Drug and Therapeutics Committee
Training Course

Session 8.
Understanding the Problems Associated with Medicine Use—Qualitative Methods

Participants’ Guide
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<td>defined daily dose</td>
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SESSION 8. UNDERSTANDING THE PROBLEMS ASSOCIATED WITH MEDICINE USE—QUALITATIVE METHODS

Purpose and Content

Session 8 is intended to provide information on how members of the Drug and Therapeutics Committee (DTC) can investigate the underlying reasons for medicine use problems in their health systems. The discussion covers four qualitative methods used to understand and document how factors such as knowledge, economic incentives, or attitudes and beliefs affect medicine use.

Reviewing the consequences of inappropriate medicine use emphasizes the need to investigate the reasons for health provider-patient behavior. The following examples illustrate how varied inappropriate medicine use can be—

- Prescribing too many medicines for a patient
- Prescribing the incorrect dose or wrong medicine
- Use of antibiotics for patients with viral infections
- Overuse of narcotics for patients with minor pain
- Prescribing medicines when none is needed

Once a medicine use problem has been identified, the DTC must develop a plan, including interventions, to resolve or improve the specific problem. Before planning an intervention, however, DTC members should first understand the reasons for the behavior behind the problem. The DTC can use the methods discussed in this session to identify the causes underlying the problem behavior and then recommend the most appropriate interventions.

Objectives

After attending this session, participants will be able to—

- Identify four qualitative methods to investigate medicine use and prescribing behavior
- Understand the use of the qualitative methods to identify why documented medicine use problems occur
- Design a simple qualitative instrument to investigate medicine use

Preparation and Materials

Read the Participants’ Guide.
Further Readings


Introduction

Discussion of medicines and their use occurs at the end of the patient consultation. Health professionals must be sure to give the correct medicine to the correct patient, and the patient must understand and comply with the treatment or else the expected improvement of the patient’s condition is not likely to occur.

Some examples of irrational use of medicines include—

- Prescribing medicines when the health problem is self-limiting and the patient would get better without taking any medicine (e.g., prescribing ampicillin for a patient who has a simple cold).
- Prescribing several medicines when fewer would provide the same effect (e.g., prescribing chloroquine and paracetamol when the patient has fever but does not have confirmed malaria).
- Prescribing the wrong medicine (e.g., prescribing gastrointestinal antimotility medicines for a child who has simple diarrhea when fluid replacement, such as oral rehydration solution, is indicated).
- Basic diagnostic tests are not ordered before prescribing (e.g., prescribing an expensive third-generation cephalosporin medicine when no culture has been done to ensure effectiveness of the prescribed medicine for the strain of microorganism present in the patient).
- Prescribing more expensive injections when the patient could take oral medicines (e.g., prescribing ampicillin 500 mg injection instead of the generally cheaper ampicillin 500 mg tablets).
- Wrong quantity of a medicine is dispensed to the patient (e.g., dispensing only six tablets of co-trimoxazole when the prescription is for one tablet to be taken two times daily for five days).
- Poor patient compliance because of inadequate labeling of the medicine container. Instructions on dosage frequency, for example, must be written on the container label so
the patient will have a reference point when he or she arrives home and becomes involved in other activities.

Reasons for practitioners to prescribe and dispense medicines irrationally include profit motives, lack of knowledge, and a lack of confidence in their capacity to provide quality care.

Because one of the main functions of the DTC is to identify areas where irrational use of medicines is occurring and, subsequently, to design interventions for correcting the problem behaviors, the committee needs a systematic way to collect data about medicine use.

Quantitative methods of data collection such as ABC or vital, essential, nonessential (VEN) analysis, defined daily dose (DDD) methodology, WHO health facility indicators, and hospital medicine use indicators of prescribing studies, are discussed in session 7, “Identifying Problems with Medicine Use.” Drug use evaluation, a method to identify and improve medicine use problems, is discussed in session 7 and session 11, “Drug Use Evaluation (DUE).” Those quantitative methods identify the presence of medicine use problems and their magnitude, but not necessarily why the medicine use problems are occurring.

The qualitative methods discussed in this session provide ways to target health providers, patients, provider-patient interactions, and the complex of cultural, social, economic, and structural factors that can influence behavior—thus the why of medicine use problems. The methods discussed are—

- Focus group discussions (FGDs)
- In-depth interviews
- Structured observations
- Structured questionnaires

Key Definitions

**Focus group discussion**—In an FGD, a small number (6–10) of people who share similar characteristics such as age, gender, or type of work are brought together by the researchers for a discussion. A trained moderator encourages participants to reveal underlying opinions, attitudes, and reasons for the problem being studied. The discussion is recorded and analyzed systematically to identify key themes and issues. This method will identify a wide range of beliefs and opinions.

**In-depth interview**—An in-depth interview allows extended discussion between a respondent and an interviewer. The interview is flexible and often unstructured, allowing an interviewer to encourage the respondent to talk at length about a particular topic of interest.

**Structured observation**—The structured observation study method utilizes trained people to observe a series of encounters between health providers and patients. The observers record the behaviors and impressions they witness during the encounters, or depending on the design of the
study, they record a score for each observed interaction on a set of indicators prepared for the study.

**Structured questionnaire**—The structured questionnaire involves the preparation of a list of questions with a fixed set of responses or options to collect the desired information in a standard way from all respondents. The questionnaire may be administered by an interviewer or completed alone by respondents. This method identifies the frequency of beliefs and opinions of the targeted practitioners.

### Applying Qualitative Methods to Medicine Use Studies

Before establishing a procedure to correct an identified medicine use problem, the DTC should determine why prescribers and patients act as they do, thus giving insight into how their inappropriate medicine use behavior can be changed. The following are a few examples of ways the qualitative methods can be used in a health system. They—

- Complement a quantitative study
- Collect data to explore a topic about which little is known
- Provide background data before developing the training materials for a planned educational intervention and for developing managerial and regulatory interventions

As an example of the use of qualitative methods, prescribing by brand name was very popular at the district hospital. Despite numerous interventions including face-to-face discussions, in-service education, policy and procedures changes, physicians continued to prescribe by brand name. Using qualitative methods, investigators discovered that physicians were receiving educational “benefits” from pharmaceutical companies in exchange for their prescribing of branded products. This problem was then corrected once the reasons for the medicine use behavior became known. Some other factors that have an influence on medicine use—

- Personal—including acquired habits and cultural beliefs
- Interpersonal—as they relate to patient demand
- Work group and work place—including infrastructure, authority and supervision, relations with peers, workload issues
- Informational—issues include unbiased information especially from the pharmaceutical industry
Qualitative Methods

Focus Group Discussions

The FGD technique can be used by a DTC to identify a range of beliefs, opinions, and motives of a target group. The following are some characteristics of the technique.

Participants

The makeup of the study group will depend on the medicine use problem under investigation. A focus group is normally small, with 6 to 10 participants. Random selection of participants is not necessary, as is the case with other types of studies. Instead, the study investigator selects those participants who have the potential to provide meaningful information about the study topics.

Locale

The group meets in an informal location so participants will feel relaxed and can openly discuss their opinions about the subject matter.

Number of Discussion Groups and Sessions

The number of discussion groups and group sessions varies with the nature of the study population and its social characteristics. The general rule is to conduct as many FGDs with the target groups as necessary to answer the medicine use study questions. If the study population is varied, generally two to four discussions could be held for each significant target group. One discussion for a study topic in a certain target group is rarely sufficient. When placing participants in a certain discussion group, consider group dynamics and avoid combinations in which one person might be inhibited by another’s official status within the health system, for example, health workers grouped with hospital directors, nurses, and physicians.

Moderator and Recorder

A group moderator guides the discussion to keep it focused and encourages in-depth expressions of feelings and opinions on the selected topics by all participants. The moderator must be careful not to take over the group, but should instead elicit participant responses.

The group recorder’s responsibility is to record the verbal and nonverbal expressions during the sessions for later reference. Recording may be done with a tape recorder, video, or laptop computer, or it may be done manually. Generally, the recorder does not participate in the discussion.

Advantages and Disadvantages

The FGD method is advantageous in that it is relatively inexpensive to conduct and can be organized in a short time. Discussion sessions often last as little as two hours. Discussions can identify a range of beliefs and ideas.
Disadvantages of the method are that the groups may not represent the larger target population, since participants are not chosen randomly. Furthermore, a successful outcome largely depends on the skills of the moderator, who can allow bias of participant responses to influence the study when expressions or feelings are exaggerated or can allow the discussion to be dominated by a few stronger willed participants.

**In-depth Interviews**

The in-depth interview technique can be used by a DTC to expand the results of a quantitative study by exploring the reasons persons responsible for medicine use problems do what they do or to evaluate the impact of a medicine use intervention implemented by the committee. The following are some characteristics of the technique.

**Participants**

The in-depth interview is conducted individually, that is, only one respondent and one interviewer are present at the time of the session. Participants are not selected randomly, but rather are selected based on their position in the health system, where their attitudes, beliefs, and knowledge are expected to be similar to that of the bigger target population or group.

**Number of Interviews**

The number of interviews to conduct depends on the diversity of the target population. Five to 10 in-depth interviews for each important target group are sufficient. During an interview, 10 to 20 topics related to the medicine use problems under study may be covered.

**Interview Session and Interviewer**

The session is conducted using predefined but open-ended topics. This technique allows the respondent to discuss the topics as they interest him or her. The interviewer should have formal training in social science or interviewing or have substantial training and education in a health-related area such as nursing, pharmacy, or medical social work. The interviewer must also be knowledgeable about the interview topic so that he or she can expand the questioning during the interview.

**Advantages and Disadvantages**

Because it is one-on-one and uses open-ended discussion topics, the in-depth interview technique requires trust to develop between the respondent and interviewer. The interviewer can probe for more in-depth beliefs and attitudes with questions such as, “What would be your reaction if this health facility established a policy of limiting antibiotic prescribing for preoperative patients?” or “Can we talk about other medicines really needed for preoperative patients?” Another advantage of this method can be the revelation of unsought but significant data during the interview process.
Disadvantages of the in-depth interview method are that open-ended topics often generate large quantities of data, which are difficult to manage and can be time-consuming to analyze. Furthermore, unless the interviewer is well trained, the respondents may give answers they think the interviewer wants to hear or that are socially acceptable at the time, thus introducing bias into the study results.

**Structured Observations**

The structured observation method can be used by a DTC to study behaviors such as the interactions involved with patient encounters in the health system. This method is good for studying issues such as patient demand or the quality of communication between providers and patients. The data can be used as a supplement to other study methods or independently. The following are some characteristics of the technique.

**Subjects to Be Observed**

The structured observation technique involves the direct observation by trained observers of health care providers during normal patient encounter activities in normal treatment settings. The persons to be observed are determined by the number and types of health facilities designed into the medicine use study.

**Number of Observation Sites**

The number of observation sites is determined by the objectives of the study, characteristics such as the difference in patient attendance at various health facilities, and the size of population to be studied. If the study population includes a large group of health facilities, then, generally, a minimum of 10 randomly selected sites would be chosen for the study.

**Number of Observations at Each Site**

The number of observations to be conducted at each site is contingent on the objectives of the study. The investigator should plan to follow the patient all the way through the facility, from registration to consultation to pharmacy. Observing at least 30 provider-patient encounters at each site should be sufficient to describe the treatment practices.

**Advantages and Disadvantages**

Structured observations provide an excellent way to understand the complexity of behaviors that happen when persons seek medical care. Using this technique, health care providers are observed in their own environment and data collectors can gain insights that would not be possible otherwise. Another advantage is that data on actual behavior, as opposed to reported behavior, is collected.

A disadvantage of the method is the possible bias created when providers modify their normal behaviors while being observed. This bias can be minimized by skilled observers who are able to
blend into the normal practice settings and who can make providers feel comfortable in their presence. This method is not appropriate for analyzing infrequent behaviors.

**Structured Questionnaires**

The questionnaire method can be used by a DTC to quantify the frequency of attitudes, beliefs, and knowledge about medicine use. Questions can focus on factual material, such as what a respondent knows about standardized diarrhea treatment, or on a respondent’s attitudes, opinions, and beliefs about the subject matter. The following are some characteristics of the technique.

**Respondents**

Selecting the persons to include as respondents using the questionnaire technique depends largely on the target population, the study objectives, and the intended use of the study findings. For example, if the objective is to measure improper treatment of diarrhea in children younger than five years in rural hospitals, respondents from two target groups would be included—pediatric health care providers and mothers of the children.

**Number of Respondents**

The number of respondents to include in the study will depend on the objectives of the study. For example, if the goal is to simply understand the attitudes and beliefs about use of chloroquine in malaria cases, a sample of 50 to 75 respondents from each target group would be sufficient. If, however, the goal is to measure treatment gaps by providers in malaria cases, a much larger sample must be selected to increase reliability of the data collected.

**Interviewers**

The questionnaire method frequently uses the interview technique, and the interviewer should have formal training in social sciences or at least a secondary education in a health-related area such as nursing, pharmacy, or social work. Interviewers should be well trained in interviewing methodology to ensure data collection in a standardized way. Proper supervision of interviewers is essential to ensure uniformity and accuracy of process.

**Questions**

All respondents should be asked precisely the same questions. Questions may be open- or closed-ended. Open-ended questions allow the respondent to answer spontaneously, while closed-ended questioning provides a fixed set of responses from which the respondent may choose his or her answer. No leading questions should be used.

**Advantages and Disadvantages**

Because the questionnaires ask questions that are understandable and familiar to the respondents, whether they are health providers, patients, or mothers of patients, they are useful in measuring
the strength and prevalence of attitudes, beliefs, and knowledge of medicine use. Questionnaires are also useful because they can be generalized to a wider population.

One disadvantage is that structured questionnaires are not designed to uncover the unexpected. Furthermore, use of the structured questionnaire carries the risk of getting responses that are biased by what the respondent thinks the interviewer wants to hear, because responses to a questionnaire survey are very sensitive to how questions are worded. With a skilled interviewer and well-thought-out questionnaires, however, an investigator can minimize this disadvantage. A final disadvantage is that large structured questionnaire surveys are expense to conduct.

**Activities**

The activities included in this session allow participants to practice developing a questionnaire that could be used to obtain information on prescribers’ habits and knowledge about antibiotic use in children in their health system.

Participants will work in teams of five and select a leader to facilitate the activity. A recorder will document the questions as they are developed by the group, and the leader will present the final questions in a plenary session.

**Activity 1. Deciding what questions to ask during qualitative methods to find out the reasons for high antibiotic use in your hospital**

The first step to developing qualitative instruments is to decide what questions you need to ask of which people to determine why a particular medicine use problem is occurring. For this activity, assume your hospital has very high antibiotic use level, and you want to investigate this through—

- Exiting patient interviews
- Observation of the consultation
- In-depth interviews with the prescriber

Using these three methods, discuss in your groups what questions you need to answer to determine the motivations underlying the problem of high antibiotic use. You may use indirect questions and observation as well as direct questions depending on the type of instrument. After discussing in your group, you will be asked to present your findings.

**Activity 2. Designing a qualitative instrument to investigate why antibiotic use is so high in a district hospital**

For this activity, assume that not only is antibiotic consumption in your hospital high, but also according to a recent prescription audit, it is often inappropriate. Each group will develop one
qualitative instrument to investigate the reasons underlying this antibiotic overuse. These instruments include—

- In-depth interview with prescribers
- Structured interviews with exiting patients
- Structured observation of the consultation

Each group will prepare a role-play based on the instrument. During preparation, each group will construct their instrument on two transparent sheets for the overhead projector using capital letters of sufficient size to be seen from the farthest point of the classroom. During the role play, one group member will show the transparencies of the instrument on the overhead projector and another group member will play the role of investigator (i.e., interviewer or observer). The other roles will be played by participants selected randomly from other groups by the facilitator. The transparencies will allow other members of the class to judge your instrument more effectively.

During each role-play, everyone will need to determine the following—

- Was the instrument clear and useful?
- Did the instrument detect an underlying motive for the excessive antibiotic use?

**Activity 3. Preparing Interview Questions for Prescribers (Optional)**

Develop a questionnaire to evaluate the use of antibiotics in a health care facility. In developing the questionnaire, participants should consider the following sample elements of study design because they may impact the appropriateness of the questions and how respondents comprehend the meaning of the questions.

- Prescriber target groups—one group or several groups, such as physicians or nurses,
- Health facilities—all hospitals, specialty hospitals, outpatient departments, primary health care clinics, others
- Geographic location of facilities
- General education and training levels of prescriber target groups
- Age groups of children
- All antibiotics prescribed for the specific health problems in children

Word the actual interview questions to ensure that data will be collected on *which* antibiotics the prescriber normally orders for the specified health problems by age group studied, and also *why* the prescriber orders the antibiotics he or she does (e.g., standard or approved treatment, no time to review modern practices in the literature, or lab tests like antibiotic sensitivity not available). See a sample interview questionnaire in annex 1.
One group will be selected to interview another group using its prepared questionnaire. This role-play exercise will be useful to determine the kinds of information and problems that actually arise out of a questionnaire and interview.

Summary

The four study methods presented in this session provide a mechanism for the DTC to quickly assess the causes of a medicine use problem. The study methods can be used individually or to supplement quantitative survey methods, thus rounding out the committee’s understanding of medicine use behavior.

Although the methods are best implemented by social scientists, professionals in the health field, such as nurses and social workers, could be oriented and trained to design and carry out qualitative surveys.

For easy reference, the four qualitative methods are listed below with a synopsis of individual characteristics of each method.

- **Focus group discussion**
  - Less than a two-hour discussion
  - Moderator leads discussion
  - Respondents have similar characteristics such as age, gender, social status
  - Discussion topics are predefined
  - Informal, relaxed ambience
  - Reveals beliefs, opinions, and motives

- **In-depth interview**
  - One-on-one extended interview
  - Questions are predetermined and open-ended
  - Can cover up to 30 topics
  - Reveals beliefs, attitudes, and knowledge

- **Structured observation**
  - Data collection instrument is structured
  - Observers are trained to blend into their surroundings
  - Observers are trained to record what they actually see
  - Useful for recording provider-patient interactions
  - Assesses actual behavior

- **Questionnaire**
  - Questions are standardized with a fixed set of responses or options
  - Respondents are selected to represent the larger population
  - Useful for a large sample of respondents
  - Measures the frequency of attitudes, beliefs, and knowledge
Annex 1. Sample Interview Questionnaire for Prescribers

1. Introduction of interviewer

2. Purpose of interview

I know that treatment of children in our health facilities often involves prescription of antibiotics. The Drug and Therapeutics Committee is interested in knowing more about the types of antibiotics prescribed and your views about antibiotic use.

3. Respondent’s background

What is your position in this clinic?
Your educational background?
Other training?
What is your age?

4. Clinical experience

On an average day, how many children do you treat?
What are the most prevalent health problems of children you treat in this clinic?

5. For each type of infection you encounter in children, please explain how you treat them.

Medicines prescribed
Instructions to mother
Care in clinic
Care at home
Other

6. When treating a child at the clinic, what factors determine whether you give an antibiotic?

Your personal experience
Your knowledge of peer practices
Mothers’ expectations
Knowledge of standard treatment guidelines for the health facility
Use of an essential medicines list or formulary
Results of laboratory tests

7. Where do you get medicine information to make the decision to prescribe medicines?

None available in clinic
Professional journals
Clinic treatment guidelines
Professional training in school
Continuing education classes (What is the frequency of these classes?)
8. Closing remarks

I appreciate your time and willingness to respond to the questions. Do you have anything you would like to add to what we discussed? Are there related topics that were not covered and for which you would like to provide some information?

Thank you