

BACKGROUND

Establishing the actual coverage of a health intervention is critical for health care services planning and evaluation. However, certainty regarding the coverage of vitamin A supplementation (VAS) campaigns has remained elusive. And administrative coverage generated with ordinary health systems data is typically higher than survey coverage figures.

During VAS campaigns in the DRC, delivered doses are recorded on tally sheets by the supplementing teams under supervision by the Chief Nurses of the Health Centers, who also collate these data for further processing at the health zone and provincial levels, and ultimately at the central level in Kinshasa. Results are communicated to Kinshasa via VHF radios, mobile phones, or, less commonly, actual documents. At each level, the numbers of children supplemented are summed up and, except at the supplementing team, village or street level, a coverage figure is calculated.

The definition of the denominator used for this calculation represents one of the most challenging factors in estimating the actual coverage in the DRC. In some places the number of children targeted for supplementation will come from local enumerations, but in most places the number of children is calculated using a coefficient. This coefficient may vary from year to year and even from zone level to provincial level.

Independent household surveys play an important role in validating reported coverage. Results from independent studies are already available. But the results of validation surveys themselves were questioned. It was thus important to design a comprehensive and robust survey and to allow the different partners to be involved in the planning and the monitoring of the survey.

OBJECTIVES

This validation study, undertaken in 2005, aimed to determine the effectiveness of a vitamin A supplementation campaign in covering all children with vitamin A capsules and the accuracy of the coverage calculation procedure currently applied by the health administrations.

METHODS

There were three components to the study: 1. A review of documentation, 2. A national household survey designed jointly

with partners, and 3. Interviews of health workers who had participated in the May 2005 campaign.

Survey design: The primary unit investigated was the health Area, which may contain anywhere from 2,000 to 13,000 people and from 5 to 20 villages or urban streets. A health Area is the geographical area covered by a health Center and it may spread over hundreds or thousands of square kilometers. Health Areas are grouped into Health Zones, Health Zones into Health Districts and Health Districts into Medical Provincial Inspections. There are altogether 11 Medical Provincial Inspections and roughly 7000 health Areas in the DRC. The survey team randomly selected 20 to 30 health Areas per province. The minimum sample size was 270 children 6 to 59 months old per province, but it reached 450 in the most populated provinces.

The survey team selected 15 households per randomly selected village or streets and one child per household. Altogether, the team surveyed 265 health Areas and 3975 households in one month (August 2005 - September 2005).

This survey cost 65,400 USD (US\$16.45 per household).

This study considered 3 definitions of positive answers indicative of a child having been given a dose of vitamin A:

1. Parents (n=2993) who recalled the child's VAS event with detail when initially questioned.
2. Parents with incomplete recall (color of capsule, how the capsule was opened, the location of the distribution site) of the VAS event (n=265)
3. Parents who initially did not recall the VAS event but responded positively when probed by the interviewer (n=290)

RESULTS

When only the positive answers from respondents who spontaneously remembered an event related to the supplementation site in detail were considered, the resulting coverage was 76.4 % [2993/3918] [range: 54.6 to 90.2 % in the different provinces].

However, when the positive answers from parents who could remember the event after being probed insistently are included as valid, the resulting coverage figure increased to 83.2 % [3258/3918] [range: 64.9 to 96.0 % in the different provinces]. And when all positive answers, including the incomplete recall, regarding the target child having received a vitamin A dose during the supplementation campaign were considered as valid,

coverage was estimated at 90.6 % [3548/3918] [range: 84.1 to 98.2% in the different provinces].

The official coverage was 87.4% [10,017,247/11,458,626] [range: 54.6 to 90.2% in the different provinces].

Consistently similar differences were also obtained at provincial level. Two provinces reported a figure over 20% higher than the overall survey average; and two other provinces which were late in reporting had results actually lower than the survey results.

One surprising result of this survey concerns the 6 to 11 months old category. According to the report, only 58 % [232/397] of the 6 to 11 were supplemented with certainty; and this figure is low in all questioning approaches. However, this trend was not picked by the reported coverage, which indicated an unusually high coverage. After further investigations into the collected data, it appeared that many of these babies, aged 6 to 11 months at the time of the survey, were too young to be supplemented at the time of the campaign.

CONCLUSIONS

Coverage varies with the approach taken to deal with recall failure and the intensity of the effort used to elicit a response from care givers.

Data quality was improved by applying three different questioning approaches to elicit a VAS response from informants and by the selection of representative samples for the national and the provincial levels.

The lengthy and complex methodology used in this survey may not be appropriate for coverage validation after each campaign. Validation surveys of probabilistic household samples should continue as long as uncertainty around the denominator used for administrative coverage estimates persists.

Past validation surveys have shown increasing coverage figures through the years: 50% in 2001, 60% in 2002 and 70.5 % in 2004. This evaluation survey has estimated coverage figures that are consistent with this trend.

The involvement of different partners in the design of the survey (MOST/USAID, MI, HKI, ESP and PRONANUT) also contributed to the credibility and acceptance of the results.

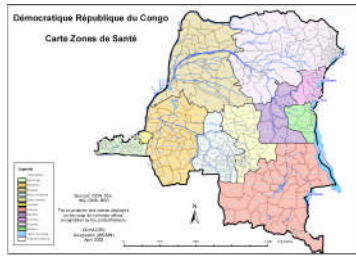


Fig 1: Map of the health Zones in the DRC.

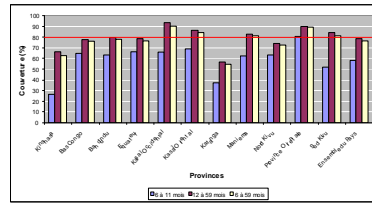


Fig 3: VAS coverage per province and per age category.

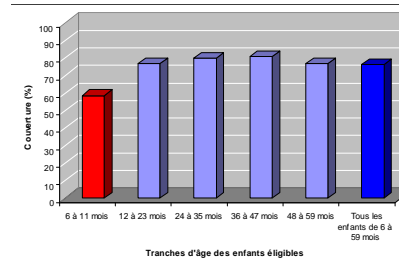


Fig 4: VAS coverage per age category.

Age category	Coverage %			
	Reported coverage	No recall	With insistence	Spontaneous recall
6 to 11 months	96.2	71.5	65.2	58.4
12 to 23 months	-	92.1	84.7	76.6
24 to 35 months	-	91.9	84.7	79.4
36 to 47 months	-	93.7	87.3	80.7
48 to 59 months	-	93.8	83.8	76.7
12 to 59 months	86.7	92.7	85.2	78.4
6 to 59 months	87.4	90.6	83.2	76.4

Table 1: Reported coverage compared to validation survey results

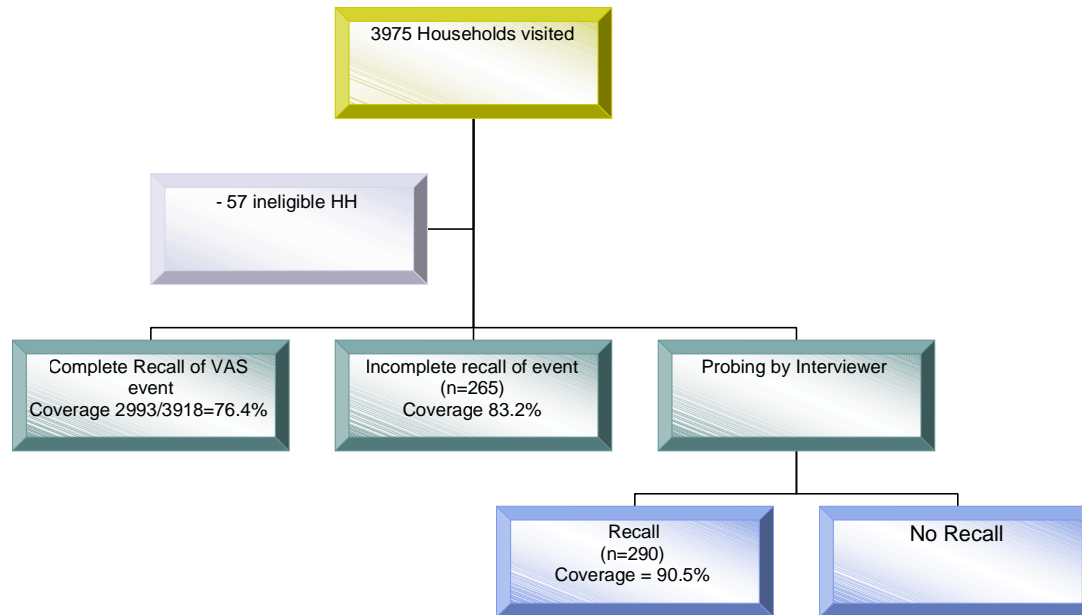


Figure 2: Definitions of positive responses and their effect on coverage estimates.