

Characteristics, advantages, and limitations of the methodologies used for monitoring vaccination coverage

Methodology	Characteristics	Advantages	Limitations
Coverage based on administrative registries	<ul style="list-style-type: none"> The numerator is the reported number of persons vaccinated and the denominator is the relevant official population figure. It may or may not be nominal. 	<ul style="list-style-type: none"> It provides periodic information for monitoring coverage progress It provides coverage information systematically for each type of vaccine based on time, place, and person. 	<ul style="list-style-type: none"> Depending on the quality of the data, both the numerators and the denominators can over- or underestimate coverage. The numerators can be affected by inaccurate recording of the place of residence or by the inclusion of migrant population that had not been considered in the program's total target population. If revaccinated people are registered and the registry is not nominal, the coverage will be overestimated. The official demographic data may contain errors or biases.
Rapid coverage monitoring door to door	<ul style="list-style-type: none"> It provides a rapid assessment of the proportion of people vaccinated in a small, conveniently selected area. It is used as supervisory tool. 	<ul style="list-style-type: none"> It is a simple, low-cost tool that provides information immediately. It is done by the local health team under the supervision of other levels, which means that it promotes evaluation of program performance and service improvement. 	<ul style="list-style-type: none"> The data obtained are not representative of the area evaluated, they cannot be aggregated, and they do not allow statistical inferences about the coverage. If the homes visited had a greater probability of being well vaccinated or if many homes were excluded because they did not have the information or did not participate in the rapid monitoring, the results can give the false impression that the entire population in the area of influence is well vaccinated.
Lot quality assurance sampling	<ul style="list-style-type: none"> It randomly selects lots that are relatively uniform internally. It establishes a minimum and a maximum value as criteria for acceptance. 	<ul style="list-style-type: none"> The data collection tools are relatively simple. It shows the relative uniformity of coverage between one lot and another. It is not necessary to have information on all the lots in order to make decisions; specific measures are taken for each lot as soon as the results are available. 	<ul style="list-style-type: none"> It does not estimate the coverage for each lot; it only tells whether or not the lot met the criteria for acceptance. By establishing a minimum value for deciding whether or not to accept the lot, there is a risk of concluding that the lots above that cutoff point do not require intervention. Thus, it is important to analyze the status of the lots that met the acceptance criteria. For high margins of acceptance (for example, 95% coverage) and narrow ranges of acceptability, the sample size needs to be large. LQAS has the same cost and logistic limitations as cluster surveys.
Cluster sampling coverage surveys	<ul style="list-style-type: none"> The sampling design is probabilistic, with random selection of the population. It allows for statistical inferences. 	<ul style="list-style-type: none"> It provides a direct measure of coverage of the population universe. It allows for the compilation of information on a larger number of variables by using more extensive forms than those used with the rapid methods. 	<ul style="list-style-type: none"> The method requires detailed planning and organization and specialized professionals, resources, and logistics. It requires a greater investment of time and resources to key in, process, tabulate, and analyze the data. Unlike LQAS, it does not allow conclusions to be drawn for every cluster in the sample. The estimates are interpreted by adding up the data for all the sampling units. The results can be affected by biases.