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SUMMARY CONCURRENT ASSESSMENT

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Three basic types of assessment have been discussed: 1) concurrent - including both collection of tally data and periodic sampling to determine coverage, 2) "spot checks" or informal appraisals of vaccination coverage, and 3) "terminal" assessment.

Of the forms of concurrent assessment discussed, each is useful and can be complementary to the others. If means are available to the country to pursue all forms, all should be done. The existence of a formal concurrent assessment team, operating continuously, can be bolstered by using "spot-checking" as a supervisory tool to stimulate the assessors and to assure that their job is being done adequately.

I would like to summarize the fundamental objectives of assessment as they have appeared in discussion:

1) To determine if the population is being reached

2) To determine if those reached are being immunized. The determination of "take rates" is especially critical among those who are non-immunes, i.e., primary vaccinees

3) To determine, if the population is not being reached or is not being immunized, why this is so.

4) To initiate corrective action based on the findings. As was said by Dr. Ralph Henderson, the collection of data means nothing without analysis followed by corrective action based on the interpretation. Corrective action has been illustrated by:

   a) immediate action to correct areas of poor coverage and

   b) alteration of programme operations to avoid repetition of such errors in the future.

We have heard examples of all those. The corrective actions taken have varied:

1. Immediate changes in team questions have been initiated on the basis of spot-check assessment to increase emphasis on younger age groups.

2. In Guinea, a "follow-up" vaccination team has been created to bolster vaccination coverage in those areas where the level of coverage is unacceptable and in addition, the total programme approach was re-designed in Guinea to avoid low coverage in small villages.

3. In the mid-West State of Nigeria, the results of assessment are being considered to revise the estimated target population for maintenance vaccinations to be done six months hence.

I would like to emphasize the inter-relationship between assessment and surveillance. As has been said previously, the elimination of smallpox is the ultimate assessment of programme success. This is very true and I support the concept entirely.

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However, achieving nil cases depends on a series of specific, sequential events. Concurrent assessment makes it possible to assure the success of each of these sequential steps which in turn assures the success of the programme as a whole.

Assessment and surveillance are inter-related. If cases are occurring in vaccinated areas, an assessment of vaccination coverage must be conducted as part of the basic epidemiological investigation to determine why the outbreak developed. Similarly, where assessments show poor coverage, corrective action should include an intensification of surveillance activities within the area.

Finally, the importance of assessment in maintenance operations should be noted. All that has been said about assessment during attack phase activities is even more true during the maintenance phase. With repeated cycles of vaccination, the expected turnout for periodic immunization will decline. In the maintenance phase, furthermore, the target group is small and selective, principally including young infants. Children in the under one year age group have traditionally been one of the hardest groups to reach with mass vaccination. Since newborns constitute the principal groups of new susceptibles, adequate coverage and 100% "takes" must be assured in this group. The success or failure of maintenance activities in preventing the re-establishment of smallpox depends on the continuing successful vaccination with high levels of coverage. The only way to assure this is through continuing concurrent assessment activities.

Before discussing terminal assessments specifically, I would like to make one point regarding the apparent complexity of field sampling techniques in concurrent assessment. An American author, Herman Wouk, wrote a book entitled "The Caine Mutiny." In it, the cynical protagonist describes to a shipmate his view of US naval operations in World War II: "The US Navy operates on a plan designed by geniuses for execution by idiots!" I do not tell this story in the belief that an analogy may exist within our programme! However, I think it can be said that complexity of design is not necessarily incompatible with practicability of execution. The complexities of survey design can be converted step-wise into relatively simple field operations. Our basic responsibility is to see that each assessor understands the specific demands of the sampling technique. Those of us who have done field surveys can attest to the fact that they are much easier to do in practice than they are to describe verbally.

A terminal assessment is done for several reasons:

1) It represents a single total programme review in which operations, assessment, surveillance, and administration, are placed under scrutiny.

2) It provides at a single point in time an accurate appraisal of current immunity levels throughout the total population.

3) It provides a means of estimating the history of smallpox in the area (by means of the age specific smallpox scar rate).

4) It provides an estimate of the total costs of the programme.

5) It permits each of the above to play a role in future planning.

To better illustrate these points, I should like to summarize the findings to date in the terminal assessments.

1) Overall coverage has been lower than expected in most countries. In only one of the five areas did the terminal assessment reveal an overall coverage of 80% or above. Small villages were generally less well covered than

larger ones for reasons principally of accessibility. However, smallpox scar rates indicated that smallpox appeared to have been as frequent in small villages as in large, indicating that one cannot afford to ignore the coverage levels in smaller villages.

2) The frequency of smallpox scars increases with age, as expected, due to the increased opportunities with age for exposure to smallpox.

3) The most dramatic point to be emphasized by the terminal assessment is the rapid dilution of "immunes" in the population under one year of age. This group must be considered as a moving cohort to which are being added susceptibles in increasing numbers every hour of every day. While "dilution" exists in older age groups by in-migration of unvaccinated persons, this dilution is generally insignificant in comparison with the rapid entry of susceptible children by birth.

The findings of the terminal assessments have very real implications for future plans. Attention is drawn again to newborns as the significant source of new susceptibles. All efforts must be directed to reach this group. The number of new births in West Africa approximates 4% of the total population annually. Therefore, unless specific attention is directed to this group, they could represent as much as 12% of the total population in three years. This is a substantial reservoir to support smallpox transmission.

While monotonous and difficult, the terminal assessments have proved highly revealing of problem areas. I should like to acknowledge the tremendous contributions made by Dr. Ralph Henderson and Mr. Hillard Davis in designing and conducting the terminal assessments. Terminal assessment is arduous and monotonous work, but nothing else can provide this type and amount of information. With a method in hand that has been well tested, all countries can and should conduct terminal assessments at intervals as maintenance activities progress. Maintenance will bring its own problems and terminal assessment can be used as a major means for elucidating and correcting them.