

## PRINCIPLES OF ASSESSMENT

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### I. INTRODUCTION

Assessment, by definition, is an activity which involves the collection of data which objectively measure various aspects of the functioning of programmes. It is evident, however, that the activity cannot stop with data collection, but that these data must be analyzed, and, on the basis of this analysis, a decision must be made as to whether or not to change the programme. You will recognize the similarity of this concept to the concept presented of surveillance, which also involves the three elements of data collection, analysis, and action on the basis of the analysis.

During the remainder of the day, we will be referring to three forms of assessment: concurrent, "spot check," and terminal. I would like to discuss what we mean by these terms, and the role that each type of assessment is suited to play in a country's programme.

### II. CONCURRENT ASSESSMENT

Assessment activities undertaken by a country to provide a continuous flow of information on the functioning of a programme, as that programme is actually being conducted, are referred to as concurrent assessment activities. Dahomey is now completing a special multiple puncture vaccination project in an area in which the inhabitants have been noted for their resistance to vaccination. The techniques which the Dahomey programme is using to assess this project provide a good example of the range of methods which can and should be employed in doing concurrent assessment.

The principal method used is a sample survey of vaccinated areas to determine coverage rates and take rates. Dahomey has modified the usual survey method in order to use a single survey to determine both what the pre-campaign vaccination scar rates were and what changes have occurred as a result of the vaccination team's coverage. This has been extremely useful, since it has clearly defined what the target population ought to be, and it has provided information on the team's success in reaching it.

Other methods are also used. Each vaccinator keeps a daily record, listing the name of each village and hamlet in which he has worked. Beside each, he records the number of vaccinations he has performed, dividing them into the age groups of 0 through 4 years and 5 years or older. Within each age group, a distinction is made between primary vaccinees and revaccinees. The team's instructions are to vaccinate all children under the age of five, and to vaccinate those over five who wish to be vaccinated or who lack a previous vaccination scar. From these data, average daily work outputs are calculated for each vaccinator, tabulating both the total number of vaccinations per day and the number of primary vaccinations per day. With this information, vaccinators who are performing at sub-standard levels can be identified and corrective action can be taken.

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Within defined geographic areas, the total number of vaccinations performed in the under 5 age group can be compared to the number of children which the census of the area suggests should exist. This provides an estimate of vaccination coverage in small sub-sections of the population; the sample survey more accurately defines coverage but the figures, of course, are only applicable to the entire area included in the survey.

The list of villages and hamlets which the team has vaccinated is reviewed with local authorities of the area to identify any villages which may have been missed. The programme is also following vaccine usage as a guide to the accuracy of the vaccination figures which the teams submit.

These assessments resulted in changes in the Dahomey vaccination programme. Missed villages were visited, team members were re-trained in the multiple puncture technique after low take rates were documented, and work schedules were modified to place greater emphasis on health education when it was discovered that mothers were particularly reluctant to have their newborn babies vaccinated. The work outputs of the team members were reviewed and those persons who recorded vaccinating a high proportion of re-vaccinees were re-directed to the importance of vaccinating primary vaccinees.

The discussion of concurrent assessment will occupy a major proportion of our time for the remainder of the day and so I will not dwell on it further, except to say that this is by far the most important of the three types of assessment which we will be discussing.

### III. "SPOT-CHECK" ASSESSMENT

"Spot-check" assessments are nothing more than the name suggests: those activities which provide a quick and usually superficial look at the manner in which programmes are functioning. They can be considered to be a subdivision of concurrent assessment since they are usually done to provide information about some ongoing aspect of the programme, but I believe it is worthwhile to categorize separately to emphasize the fact that all programmes should be carrying them out, and that the information gained, while often superficial, is often extremely useful.

While "spot-check" assessments can be performed by anyone at any level in the programme, it is perhaps the only type of assessment in which persons at the programme director level have an opportunity to participate regularly, and directors who do not take this opportunity are doing a disservice to themselves and to their programmes.

Spot-checks on the activities of the vaccination teams can be particularly rewarding. During a visit to the teams which may last for no more than an hour, one can observe whether the "cold chain" employed by the team is actually keeping the vaccine at the desired temperature and whether good vaccination technique is being used. In this regard, it is often worthwhile to check the dosage setting of the jet injectors, and to verify that the smallpox injector is producing an adequate wheal on the arm. During a short walk through the area being vaccinated, one can obtain an approximate idea of the proportion of persons covered by the team and one can determine whether or not everyone is aware that vaccinations are being given. One can also pay a visit to an area that is scheduled for vaccination on the following day to determine whether adequate advance publicity has been carried out.

One should not be dissuaded from doing spot-check assessments for fear that the data obtained will not be statistically valid: in this type of assessment, one seeks to make simple and commonsense observations, and the statistical validity of these is of secondary importance. If one suspects but cannot statistically confirm that something is amiss, one can conduct a more formal investigation to obtain sufficient data to clarify the situation. In many instances, however, a few observations are all that are necessary to indicate that corrective action should be taken. Where one or more children show no vaccination mark and yet give a history of having been vaccinated that day, vaccination techniques clearly need to be reviewed with the team. Such a situation occurred on the first day we visited the special vaccination teams in Dahomey. In visiting several villages which had been the scene of a smallpox outbreak recently, the programme operations officer and I found that there were a number of unvaccinated persons who were sharing houses with smallpox cases still in their infectious stages. In a situation such as this, one does not need to ponder about the statistical validity of the finding! On the basis of this spot-check we were able to redirect the emphasis of the outbreak control teams to prevent this situation from recurring.

#### IV. TERMINAL ASSESSMENT

Assessments which are carried out at the end of the systematic vaccination phase of a programme can be classified, logically enough, as being terminal assessments. In regional programmes such as ours, the team is often given a more specific meaning, referring to a more or less total evaluation of a country's programme by persons who are not members of that programme. Such evaluations have already been completed in the Gambia, Northern Nigeria, Gabon, Western Nigeria, Niger, Dahomey and Togo, and will probably be carried out in several other countries during the coming year.

Thus far, these evaluations have had two components: a review of headquarters records and inspection of various elements of the programme and a sample survey of vaccinated areas of the country to determine the coverage achieved by the programme and the vaccination scar rate which exists in the population. This latter activity is carried out by a team of several persons. Efforts have been made in all past assessments to include on the survey team personnel from the programme being evaluated as well as personnel from programmes of neighboring countries. Each assessment has had a team leader who has been responsible for analyzing the data which have been collected, and for incorporating them into a report.

These assessments have had several purposes. They have been intended to provide an evaluation, as unbiased as possible, of a country's total programme, not only to identify weak points, but also to identify those factors which have contributed most to the programme's success. The hope is that countries within the entire region of West Africa might be able to learn from the success and failures of the programme of the particular country being evaluated. These assessments have also served other purposes. We have used them to test various techniques of conducting surveys and as a means of teaching assessment methodology to the personnel who have been involved with them. Personnel from neighboring countries who have served on a survey team have often benefited from seeing how the programme is handling certain common problems, and their pooled experience has been useful, in turn, to the country being evaluated. It should be mentioned that in addition to these "internal" purposes, the terminal assessments have a very necessary "external" use: they provide information which is used by USAID in considering the nature of future support to be provided to the programme in question.

As useful as we have found the terminal assessments to be, I would like to emphasize that they are no substitute for concurrent assessments since specific deficits may be recognized too late to be of use to the programme being evaluated.