

## 2.0 Conduct ongoing surveillance.

While an initial rapid assessment obtains information on the status of conditions, the ongoing surveillance monitors change in the conditions. It will be possible to obtain more accurate information in this stage than was possible during the initial rapid assessment.

The objectives for conducting surveillance, on an ongoing basis, are to:

1. Determine the existing and potential health problems in the refugee population (not only for those refugees living in camps but also for those who may still enter the camps) and in the directly affected host population.
2. Determine the effect of the health problems in each population on the other.
3. Determine which health-related relief services and resources are needed for the refugee population immediately, within the next three months, and for long-term relief.
4. Determine what additional information should be obtained.
5. Provide your assessment and your recommendations to the appropriate individuals (e.g., government officials, relief administrators, and refugee leaders).
6. Train national epidemiologist counterparts and auxiliary health-care personnel from the refugee population to perform the data collection and/or analysis functions. Work with counterparts (from the MOH and refugee population) from the beginning.

The degree to which you can set up an ongoing surveillance system for the refugee population will depend on numerous factors: the number of people to assist you, the number of camps, the amount of time you can spend in each camp, the incentives for reporting which you establish, etc. The guidelines for this section of the guide describe how to implement all of the methods used to conduct ongoing surveillance. However if, for example, there are no hospitals or health facilities of any kind in any of the camps, you might not be able to set up an elaborate surveillance system; you might only design a simple monthly surveillance form (monitoring natality and mortality figures), identify community health-care workers, and teach them how to keep records. In such a situation, incentives for reporting will be crucial.

It is essential to use relevant standards when evaluating the effectiveness, adequacy, appropriateness, and sufficiency of the activities and resources. Most importantly, the conditions in which the refugees are living should be life-sustaining. Beyond that criterion, evaluate the conditions according to the conditions the refugee population will return to and the conditions in which the host population lives.

## 2.1 Determine the information to be obtained.

In a setting such as this one, where a population is living in temporary habitations, the situation is constantly changing; accordingly, the information requirements and priorities also change. The following checklist of information which could be gathered during the ongoing surveillance may be useful to you:

- A. The health status of the refugee population (those living in and those who may still enter the camps).
- What are the characteristics of the population (i.e., the number by age, sex, geographic location of origin, ethnic group)?
  - How many deaths are occurring each day (by age and sex)?
  - What are the causes of the deaths (by age and sex)?
  - How many births and spontaneous abortions are occurring?
  - What is the nutritional status of the population?
  - The following questions relate to the diseases that are occurring, such as malaria, TB, gastroenteritis, pneumonia, and other respiratory diseases, anemia, protein malnutrition, measles, pertussis, fungal diseases, parasitic diseases (e.g., schistosomiasis, onchocerciasis):
    - What is the prevalence of the disease?
    - What is the incidence of the disease?
  - Note: Information to obtain about specific diseases (e.g., malaria, TB) and methods for obtaining that information are described in a table in Step 2.3.

B. The health status of the host population.

- What are the characteristics of the population (i.e., the number by age, sex, geographic location, ethnic group)?
- How many deaths are occurring each day (by age and sex)?
- What are the causes of the deaths (by age and sex)?
- What is the nutritional status of the population?
- What is the degree of interaction between the refugee and the host populations? (For example, how many refugees have been assimilated into the host population? Are the camps open or closed? Do refugees intermingle freely with the host population? To what extent do refugees use host population's health facilities?)
- How does the health status of the refugees compare with that of the host population?
- What is the prevalence and the incidence of any communicable diseases that are occurring?

C. The conditions in which the refugee population is living.

- Are there disease vectors (e.g., mosquitoes, flies, rats)?
- What are the current and expected (short- and long-term) weather conditions?
- Is there an adequate supply of fuel for the population?

D. The health-related relief activities which are occurring and the resources available (i.e., facilities, personnel, materiel, funds) for the refugee population.

Whenever possible, obtain data in order to answer the following questions:

- Is there an effective administrative structure running the relief operation? What, if any, problems exist (such as, in intra- and inter-agency communications, in delegation of responsibilities, in routine inspection of all work performed, or in the procurement and transportation of materiel (e.g., vehicles, fuel)?

- Are there public health teams, including individuals such as a sanitarian, a nutritionist, a nurse to run special treatment programs, etc.?
- Is there an effective record-keeping system for monitoring acquisition and distribution of all materiel? If so, is it being used to make decisions?
- Is the water supply adequate for the population? Is the quality of the water adequate? Are the water sources protected from contamination? Is the water distribution system effective? Do the people have adequate water containers? How effective will any plans be to correct problems related to the water supply?
- Are food supplies (normal and supplemental feeding) adequate for the population? Is the quality of food adequate? Is the type of food appropriate for the population? Is the food distribution system effective, i.e., is food reaching all members of the population? Do the people have sufficient and appropriate cooking containers? Is there enough firewood for cooking?
- Is the system for disposal of refuse adequate for the population and for existing and expected weather conditions? Is refuse from health facilities disposed of properly? (For example, are medical dressings and needles being disposed of properly, i.e., under supervision, needles broken-off, syringes incinerated or crushed?) If there are garbage containers, are they being emptied and cleaned frequently enough?
- Is the system for disposal of human waste adequate for the population, considering the weather forecasts? If there are latrine facilities, are they being cleaned and maintained?
- Is there an effective vector control program? Will a vector control program be necessary (e.g., for flies) if a rainy season is approaching?
- Does the population have sufficient and appropriate clothing and blankets?
- What health facilities (e.g., dispensary, hospital, laboratory, local "traditional" health-care facilities) exist? Are they adequate (types, sizes, locations, quantity, and quality) for the current and expected population? Are they being used? Are there adequate medical supplies (e.g., medicines, vaccines) for the current and expected population? Is the distribution system for medical supplies adequate? Is the necessary equipment (e.g., cold chain equipment) available and functioning?

- Are major diseases being treated correctly?
- If there are health facilities, are the diagnosis and treatment activities effective? Is there an effective outreach program for the individuals who don't enter the health facilities? Are drugs and vaccines being dispensed appropriately? Is there an effective follow-up program when necessary (e.g., for TB)? Are any patients not placed in the appropriate treatment program, e.g., are there any malnourished individuals not placed in the supplemental feeding program or any infectious patients not isolated?
- What are the types and numbers of personnel (from among and outside the refugee population) providing health care? Are the types and numbers adequate? Which personnel are lacking requisite skills and knowledge?
- Is there sufficient emphasis on preventive medicine and health education?
- Is supplementary or therapeutic feeding needed, and if so, available for malnourished children (especially those 0-4 years old), for pregnant women, for lactating women, for the ill, for the elderly?
- Are malnourished patients being released from the supplemental feeding program too early?
- Are there still malnourished individuals despite theoretically adequate diets?
- Is surgery confined to first aid and essential emergency operations?
- Is insecticide being misused, overused, or not used? (For example, are refugees returning to their homes too soon after spraying? Are the food and water containers and cooking utensils being covered when workers spray?)
- Is there an effective information-gathering system for morbidity and mortality? If so, is it being used to make decisions? What are potential changes in the situation that would warrant additional surveillance? Is data collection confined to information with direct impact on the relief operation?

## 2.2 Determine the time constraints.

### 2.3 Determine the methods to be used to obtain needed information.

Obtain information by whatever means seem most effective and efficient. The situation in which you are working may limit the methods you choose; for example, if there are no health facilities and no records have been kept, you may not have logbooks available. However, you may be able to find and train individuals to keep records. Methods which could be used to obtain information include the following:

- Contact individuals in the camp(s) (e.g., refugee leaders, medical director, health-care workers).
- Contact individuals outside the camp(s) (e.g., international relief organizations, local governmental authorities).
- Conduct screening surveys (survey of incoming refugees--based on interviews, physical examinations, and laboratory analyses).
- Analyze logbooks (if available) kept by hospitals, out-patient departments, dispensaries, laboratories, mobile health teams.
- Monitor conditions in the camp(s).
- Conduct sample surveys (surveys of residents based on interviews, physical exams, laboratory analyses).
- Conduct epidemiologic investigations (i.e., investigations of outbreaks occurring in the camp(s)).

Whichever methods you select, you will want to ensure standardization of data collection between camps. The following table contains examples of methods for obtaining additional information on specific diseases. Some of these methods employ laboratory services, which may not be available to you.

	IF YOU WANT TO OBTAIN THIS INFORMATION:	USE THIS METHOD:
Malaria	Can transmission occur in or around camp?	Search for mosquito vectors (to be conducted as seasons change, e.g., if monsoon occurs).
	What is prevalence of malaria in resident and refugee population?	Random surveys of residents and of refugees entering camp, including degree of anemia, blood smears, spleen survey.
	How frequently do patients with suspected malaria present to out- patient departments?	Survey of patients in OPD with fever and other symptoms.
	Which of the ill persons have malaria?	Rapid diagnosis in OPD - thick/thin film on each patient suspected of having malaria.
	What is best policy for prophylaxis? For mass treatment?	Reference to malaria literature and experts.
Acute or chronic malnu- trition	Is there malnutrition? What is the prevalence (by degree of severity and age group)?	Random sample survey for malnutri- tion, using weight for height measurement with 80% wt/ht (WHO standard) an indicator of malnutrition.

#### 2.4 Obtain information from log books kept by health-care workers.

Log books may have been set up during the initial rapid assessment. If not, set up record-keeping in log books. Refer to Step 2.1 for a checklist of the information to gather. As time passes, you may identify additional records which should be kept. Design forms and request that the information be collected.

You will have to find individuals to keep the records and compile the data for you. Monitor the records being kept. Take any steps necessary to not only ease the task for the record-keepers but also to ensure the accuracy and completeness of the record-keeping. For example, you might decide to develop a set of guidelines and sample forms; this would ease your task of training individuals newly assigned the task and would allow you to set up the forms so that they are also easy for you to use.

Information should be compiled on a daily basis and should be analyzed on a weekly basis. If it is possible to set up log books in camp health facilities, refer to Appendices 4, 5, 7, 8, 10, and 11 for sample record forms which can be kept.

However, if, for example, there are many camps, there are no health facilities, and/or there are not enough people to help you set up an elaborate surveillance system, you could set up a simple system in which basic information could be gathered, and reported on a monthly basis. (Refer to Appendices 12 and 13 for a sample Refugee Camp Monthly Surveillance Report form and a sample Regional Monthly Report form.)

A problem that is likely to occur is that health-care workers may believe they are too busy to keep the records. The solution to this problem will vary with each situation, since the individuals differ. However, it is essential to keep all forms simple and to provide individuals keeping records with any supplies they may need (such as a metal tape measure and a scale). In addition, it is essential to consistently provide the individuals with feedback based on the data they have helped to compile.

#### 2.5 Monitor conditions in the camp.

Refer to Step 2.1 for a checklist of information to obtain.



Obtain this information by observing conditions and asking questions of individuals in the camp and the health facilities. There are many individuals within the camp who, if you make yourself accessible, can provide you with valuable information. These include the following:

- the group formally coordinating the camp activities
  - the group informally coordinating the camp activities
  - health-care workers (e.g., physicians, nutritionists, sanitarians, aides)
  - patients
  - interpreters
  - camp leaders and camp residents.
- Ask each relief group what services they can provide and verify this information.
  - Listen for rumors, for difficulties workers are encountering, and for patterns in types of cases. Indications of disease outbreaks or problems in the provision of health care often can be caught here even before they show up in the data.
  - Attend daily or weekly meetings such as the following:
    - camp coordination meetings
    - medical coordination meetings
    - public health meetings
    - meetings of refugee committees.
  - You may find it useful to provide services to health-care workers in order to get their support. For example, you could collect and analyze data on problems that concern the administrators.
  - If you initially obtain data from health facility logbooks yourself, you can get to know the health-care workers. In addition, there will probably be a frequent turnover of personnel. If you periodically circulate and collect these data, you can introduce yourself to new health-care workers, explain what you do, how you can be useful to them, and how you can be reached.

## 2.6 Obtain information from resources outside the camp.

Examples of the types of information that can be obtained from these resources include the following:

- What are the baseline data for prevalence and seasonality of major diseases for the refugee and host populations?
- What are the perceptions of the problems and needs?

- What are the customary treatment procedures, both indigenous and national, used for specific diseases?
- What are economic restrictions on the provision of health care?

Refer to Step 2.1 for a checklist of information to be obtained.

You can obtain this information through numerous resources, including the following:

- the coordinating relief agency
- local libraries
- the Ministry of Health
- local medical specialists who have active practices
- local nutritionists, sanitarians
- individuals associated with the medical schools (e.g., schools of tropical health)
- local general hospitals
- local sources of laboratory or statistical support
- other relief agencies.

Relief activities have to be carried out in conformity with the directives of responsible ministries. Find out what resources the host country has. (For example, see if the Ministry of Public Health has a newsletter which could be sent to you.) The relief operation has limited resources, and the host country will probably be astute at using limited resources, whereas methods you are familiar with may not be feasible.

Meetings in which relief agencies are coordinating their efforts may provide useful information.

## 2.7 Analyze the information.

Organize the information that you have been obtaining and analyze it in order to answer the questions specified in Step 2.1. It will then be possible to assess the situation.

## 2.8 Is there specific information you need to obtain by sampling the population?

If the answer to this question is yes, then you will conduct a sample survey. Proceed to Step 2.9. If the answer is no, proceed to Step 2.10.

## 2.9 Conduct a sample survey of the population.

Refer to Step 1.8 for a description of the tasks to perform when conducting a sample survey of the population.

2.10 Is there specific information you need to obtain through an epidemiologic investigation?

If there appears to be a disease outbreak, then conduct an epidemiologic investigation; proceed to Step 2.11. If not, proceed to Step 2.12.

2.11 Conduct an epidemiologic investigation.

If there are indications of an outbreak, obtain all information needed to identify the causes of that outbreak.

2.12 Analyze the additional information.

Organize the information that you have obtained, and analyze it in order to achieve the first four objectives of the ongoing surveillance operation. In other words:

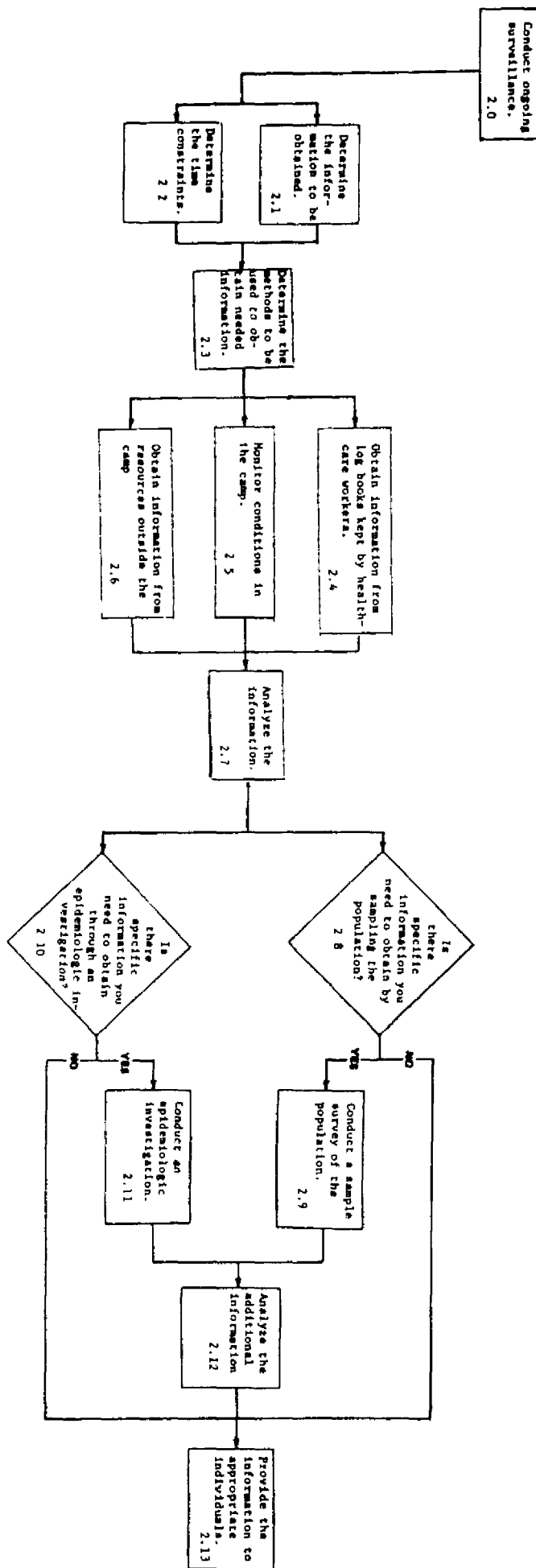
- Determine the existing and potential health problems in the refugee population (not only for those refugees living in camps but also for those who may still enter the camps) and in the directly affected host population.
- Determine the effect of the health problems in each population on the other.
- Determine which health-related relief services and resources are needed within the refugee population immediately, within the next three months, and for long-term relief.
- Determine what additional information should be obtained through the surveillance operation.

2.13 Provide information to appropriate individuals.

Promptly provide information gained in the surveillance operation to individuals involved in the relief activities, and keep the presentations clear, simple, and as brief as possible. The information is essential to increasing the effectiveness of the relief operation. For example, health-care workers cannot assess the effectiveness of their treatments without this information.

There are numerous ways to provide that information--both formal and informal, including the following:

- Distribute periodic reports or newsletters summarizing the results to all key health-care and relief workers. (Refer to Step 1.10 for a sample outline of a report.)
  - Develop a distribution list in conjunction with the Ministry of Health (MOH) and other involved national officials.
  - Clearance must also be obtained from the MOH for reports to be sent abroad.
- Hold information discussions with the medical coordinator, health-care workers and refugee leaders. (Without early and frequent feedback to health-care workers, surveillance activities will become unpopular and data collection will cease.)
- Also make presentations at meetings, such as those of the relief workers and those of the refugee leaders.
- Post summary tables on centrally located blackboards.
- Educate the camp population.
- If requested by national MOH, make recommendations for treatments of specific diseases. (However, these recommendations should be based on information obtained from senior specialists from both the host country and CDC.
- Explain to national authorities the possibility of sharing brief reports about observations made and experience gained with the readership of MMWR. Such reports must be authorized by the national agency responsible for the management of the relief effort. In addition, texts must be approved by them and co-authored by senior national colleagues.



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### 3.0 Are CDC epidemiologists still needed?.

A number of factors affect this decision, including the following:

- the opinion of the national Ministry of Health (MOH) and the Relief Coordinator (if different from the MOH)
- the opinion of the funding/enabling agency which requested CDC assistance
- the abilities of the long-term health-care workers (including members of the refugee population) to perform all of the necessary survey and/or surveillance functions and the need for continuation of training activities of national counterparts and other surveillance personnel.
- the likelihood of outbreaks that would have an impact on the rates of morbidity and mortality (due, for example, to the quality of health care being provided)
- the likelihood of an increase in the camp population
- the health status of the populations still to enter
- the need for CDC assistance at other camps (due, for example, to CDC's sponsoring agency extending its coverage)
- the opinion of CDC's program/policy management staff

If CDC will continue to participate in the surveillance operation, recommend to CDC:

- the number of epidemiologists or public health advisors
- the qualifications and characteristics that would contribute to the epidemiologists' or public health advisors' effectiveness

Return to Step 2.0.

If CDC's services are not needed, then proceed to Steps 4.0 and 5.0. In other words:

- 4.0 Discontinue CDC's involvement in the surveillance operation; and
- 5.0 Conduct a final evaluation of the surveillance operation.

4.0 Discontinue CDC's involvement in the surveillance operation.

In order to discontinue CDC's involvement in the surveillance operation, it will be necessary to perform the following tasks:

4.1 Provide individuals whom you have been training to perform the epidemiologist's functions with any needed final assistance.

With these individuals, assess the status of the operation in each camp, reviewing what activities are currently being performed and by whom and discussing what additional activities must still be performed.

4.2 Provide camp public health teams with any needed final assistance.

You may also find that it would be productive to discuss ongoing activities with the camp public health teams.

## 5.0 Conduct a final evaluation of the surveillance operation.

The individual supervising the surveillance operation may want to ensure that the operation is evaluated. The knowledge gained from a final evaluation can be used to improve the performance of the individuals who will continue managing this surveillance operation, to improve the future performance of the epidemiologists who worked in this operation, and to improve the performance of CDC officers who will be sent in the future to similar operations.

The tasks involved in conducting a final evaluation of the surveillance operation include the following:

### 5.1 Evaluate achievement of the objectives.

- Determine to what extent the purpose of the operation was achieved, i.e., to what extent unnecessary morbidity and mortality were prevented.
- Determine to what extent each objective was achieved.
- Analyze the data collected for the entire operation, summarizing the changes in the situation from the beginning of the operation to the present. Make final hypotheses, draw conclusions, and develop recommendations.
- Prepare a summary surveillance report. Include in the report a chronological review of the operation, analysis of the data, and recommendations for future surveillance and relief activities at these camps. (Refer to Step 1.10 for a sample outline of a report.)
- Distribute the summary surveillance report to appropriate individuals. Individuals to receive this report might include the following:
  - host government officials
  - individuals from the coordinating relief agency
  - camp medical directors
  - individuals assigned the responsibilities for continuing the surveillance operation
  - refugee leaders
  - camp health-care workers
  - individuals at CDC involved in this surveillance operation.

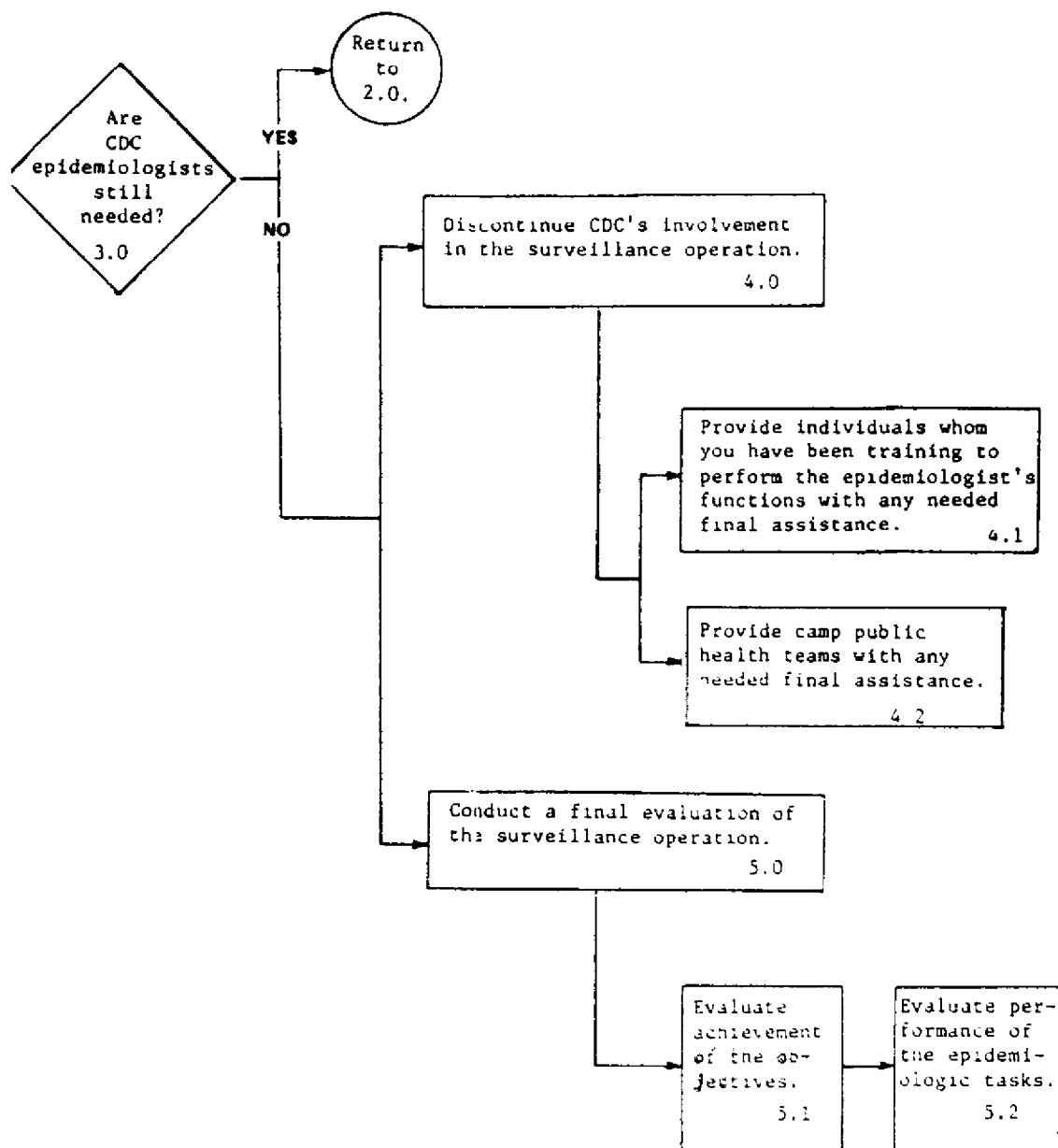
### 5.3 Evaluate performance of the epidemiologic tasks.

- Identify any problems that decreased the extent to which the objectives were achieved. Problems may range from the non-performance of key epidemiologic functions (such as not obtaining and analyzing morbidity data or not conducting epidemiologic investigations) to inadequate performance of key epidemiologic functions (such as collecting unnecessary data or not regularly analyzing the data obtained).



- Determine causes of the problems. Determine the actual or probable cause of each problem identified. You may find that one or more of the following types of causes applies in each situation:
  - Personnel lacked certain necessary skills and knowledge, e.g., all of the skills and knowledge necessary to conduct epidemiologic investigations.
  - There were obstacles which prevented personnel from doing their assigned jobs; for example, personnel may not have been explicitly told what epidemiologic functions they were to perform.
  - Personnel lacked the motivation to do their jobs adequately; for example, personnel may have perceived other work as more rewarding and may have performed this work instead of ensuring that the necessary epidemiologic functions were performed (e.g., they may have collected data useful for publication at the expense of collecting data which would improve the health status of the refugee population).
- Identify any methods or activities that facilitated achievement of the objectives and determine the reasons for their success.
- Determine how to most constructively use the information gained from this evaluation in order to improve the future performance of:
  - the individuals who will carry on this surveillance operation
  - the epidemiologists who worked in this operation
  - CDC officers to be sent out on similar operations

Provide the necessary information to whomever can make the most effective use of it. For example, if the individuals were not provided the knowledge needed to perform their work, revisions could be made in these guidelines!



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