Monitoring and evaluation rely on data collection instruments to elicit and record information. There are various types of instruments available for M&E including summary report forms used to aggregate project data, questionnaires, more informal interview guides, inventory forms, and observation checklists. Several formats can be combined on one form. For example, a household survey may include questions for the mother about her family’s health as well as a checklist for observations about the size, construction, and cleanliness of the house.

The development of clear, easy to read instruments is a vital component of both monitoring and evaluation. Knowing what to include and how to organize the questions and answers requires skill, common sense, and practice. Considering how the collected data will be analyzed and used before designing the data collection instrument, creates a focused, efficient instrument. The following section outlines considerations to be taken when designing data collection instruments. (Clear language and an easy to follow format are essential to collect accurate, useful information).

**Steps in Designing M&E Instruments**

In designing a questionnaire, report form, or other type of instrument, M&E staff should follow the following concrete steps:

1) Draft the content of the instrument based on pre-determined information needs.

2) Pay attention to language.

3) Craft questions carefully.

4) Optimize the sequence of the questions.

26. These guidelines have been formatted into an easy-to-use checklist that can be found in Annex 6.
5) Make the format easy to follow.

6) Check for consistency between instruments.

7) Pre-test the instrument.

8) Revise the instrument.

Once these tasks are accomplished, the instruments can then be printed, distributed, and put to use in the field.

**Draft the Content**

*Keep it short and simple.* Information should be collected and recorded in the simplest way possible while maintaining reliability. An M&E system should collect only what is needed. Those designing the data collection system should determine in advance how each piece of information collected will be used. It is useful to keep in mind that the collection, processing, and analysis of information is costly in terms of financial and human resources.

Some project evaluation teams have found it particularly useful to construct, at the point of survey questionnaire design, dummy tables corresponding to the filled in tables anticipated in the evaluation report. The very process of constructing these tables often clarifies the type and form of data required and can significantly reduce the proportion of information collected but unutilized—often over half of the data in an evaluation survey.

*Identify subjects and sources.* The instrument must provide enumerators with an easy way to identify the child, household, clinic, or community being studied. Codes are often used to identify the physical location of the subject (e.g. a province, state, district, county, village, cluster, house) and the particular unit of analysis (e.g. a clinic, a household, an individual). In addition, the persons filling out the forms must be identified on the form.
Field Insight: Identification Codes that Have Worked

A household survey conducted in Nicaragua that focused on under-twos, combined various codes to form one long identification number for each child.

Province    Town    Household    Child

Several monthly reports for the Bangladesh Integrated Nutrition Program have separate lines to identify the thanas, unions, and community nutrition centers (CNC). The numbers are then combined into a single code when entered into a computer.

Thanas: __________    Unions: __________    CNC: __________

Use filter questions to avoid asking inappropriate questions. For example, ask a woman if she has children before asking the age of her youngest child.

Calculate later. Forms to be filled out in the field should not require calculations. Data collectors should record information as provided to them. Any manipulations (e.g. ranks, percentages, etc.) should be done later. In many cases, easy-to-use computer programs, such as Epinfo27 or

basic spreadsheet or statistical packages, can be used to make these calculations.

**Pay Attention to Language**

*Communicate appropriately.* When designing monitoring and evaluation instruments, it is important to use the local spoken language and in ways which capture local concepts. Sometimes pictures or symbols that are easily recognized by respondents are useful to convey ideas, particularly where level of literacy is low. When discussing past events or seeking to estimate the age of a person, it may be helpful to use local holidays, seasons (e.g., the harvest or the rainy season), and special occurrences (e.g., a flood or construction of a school) to help respondents with recall.

*Do not compromise on translations.* When working in foreign languages, a good translation is essential. If the original instrument is to be written in English, it is useful to translate the English version into the local language and then have someone else translate it back into English. Not only will this prevent translation mistakes, but it will also allow investiga-

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**Field Insight: Defining Terms to Avoid Misinterpretation**

Sometimes what is clear to those designing instruments may be incomprehensible or misinterpreted by others. This is particularly true when translating instruments into foreign languages. Even in the same language, however, there may be different understandings of concepts. In Ghana, for example, the term “short-term hunger”, which was introduced by a workshop facilitator to discuss the consequences of skipping one or two meals, was interpreted by workshop participants as the seasonal hunger that local people experience six months of the year.
tors to understand which concepts do not translate well in the local language and vice-versa. In Bangladesh, for example, an ORS campaign recommending use in all cases of diarrhea, mistakenly used the Bangla word for watery stools, understood locally as a small subset of diarrheal infection.

**Use simple language.** Avoid using double negatives such as, “Do you believe that a mother should not have to attend feeding sessions if her child is not ‘at risk’?”

**Be specific.** Language used, whether in interviews or on reporting forms, must be specific to prevent confusion. Instruments should avoid general terms such as “small”, “big”, “frequently”, or “often”. The examples provided in Table 8.1 may be useful in judging whether the language in an instrument is sufficiently specific or too general.

<table>
<thead>
<tr>
<th>Table 8.1 General vs. Specific Language for Instruments</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>General Language</strong> vs. <strong>Specific Language</strong></td>
</tr>
<tr>
<td>Does the school have adequate sanitation?   Number of functioning latrines ______</td>
</tr>
<tr>
<td>_____ yes          _____ no         Number of people who use latrine (teachers, students, and others) ______</td>
</tr>
</tbody>
</table>
|                        [Note: these figures can be used to later decide if there are adequate sanitation facilities given the ratio of users to latrines.]
| Is the house clean?                           Inside the house, there is evidence of: |
| _____ yes          _____ no         Animal feces ______ |
|                                   Rotten food ______ |
|                                   Garbage on the floor ______ |
| How often does your child have diarrhea?     How many loose or watery stools has your child had in the past five days? ______ |
Craft Questions Carefully

**Carefully craft questions.** Inappropriate wording of questions can influence responses and may lead to information which do not accurately reflect the situation. Employing the following strategies when crafting questions can prevent this phenomenon.

**Avoid “double barreled” questions** that present two ideas simultaneously such as, “Do you think children should receive deworming medicine and micronutrient supplements?”. Make sure that each question covers a single idea.

**Keep questions neutral** and refrain from using words that could influence answers. For example, the question, “Do you think it is healthy to take a daily vitamin supplement” is a slanted question, because it presents the idea of “healthy” without the opposite concept. A better question would be “Do you think taking a daily vitamin supplement is good for your health, bad for your health, or makes no difference?” While this may sound cumbersome, it will assure that the use of a positive word in the question doesn’t bias the answer. Another way of asking the question would be “What do you think about taking a daily vitamin supplement?” and recording the answer in pre-coded categories.

**Do not reference authorities.** Questions can also be slanted by using references to authorities: “Do you agree or disagree with the nurse’s advice to breast-feed exclusively for four months?” appears balanced, but reference to the nurse suggests that one answer is better than the other. Respondents may give an answer which reflects what they think is expected rather than what they truly believe.

**Avoid hypothetical questions.** All questions should refer to actual events and circumstances. Hypothetical questions frequently are difficult to conceptualize, and often generate confusion.
Ask for facts, not judgments. Ask for facts or descriptions rather than judgments on the adequacy of the service. For example, ask, “How many meals did each household member consume each day during the past week?” rather than “Is your family short of food?” The definition of “short of food” may vary between participants and therefore, be difficult to interpret during analysis of the data. Subjective questions can be useful, as long as it is recognized that they measure opinions and attitudes, not facts.

For closed-ended questions, which have response options listed, the options given must cover each of the major possible answers. (It is unrealistic to seek to be fully exhaustive. In those cases where it is anticipated that responses may fall outside the options listed, an “other” response category may be included. However, inclusion of “other” should rest on the assumption that it will be minimally used). When the question refers to specific facts, the response categories should be mutually exclusive. Examples include income and education levels, where a person can only belong to one category. Response categories should not overlap. For example, categories should be “some elementary school, but did not finish”, and “completed elementary school.” If the first category were “some elementary school” a person could misread the question and check both the first and second responses. In such cases, it should be clear that the boundaries of each category are not identical, e.g., “less than 6th grade”; “6th grade or more, but less than 12th grade,” “completed high school; no further education” and so on. It is easy for the respondent to be confused if the categories are “0–6th grade” “6th to 12th grade” “12th grade and above.”

In questions concerning beliefs, attitudes, or behavior, you can choose to make the response categories mutually exclusive, but in many cases, multiple answers should be permitted. For example, a question concerning use of the clinic might include “hours are inconvenient” and “medicines are not available” as reasons for failing to attend. It is quite
possible that both factors influenced the respondent's decision, so both should be permitted answers to the same question.

**Optimize the Sequence**

**Begin with a non-threatening question.** Always begin an instrument with easy, non-threatening questions which will build rapport with the respondent. Questions should be grouped by topic and generally within each topic by response type (e.g., yes/no, agree/disagree, and multiple choice). Place open-ended questions and questions about sensitive topics, such as income, near the end. Some surveys end with an easy to answer question; in an effort to leave participants feeling positive about responding.

**Make an Easy to Follow Format**

**Pay attention to layout.** The format of a data collection instrument, whether for a one-time survey or for ongoing monitoring, is often as important as the content itself. A poorly laid out instrument will result in errors, and information will be unreliable. It is important to keep the instrument uncluttered and with plenty of white space between questions. Questions should be clearly numbered and ample room provided for answers. Boxes or lines should be used to contain responses. Each form should be clearly labeled at the top with both the name of the form and the level of data collection (e.g., health clinic, district office, etc.) with a space to indicate the date of data collection. If the instrument is longer than one page, the pages should be stapled together with identification numbers on all pages.

In addition, leave some space at the end of forms for additional comments. Interviewers should be trained to recognize and explain external factors likely to influence the project (e.g., drought, conflict, or temporary interruption of supply delivery) and unintended effects and note them accordingly.
Pre-code if possible. For questions that are asked with response options, it is often desirable to include codes on the instruments themselves as long as the format remains uncluttered. The codes should be placed next to the answers, as the following example demonstrates, so that computer entry can be done easily and quickly.

| 7 Type of roof:  | 1. _____tin  | 2. _____thatch/grass  | 3. _____other |

When the same prewritten response options are provided in more than one question, the same code should be assigned to a particular response throughout. For example, no will always be coded as 1, yes as 2, don’t know as 3 or for question 7 above, tin = 1, thatch/grass = 2. Whenever tin is found in the questionnaire it should always be coded as 1. However, the same codes can’t always have the same meaning, 1 = no in some questions and 1 = tin in question 7.

If it is not possible or appropriate to pre-code the entire instrument, leave spaces for enumerators or coders to write in codes as well as make any necessary observations, calculations or verifications after the data have been collected. This can be done by providing an extra column on the right side of the form.

For example, in food consumption questionnaires, it is impossible to record the codes for all possible foods that may be reported. The form should have space for the interviewer to write the name of the food, and a space next to it so the numeric code for the food can be put down later. The codes, though, should be determined in advance and available on a list.

Check for Consistency

Match up the forms. After designing the instruments, including the computer data entry program, the entire set of instruments should be re-
viewed together to make sure there is consistency among them in terms of format and coding. In addition, comparison of instruments allows the investigators to determine if all needed information has been collected and if identical information is obtained from more than one source. If critical information has been forgotten, having all forms in view makes it possible to determine the most efficient way to collect data.

**Compare evaluation questionnaires across time.** In order to compare baseline data to data collected at another point in time, often at the mid-term or endpoint of a project, questionnaires need to be as similar as possible. While information needs may change slightly, adding a question or series of questions to gather the additional information will not affect the validity of the questionnaire. However, the wording of a question or the order of questions may influence the answers received. Therefore, it is important to maintain consistency between baseline, midterm and endpoint questionnaires. It is also important to note that if a question is found to provide incorrect or non-informative data on the baseline, it is likely to give the same results if presented in the same way and should be changed on subsequent questionnaires.

**Pre-Test**

**Pre-test all instruments.** Part of the process of designing data collection instruments is to pretest them. Pre-testing allows the data collectors to determine if there is sufficient variation in the responses; the language and concepts used are clearly understood; the response categories are appropriate; participants are able to answer the questions easily; the format is easy to follow; the flow of information is logical; and the instrument can be completed in a reasonable amount of time.

Even when questions have been used before, they must be pre-tested if they are going to be used in a new context or area. Pretests should be administered to people who have backgrounds and experience similar to the intended respondents. Standard report forms used for monitoring
Field Insight: The Value of Pre-testing

A doctoral student conducted household surveys in remote areas of Mali to examine food security. Unfortunately, he didn’t take the time to pretest his instrument. During the first few interviews, he found that people didn’t understand the supposedly “simple” question, “How many people live here?” Did he mean how many people slept here at night or those who gathered here for meals? Should they include family members who had temporarily migrated in search of dry-season labor? Because he had not taken the time to pretest, he had to redesign and reprint the instrument.

In another survey, the designer of an agricultural questionnaire asked farmers, “Do you receive from farming less than ¼ of your income, ¼ to ½, more than ½, or almost all of your income?” Field pre-testing showed that farmers could easily report absolute amounts produced and money earned, but that they did not understand the concept of fractions. The questionnaire was redesigned to collect the information in absolute terms.

should also be pre-tested. The people responsible for regularly filling out these forms (e.g., clinic staff, trainers, and project managers) can offer invaluable feedback on how easy forms are to complete and may suggest ways to improve the format.

Revise

Revise all instruments. Making appropriate changes to the original data collection instrument based on the information revealed during pre-testing leads to a more effective questionnaire. Pre-testing and subsequent revision invariably results in an instrument that produces fewer mistakes in answering the questionnaire or form.