don't know

3.18. What are other common places that [NAME] passes stools? ***(Do not read out responses. Prompt as necessary. Multiple responses possible).***

1 = Child potty in courtyard/garden
2 = Child potty in house
3 = In the household garden/court yard (without a potty or latrine)

4 = Inside the house (without a potty or latrine)
5 = Open space outside the household garden
6 = Bush, forest, field
7 = Into a latrine or toilet
8 = Into a nappy or diaper
96 = Other: **(*specify*)** [_____]
98 = Don't know

3.19. After the last time [NAME] passed stools, what was done to dispose of the stools? ***(One response possible. Verify answer with response in 3.11).***

1 = Child used toilet or latrine **(SKIP to 3.16)**
2 = Put/rinsed into toilet or latrine
3 = Put/rinsed into drain or ditch
4 = Thrown into garage
5 = Buried
7 = Left in the open **(SKIP to 3.16)**
96 = Other (*specify*) [_____]

3.20. How long after the defecation process did you dispose of [NAMES] stool?

[___]:[___|___] (HOURS/MINUTES Record "9|98" for don't know)

3.21. After the last time [NAME] passed stools, how did you handle the feces? ***(Do not read out responses. Prompt as necessary. Multiple responses possible).***

1 = Hands only/bare hands
2 = Hands and cloth, paper, leaves
3 = Scrap material to scoop feces
4 = Used potty
5 = Used spade
6 = Did nothing
7 = Left in the open
8 = Child used latrine
96 = Other **(*specify*)** [_____]

Cleaning and handwashing

3.22. After the last time [NAME] passed stools, did you clean [names] bottom?

1 = Yes
0 = No **(SKIP to 3.19)**

3.23. With what did you clean [NAMES] bottom? ***(Do not read out responses. Prompt as necessary. Multiple responses possible).***

1 = Bare hands
2 = Water
3 = Cloth
4 = Soap
5 = Paper
6 = Leaves
96 = Other **(*specify*)** [_____]

3.24. The last time [NAME] defecated, did you wash your hands after you cleaned [NAMES] bottom?

1 = Yes
0 = No **(SKIP to 3.21)**

3.25. The last time [NAME] defecated, how did you wash your hands?

1 = Water only
2 = Water and soap
3 = Water and ash
96 = Other [Specify: _____]

3.26. The last time [NAME] defecated, did you wash [NAMES] hands?

1 = Yes
0 = No **(SKIP to 3.23)**

3.27. The last time [NAME] defecated, how did you wash [NAMES] hands?

1 = Water only
2 = Water and soap
3 = Water and ash
96 = Other [Specify: _____]

3.28. The last time [NAME] defecated, did you wash your hands?

1 = Yes
0 = No **(SKIP to 3.25)**

3.29. The *last time* you came in contact with [NAMES] feces, how did you wash your hands?

1 = Water only
2 = Water and soap
3 = Water and ash
96 = Other [Specify: _____]

3.30. When was the *last time* that you came in contact with your child's feces?

1. Cleaning the child
2. Disposing of the child's feces
96. Other [Specify: _____]

3.31. Is name is old enough to use a latrine?

1 = Yes
0 = No

Frequency of behavior

3.32. Where does your child *usually* defecate?

1 = Child potty in courtyard/garden
2 = Child potty in house
3 = In the household garden/court yard (without a potty or latrine)
4 = Inside the house (without a potty or latrine)
5 = Open space outside the household garden
6 = Bush, forest, field
7 = Into a latrine or toilet
8 = Into a nappy or diaper
96 = Other: ***(specify)*** [_____]
98 = Don't know

3.33. Where do you *usually* dispose of your child's stools?

1 = Child used toilet or latrine
2 = Put/rinsed into toilet or latrine
3 = Put/rinsed into drain or ditch
4 = Thrown into garage
5 = Buried
7 = Left in the open
96 = Other (*specify*) [_____]

3.34. In the last week, how frequently did [NAME] use a toilet to defecate? Would you say a latrine was always used, most of the time, sometimes, rarely, or never?

1 = Always
2 = Most of the time
3 = Sometimes
4 = Rarely
5 = Never

3.35. In the last week when [NAME] defecated, would you say a latrine was always used, most of the time, sometimes, rarely, or never to dispose of the feces?

1 = Child used toilet or latrine
2 = Put/rinsed into toilet or latrine
3 = Put/rinsed into drain or ditch
4 = Thrown into garage
5 = Buried
7 = Left in the open
96 = Other (*specify*) [_____]

3.36. In the last week when [NAME] defecated, what was the most common way to dispose of the stools? ***(One response only).***

1 = Child used toilet or latrine
2 = Put/rinsed into toilet or latrine
3 = Put/rinsed into drain or ditch
4 = Thrown into garage
5 = Buried
7 = Left in the open
96 = Other (*specify*) [_____]

Observation

3.37. Please can you show me the child we are talking about?

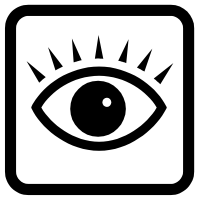
1 = Yes
0 = No

3.38. Observe what the child is wearing:

1 = No undergarments
2 = Underwear
3 = Disposable diaper
4 = Cloth diaper
5 = Nothing

3.39. Observe if any of the clothes are soiled with feces:

1 = Yes observed to have feces
2 = No, not observed to have feces
3 = Not able to observe



5. RESPONDENT KNOWLEDGE

COMPLETE A COPY OF SECTION 5 FOR EACH RESPONDENT WHO COMPLETED SECTION 3.
IF A SINGLE RESPONDENT COMPLETED MORE THAN ONE SECTION 3, BECAUSE OF MULTIPLE CHILDREN UNDER THE AGE OF THREE, STILL ONLY COMPLETE ONE SECTION 4 FOR THAT RESPONDENT.

DIRECTIONS TO INTERVIEWER: Complete questions 4.1a to 4.1m by referring to list of household members in Section 1.

4.1a. Respondent's name [_____]		4.1b. Respondent's ID [___|___]	4.1c. Respondent's age [___|___]
1st child under the age of 3	4.1e. Child's name [_____]	4.1f. Child's ID [___|___]	4.1g. Child's age [___|___]
2nd child under the age of 3	4.1h. Child's name [_____]	4.1i. Child's ID [___|___]	4.1j. Child's age [___|___]
3rd child under the age of 3	4.1k. Child's name [_____]	4.1l. Child's ID [___|___]	4.1m. Child's age [___|___]

Demographic Information

4.2. What is the highest level of education you have achieved? *(Circle one response.)*

1 = No education
2 = Primary incomplete
3 = Primary complete
4 = Secondary incomplete
5 = Secondary complete
6 = Tertiary level incomplete
7 = Tertiary level completed and above
8 = Informal education
99 = Don't know

Knowledge and awareness

4.3. Can children die of diarrhea?

1 = Yes
0 = No
98 = Don't know

4.4. Is stool from a child under the age of three years harmful?

1 = Yes
0 = No
98 = Don't know

4.5. Is stool from a child over the age of three harmful?

1 = Yes
0 = No
98 = Don't know

4.5. Is stool from an adult harmful?

1 = Yes
0 = No
98 = Don't know

4.6. At what age is it acceptable for children to use a latrine? [__|__] years

4.7. Is it safe for a two year old child to use a latrine?

1 = Yes
0 = No
98 = Don't know

4.8. Have you heard of child potties?

1 = Yes
0 = No **(SKIP to 4.11)**
98 = Don't know **(SKIP to 4.11)**

4.9. Do you know where to obtain a child potty?

1 = Yes
0 = No
98 = Don't know

4.10. Are child potties affordable?

1 = Yes
0 = No
98 = Don't know

4.11. Do you know where to obtain disposable nappies?

1 = Yes
0 = No **(SKIP to 4.13)**
98 = Don't know **(SKIP to 4.13)**

4.12. Are disposable nappies affordable?

1 = Yes
0 = No
98 = Don't know

4.13. Have you ever heard of a scoop to collect and dispose of the feces?

1 = Yes
0 = No **(SKIP to 4.15)**
98 = Don't know **(SKIP to 4.15)**

4.14. Are these feces scoops affordable?

1 = Yes
0 = No
98 = Don't know

4.15. Tell me, what is safest way to dispose of children feces? ***(One response only. Do no prompt).***

2 = Put/rinsed into toilet or latrine
3 = Put/rinsed into drain or ditch
4 = Thrown into garage
5 = Bury
7 = Leave in the open
96 = Other (*specify*) [_____]

6. RESPONDENT CHARACTERISTICS AND OTHER HOUSEHOLD BACKGROUND INFORMATION[9]

5.1. Gender

1 = Male
0 = Female

5.2. How old are you? [___I___] years

5.3. What is your highest level of education achieved? ***(Circle <u>one</u> response.)***

1 = No education
2 = Primary incomplete
3 = Primary complete
4 = Secondary level incomplete
5 = Secondary level complete
6 = Tertiary level incomplete
7 = Tertiary level completed and above
8 = Informal education

99 = Don't know

5.4. Can you read or write?

1 = Male
0 = Female

5.5. What is your marital status? ***(Circle <u>one</u> response.)***

1 = Single
2 = Married
3 = Living together
4 = Divorced/separated
5 = Widowed

99 = Don't know

5.6. What is your main occupation? ***(Circle <u>one</u> response.)***

1 = Petty trader (street vendor, local drinks, small kiosks)
2 = Medium large trader (hotels, wholesalers, import/exports)
3 = Self-employed/skilled worker
4 = Farm daily labor
5 = Other labor

[9] Other options may include respondents' religion, language spoken, number of children or number of family members, if considered relevant. Additional household expenditure questions may be added or modified to fit the research objectives.

6 = Salaried government
7 = Salaried private sector
8 = Housewife/caregivers
9 = Unemployed

96 = Other [_____]

99 = Don't know

5.7. Do you have regular income?

1 = Yes
0 = No

5.8. What is your household average monthly income? [___I___] currency

5.9. What is your household average yearly income? [___I___] currency

5.10. What are the main monthly expenditures of the household? *(Multiple responses. More than one option possible)*

1 = Food
2 = Education
3 = Health care
4 = House repairs
5 = Household upgrades
6 = Land purchases
7 = Agricultural purchases
8 = Social events, marriages baptisms

96 = Other [_____]
96 = Other [_____]
96 = Other [_____]

99 = Don't know

5.11. In the past year, what have you spent household expenditures on? *(Multiple responses. More than one option possible)*

1 = Food
2 = Education
3 = Health care
4 = House repairs
5 = Household upgrades
5 = Land purchases
6 = Agricultural purchases
7 = Social events, marriages baptisms

96 = Other [_____]
96 = Other [_____]
96 = Other [_____]

99 = Don't know

5.12. Does your household have adequate water for all the household needs (drinking, cooking, washing clothes and utensils, bathing, latrine use, etc.) throughout the year?

1 = Yes
0 = No

5.13. How many household members live here: [___I___] [10]

5.14 How many children are under the age of five? [___I___] (Interviewer instructions: If none, write "0")

[10] This question is of relevance if you decide not to use a household roster to identify all members in the household.

7. SAMPLE DETERMINANTS FOR MEASUREMENT OF CHILD'S FECES

In the following section I am going to ask you about young children in your community, that is, children that are less than three years of age. I would like you to tell me about your perceptions on this. Please answer these questions according to your feelings in the last two weeks.

Social norms

QUESTION DEFECATION PRACTICES social norms	RESPONSE OPTIONS[11]				
To what extent is it acceptable for children to shit in the open?	Not at all acceptable (1)	A little acceptable (2)	Sometime acceptable (3)	Very acceptable (4)	Always acceptable (5)
To what extent do you agree that it is normal for children to shit in the open?	Not at all (1)	Not much (2)	A moderate amount (3)	Very much (4)	An extreme amount (5)
How common is it in your community for children to defecate on the ground?	Not at all (1)	Not much (2)	A moderate amount (3)	Very much (4)	An extreme amount (5)
How acceptable is it for young children to shit directly onto the ground?	Not at all (1)	Not much (2)	A moderate amount (3)	Very much (4)	An extreme amount (5)
To what extent do you agree that young children should always use latrines?	Not at all (1)	Rarely (2)	Sometimes (3)	Mostly (4)	Always (5)
How frequently do young children in your community use latrines?	Never (1)	Rarely (2)	Sometimes (3)	Most of the time (4)	Always (5)
How common is it for people in your community to defecate in the open?	Never (1)	Rarely (2)	Sometimes (3)	Most of the time (4)	Always (5)

[11] These sample scales use five point response options. Before administering these scales, consider pilot testing these on a group of respondents to see how feasible and clear these scales are. In instances where the scales cannot be translated easily, or if they are deemed too complicated or difficult to understand by the target population, then consider simplifying the scales using a three-point option, or using other culturally appropriate response options to indicate a more or less desirable answer. Though more time consuming, respondents could use small stones to indicate the extent to which they agree with a statement, where placement of 1 stone means they don't agree at all, two stones indicates that they somewhat agree, and three stones shows that they agree very strongly with the statement.

DISPOSAL PRACTICES social norms					
To what extent is it normal for household members that have a latrine, to dispose of children's feces into the latrine	Not at all (1)	Not much (2)	A moderate amount (3)	Very much (4)	An extreme amount (5)
To what extent is it acceptable is it for household members that have a latrine, to dispose of children's feces into the latrine	Not at all (1)	Not much (2)	A moderate amount (3)	Very much (4)	An extreme amount (5)
To what extent is it common for household members that have latrines, to dispose of children's feces into the latrine	Not at all (1)	Not much (2)	A moderate amount (3)	Very much (4)	An extreme amount (5)
How important is it to dispose of a child's stools in a latrine? Would you say it is not at all important, somewhat important, a little important, very important, extremely important?	Not at all important (1)	A little important (2)	Somewhat important (3)	Very important (4)	Extremely important (5)
To what extent to you agree that it is important to always dispose of young children's shit in a latrine? Would you say it is not at all important, somewhat important, a little important, very important, extremely important?	Not at all important (1)	A little important (2)	Somewhat important (3)	Very important (4)	Extremely important (5)
To what extent does everyone in your community dispose of young children's shit in a latrine?	Never (1)	Rarely (2)	Sometimes (3)	Most of the time (4)	Always (5)
DISPOSAL PRACTICES subjective norms[12]					
To what extent would your neighbors agree that it normal for household members that have a latrine, to dispose of children's feces into the latrine	Not at all (1)	Not much (2)	A moderate amount (3)	Very much (4)	An extreme amount (5)
To what extent would other in your community agree that is it acceptable is it for household members that have a latrine, to dispose of children's feces into the latrine	Not at all (1)	Not much (2)	A moderate amount (3)	Very much (4)	An extreme amount (5)
To what extent would others in your community agree that it is common for household members that have latrines, to dispose of children's feces into the latrine	Not at all (1)	Not much (2)	A moderate amount (3)	Very much (4)	An extreme amount (5)
How important is it for people in your village to dispose of a child's stools in a latrine? Would you say it is not at all important, somewhat important, a little important, very important, extremely important?	Not at all important (1)	A little important (2)	Somewhat important (3)	Very important (4)	Extremely important (5)
To what extent do people in your village agree that it is important to always dispose of young children's shit in a latrine? Would you say it is not at all important, somewhat important, a little important, very important, extremely important?	Not at all important (1)	A little important (2)	Somewhat important (3)	Very important (4)	Extremely important (5)

[12] While subjective norms is not included as part of the SaniFOAM framework, consider using items like these if you think that asking the respondent directly about what he or she thinks may be too sensitive or lend to social desirability (i.e., respondents trying to give the "right" answer).

CHILD SKILLS and SELF EFFICACY

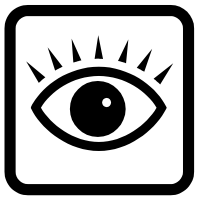
To what extent so you believe that your child is able to use a latrine for defecation	Not at all (1)	Not much (2)	A moderate amount (3)	Very much (4)	An extreme amount (5)
To what extent are you confident that you child can use a latrine for defecation	Not at all (1)	Not much (2)	A moderate amount (3)	Very much (4)	An extreme amount (5)
To what extent do you believe that your child has the skills to use a latrine for defecation	Not at all (1)	Not much (2)	A moderate amount (3)	Very much (4)	An extreme amount (5)
How much do you believe that your child is old enough to use a latrine	Not at all (1)	Not much (2)	A moderate amount (3)	Very much (4)	An extreme amount (5)

Latrine product attributes

To what extent do you believe that latrines are unsafe for young children? Would you say not at all, rarely, sometimes, most of the time, or always unsafe?	Never (1)	Rarely (2)	Sometimes (3)	Most of the time (4)	Always (5)
To what extent are you worried that your child may fall into the hole when using a latrine?	Never (1)	Rarely (2)	Sometimes (3)	Most of the time (4)	Always (5)
To what extent do you believe that latrines are too dangerous for young children to use?	Never (1)	Rarely (2)	Sometimes (3)	Most of the time (4)	Always (5)
To what extent do you believe that latrines are too unhygienic for young children to use?	Never (1)	Rarely (2)	Sometimes (3)	Most of the time (4)	Always (5)
How satisfied are you with where your young child usually defecates? Would you say your are not at all satisfied, rarely satisfied, sometimes satisfied, very satisfied, or extremely satisfied?	Never (1)	Rarely (2)	Sometimes (3)	Usually (4)	Always (5)

Drivers

To what extent is it inconvenient to dispose of young children's feces into a latrine? Would you say not at all, rarely, sometimes, most of the time, or always inconvenient?	Never (1)	Rarely (2)	Sometimes (3)	Most of the time (4)	Always (5)
To what extent is it bothersome to dispose of young children's feces into a latrine? Would you say not at all, rarely, sometimes, most of the time, or always bothersome?	Never (1)	Rarely (2)	Sometimes (3)	Most of the time (4)	Always (5)
To what extent is it a annoying to dispose of young children's feces into a latrine? Would you say not at all, rarely, sometimes, most of the time, or always annoying?	Never (1)	Rarely (2)	Sometimes (3)	Most of the time (4)	Always (5)
To what extent is it a hassle to dispose of young children's feces into a latrine? Would you say not at all, rarely, sometimes, most of the time, or always a hassle?	Never (1)	Rarely (2)	Sometimes (3)	Most of the time (4)	Always (5)



ANNEX D: Observations

The following two modules provide examples of observation techniques. These modules can be used to assist researchers and project managers during the questionnaire development stage of the research study or independently. These modules can be adapted according to the research objectives and interests.

Module 1 includes observations to determine the number of feces that may be in the compound, the presence of a handwashing station and latrine. For example:

- To what extent is there a presence of feces in the household?
- Is there a latrine? Is there a handwashing station?

Module 2 includes spot observations, which allows the interviewer to make notes regarding a defecation practices that may occur during the interview. These are open ended questions that allow the interview to describe the mobility of the child, where he or she defecated, what is done with the feces, including how it is carried and if tools are used, and where it is finally disposed of. In addition, notes are made on how the child's bottom is cleaned and with what, if and how the child's hands are washed, and how water used to clean the child is disposed of.

1. FECES QUANTIFICATION OBSERVATIONS

INTERVIEWER INSTRUCTIONS:
BEFORE YOU BEGIN THE OBSERVATION, ASK THE RESPONDENT TO IDENTIFY THE SHARED COMPOUND AREA AND THE PRIVATE AREA AROUND THE HOUSEHOLD STRUCTURE. MAKE ALL OBSERVATIONS ACCORDINGLY.

RECORD THE **NUMBER OF PILES** OF **HUMAN FECES** YOU OBSERVE IN EACH AREA (UP TO 10 PILES) AND **PRESENCE/ABSENCE** OF TYPES OF **ANIMAL FECES**

CODE "55" IF TOO NUMEROUS TO COUNT (MORE THAN 10 PILES)
CODE "99" IF CANNOT TELL/CANNOT OBSERVE

5.1. OBSERVE **HUMAN FECES** WITHIN THE COMPOUND THAT COULD BE CONSIDERED OPEN DEFECATION
|__|__| PILES

5.2. OBSERVE **ANIMAL** FECES PRESENT WITHIN THE COMPOUND
|__|__| PILES

5.3. OBSERVE **HUMAN** FECES BEHIND THE HOUSE THAT COULD BE CONSIDERED OPEN DEFECATION
|__|__| PILES

5.4. Does your household have access to a toilet facility that is in use? Can I see it?

1 = Yes has a latrine
2 = Yes has a latrine, but refused observation
3 = Yes has a latrine, can not observe
4 = No toilet facility

5.5. Is there a handwashing station attached to the latrine or near by?
1 = Yes
0 = No

5.5. What materials are present? ***(Multiple responses possible. Circle all that apply).***
1 = Bar soap
2 = Soap powder
3 = Running water
4 = Water
5 = Ash

5.6. Please can you show me where members of your household most often wash their hands?

5.7. Observe the present of soap, detergent, or other cleansing agent. ***(Multiple responses possible. Circle all that apply.)***
1 = Soap or detergent
2 = Ash, mud, sand
3 = None

1. SPOT OBSERVATIONS

INTERVIEWER INSTRUCTIONS: IF A CHILD UNDER THREE DEFECATES WHILE YOU ARE IN THE HOUSE, RECORD THE FOLLOWING INFORMATION USING NOTE FORM. THIS TOOL SHOULD BE USED WHEN A DEFECATION EVENT OCCURS BY THE CHILD. USE THIS FORM TO MAKE NOTES, AS YOU OBSERVE THE DEFECATION PRACTICE. IF AN ADDITIONAL DEFECATION EVENT OCCURS, THEN USE ANOTHER FORM.

CHILD AND QUESTIONNAIRE ID [__|__] [INTERVIEWER TO CONFIRM THE ID OF THE CHILD SO KEY BEHAVIORAL CHARACTERISTICS CAN BE LINKED]

5.8. How mobile is the child (crawling, walking unaided?)

_____
_____
_____

5.9. Where is the place of defecation? Where it the location of the potty/latrine?

_____
_____
_____

5.10. Does anyone pick up the feces?

_____
_____
_____

5.11. How long does it take to pick up the feces?

_____
_____
_____

5.12. How is the feces carried? Are any tools used?

_____
_____
_____

5.13. Where is it transported to?

_____
_____
_____

5.14. Where is it finally disposed of?

_____
_____
_____

5.15. Where are the tools placed (in reach of children?) Are the tools cleaned and washed with soap?

_____
_____
_____

5.16. How is the child's bottom cleaned? With what is it cleaned?

_____
_____
_____

5.17. Are the child's hands washed? How?

_____
_____
_____

5.18. Does the person cleaning and transporting the feces wash their hands? How?

_____
_____
_____

5.19. What is done to dispose of the water? Or clothes, other materials used to clean the child?

_____
_____
_____

5.20. Does the caregiver wash his or her hands? How?

_____
_____
_____