Post-campaign coverage survey of vitamin A administration carried out in June 2024 among children aged 6 to 59 months in six health regions supported by Helen Keller in Guinea.

FINAL REPORT



OCTOBER 2024

Search sites :	Conakry, Faranah, Kankan, Kindia, Labé, and Nzérékoré health regions
Type of study :	Mixed qualitative and quantitative study (WHO cluster survey, 2015 version)
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Study period :	July - August 2024
Study sponsor :	Helen Keller International
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LIST OF ABBREVIATIONS OR ACRONYMS

ACP : Principal Component Analysis AHC : Africa Health Consulting
AS : Health Agent
ASC : Community health workers
ASS : Sub-Saharan Africa
CNERS : National Ethics Committee for Health Research
COVID 19 : Coronavirus disease
CSV : Comma-separated values DAN : Food and Nutrition Division
DC-VAD : Community distribution of vitamin A and dewormer DEFF : Cluster effect
DNSFN : National Directorate of Family Health and Nutrition DPS : Prefectoral Health Department
EDS : Demographic Health Survey
GPS : Global Positioning System HKI : Helen Keller International
IC : Confidence index
INS : National Institute of Statistics
IRS : Regional Health Inspectorate
MoSo : Social mobilizers
MSHP : Ministry of Health and Public Hygiene NI : International Nutrition
ODD : Sustainable Development Goals
WHO : World Health Organization
NGO : Non-governmental organization
OR : Odds Ratio
EPI : Expanded Programme on Immunization
HIPC : Probability proportional to sample size RGPH : General Census of Population and Housing SAS : Simple random sampling
VAS : Vitamin A supplementation and deworming
UNICEF : United Nations Children's Fund
ZD : Enumeration area

ACKNOWLEDGEMENTS

The completion of this important mission was only possible thanks to the support of several stakeholders, including the National Directorate of Family Health and Nutrition of the Ministry of Health and Public Hygiene through the Food and Nutrition Division, Helen Keller Intl (country office and regional support team) and the Steering Committee. The success of this activity was made possible thanks to their support and that of all the other partners who provided multi-faceted support.

Our thanks also go to the officials of the various administrations who contributed at any level to this study, as well as to the collection teams, local guides and members of the households visited.

Their sustained efforts and collaboration enabled them to overcome difficulties in the field, obtain quality data and produce the various reports on time.

GLOSSARY

- **Coverage for supplemented children during the campaign**
  This term refers to the proportion of children who received vitamin A supplementation during the campaign period. This includes all children targeted by the campaign, regardless of other supplementation periods.

- **Coverage for supplemented children ONLY during the campaign period**
  This term refers to the proportion of children who received vitamin A supplementation only during the campaign, and who were not supplemented at any other time during the six-month period. This measures the exclusive impact of the campaign.

- **Coverage of children supplemented during the campaign AND at another time during the semester**: This item concerns the proportion of children who received supplementation both during the campaign and during another supplementation period during the same semester. It identifies children who had multiple access to supplementation.

- **Coverage of children NOT supplemented during the campaign BUT supplemented at another time during the semester**: This measure indicates the proportion of children who were not supplemented during the campaign but who received supplementation on another occasion during the semester. It assesses access to supplementation outside the campaign.

- **Coverage of children supplemented at another time during the semester**: This term refers to children who received vitamin A supplementation at some point during the semester outside the campaign. It includes all cases of supplementation outside the campaign, whatever the precise time.

- **Coverage of children not supplemented at all during the semester**: This item refers to the proportion of children who received no vitamin A supplementation during the semester, either during the campaign or at any other time. It can be used to identify children potentially at risk of deficiency.

- **Coverage of children supplemented during the semester**: This term covers all children who received vitamin A supplementation at least once during the semester, whether during or outside the campaign. It provides an overall measure of supplementation coverage over the whole six-month period.

SUMMARY

Study title

Post-campaign coverage survey of vitamin A administration in children aged 6 to 59 months, in six health regions (Conakry, Faranah, Kankan, Kindia, Labé and N'Zérékoré) of Guinea

Context

Vitamin A deficiency remains a health problem in much of sub-Saharan Africa and South Asia. Vitamin A supplementation is a vital intervention to reduce the risk of infant mortality, morbidity and malnutrition in countries with high levels of vitamin A deficiency. It has been successfully organized for children under the age of five in all Sub-Saharan African (SSA) countries, through door-to-door campaigns organized twice a year in the community or routinely in health facilities.
Guinea has been implementing vitamin A supplementation (VAS) campaigns for the past decades, twice a year in the 38 health districts with a target of at least 95% coverage. In 2024, the first round of VAS campaigns was organized by the Food and Nutrition Division (DAN) of the Ministry of Health and Public Hygiene (MSHP) in collaboration with technical and financial partners, including Helen Keller INTL and UNICEF, within the Nutrition Thematic Group.

Also, each year, Helen Keller INTL and other partners in collaboration with DAN/MSHP are committed to conducting at least one Post-Campaign Coverage (PEC) survey to measure the quality of interventions and assess and coverage rate of the latter's activities. VAS PEC surveys carried out over the past few years in Guinea have revealed coverage rates of 86% (i.e. 79% in urban areas and 89% in rural areas) in 2019, 72% (i.e. 60% in urban areas and 85% in rural areas) in 2020, 66% (i.e. 74% in urban areas and 66% in rural areas) in 2020 and 66% (i.e. 74% in urban areas and 66% in rural areas) in 2020.
rural) in 2022.

During the evaluation of the 2023 vitamin A supplementation campaign in the Faranah, Labé and Kankan regions, the cumulative coverage achieved was 80%. In 2024, following the first vitamin A supplementation campaign for children aged 6-59 months, coupled with deworming for children aged 12-59 months and birth registration for children under 2 months, held in six administrative regions of Guinea, DAN, with financial and technical support from its partner Helen Keller INTL, decided to carry out a survey of
post-campaign coverage in the 30 districts of six health regions of Guinea supported by Helen Keller INTL.

Objectives

The aim of this survey was to assess the quality of implementation of the mass vitamin A and deworming campaign activities carried out in the 30 districts of six health regions (Conakry, Faranah, Kankan, Kindia, Labé, and N'Zérékoré) of Guinea among children aged 6 to 59 months, and the health and nutrition interventions aimed at the target populations, i.e. children aged 6 to 59 months and women of childbearing age.

- Specifically, in the first round of the 2024 vitamin A supplementation campaign, the aim was to :
- Measuring vitamin A supplementation coverage for children aged 6 to 59 months;
- Identify the main reasons for non-administration of vitamin A ;
- Determine the level of knowledge of healthcare providers, distributors and MoSo agents, as well as mothers and/or childminders, about VAS activities;
- Evaluate the campaign implementation process (coordination, training, social mobilization, supervision and specifically the input supply chain);
- Assessing the satisfaction of beneficiaries of vitamin A supplementation activities
- Identify strengths, weaknesses, constraints and lessons learned, as well as bottlenecks in implementing the VAS campaign in each of the health regions targeted during the campaign;
- Formulate recommendations for improving the VAS strategy for implementation of the next campaign.

Methodology

I. This was a mixed cross-sectional study with a quantitative component based on a survey of and a survey of those involved in implementation, and a quantitative component aimed at community health workers and distributors. It consisted of a :

II. Household survey by two-stage cluster sampling according to the WHO post-vaccination coverage survey methodology version 2015 ;
III. Community agent survey (community distributors and MoSo) and
IV. Survey of community health workers.

Household survey

The study took place from July 28 to August 26, 2024 in the 30 districts of the six regions supported by Helen Keller Int during the first VAS campaign of 2024. All 30 districts were grouped into a stratum of 115 clusters.

Study population: Households with at least one child aged 6-59 months at the time of the first round of the vitamin A supplementation and deworming campaign in June 2024.

Minimum ***sample size***: **1142 households in 115 clusters.**

Survey of Community Health Workers (CHWs)

Target population: 115 community agents (distributors and social mobilizers-MoSo) attached to the sampled clusters and who actually participated in the June 2024 campaign as a distributor or MoSo.

Sample size: **115 ASC**

AS survey

Target population: health workers in the nearest health centers attached to the 115 sampled clusters who participated in the campaign and/or were involved in vitamin A supplementation activities in June 2024.

Sample size: **115 Health workers**

Study period: **July - August 2024**

Collection technique: face-to-face interview, using SurveyCTO mobile technology for data collection and transmission.

Qualitative survey

- Nationwide: 6 semi-structured interviews
- Regional and departmental: 30 semi-structured interviews
- Community level: 12 focus groups

Results

During the coverage survey for the June 2024 vitamin A supplementation campaign, 1,378 households were surveyed in 115 enumeration areas in six administrative regions of Guinea.

The survey counted 20,642 households in the 115 clusters, exceeding the 17,180 estimated by INS, thus ensuring exhaustive coverage. Of the 9,803 eligible households, 1,378 were interviewed, with a low refusal rate of 0.14%.

Data were also collected for 2,007 children aged between 6 and 59 months and 1,527 mothers, attesting to the quality of the data collection. In 85% of enumerated zones (ZD), the number of households exceeded INS forecasts, particularly in five regions, except in Kindia where results were closer to forecasts.

Household characteristics and access to healthcare services

- Of the heads of household surveyed, 80.2% were men, mostly aged between 30 and 39 and married (91.7%), with more than half having never attended school and mainly engaged in agricultural or commercial activities.
- Households surveyed had an average of 1.5 children aged between 6 and 59 months and 1.1 mothers or guardians, with women accounting for 98.2% of those responsible for children, 64.7% of whom had no schooling.
- The majority of mothers and guardians were married (88.8%), mainly in the 18-39 age bracket, with a high proportion of housewives (39.7%) and shopkeepers (20.4%).

- In terms of wealth, around 19.3% of households belonged to the lowest quintile, while the median quintile comprised 17.6% of households, according to an assessment based on non-food consumer goods.

Access to health services

- The majority of respondents (88.7%) visit public health facilities, mainly health posts and centers, which account for over 70% of consultations.
- Some 79.3% of households are located within 5 km of a healthcare facility, and the majority of trips are made on foot (60.5%), with little use of the car (9%).
- Consultation services for sick children and mothers are widely available, but hospital services remain limited, with only 19.6% of households having access to them.
- Over half of households (52.5%) have not received any community health visits in the last six months, although some visits have provided vitamin A supplementation and other basic services.
- Although the frequency of community health visits was deemed sufficient by 57.5% of respondents, some 38.5% expressed the need for more regular follow-up.

Information about the supplementation campaign and product knowledge

- More than half of households (58.2%) were aware of the campaign prior to its launch, indicating a partial but significant level of awareness among the population.
- Community relays were the main source of information for four out of five households, followed by town criers (25%), opinion leaders (24.5%), and radio (22.9%), with lower television coverage (8.1%).
- Although the majority of respondents (81.2%) had heard of vitamin A, significant gaps remain: 62.9% of respondents did not know when to administer the first dose, and 67.7% did not know the recommended frequency.
- Awareness-raising and education on vitamin A are mainly provided by community relays (45.4%) and health staff (30.8%), showing a need to step up information efforts on specific recommendations.
- Knowledge of vitamin A is low in the majority of households, with only 5.2% of mothers and guardians having good knowledge and 66.3% having a low level of understanding, underlining the importance of strengthening education on this subject.

Children's characteristics and VAS coverage

1. Characteristics of eligible children and verification of information

- The sample of eligible children was evenly split between boys (50.2%) and girls (49.8%), with the majority (89%) aged between 12 and 59 months.
- Less than 20% of children's birth dates could be verified using official documents, indicating limited use of health records or birth certificates to confirm age.

2. Coverage of vitamin A supplementation during and outside the campaign period

- Vitamin A coverage during the June 2024 campaign was 84.6%,.
- The majority of children (94%) received vitamin A at home, administered mainly by community health workers and community relays.

- A small proportion (8.3%) of children were supplemented outside the July 2024 campaign, mainly in June and July. The majority (82.5%) received supplementation at home, mainly administered by health workers.
- Around 7.2% of children were covered during and outside the campaign. However, 14.3% of children received no vitamin A supplementation in the first half of 2024, although 85.7 % received at least one dose during this period.

3. Factors influencing vitamin A coverage

- Age has a significant impact on coverage: children aged 12 to 59 months had higher coverage (85.5%) than those aged 6 to 11 months (77.5%).
- Coverage showed no significant difference between boys (83.8%) and girls (85.4%).
- Parental knowledge of vitamin A influences coverage: children of parents with high knowledge had 96.2% coverage, compared with 83.1% for children of parents with low knowledge.
- Household wealth quintile also influences coverage: children from the middle and secondary quintiles had higher coverage rates than those from the highest quintiles.

4. Obstacles to coverage and comparison with administrative data

- The main obstacle to vitamin A supplementation is lack of information, affecting 90.6% of cases not covered, while only 6.7% of families refused supplementation.
- Survey data indicate coverage of 84.6%, in contrast to administrative data which report coverage of 104%, suggesting administrative over-estimation.
- The July 2024 supplementation campaign played a crucial role in overall coverage, despite persistent gaps in awareness and distribution outside campaign periods.

Evaluation of the campaign implementation process

The campaign implementation process was assessed through the coordination of activities, input management, and the satisfaction of health workers and the beneficiary population. Overall, the implementing actors were satisfied with the coordination of the vitamin A supplementation (VAS) campaign activities. However, some raised challenges, particularly with regard to the mobilization of human resources:

- **Campaign coordination and collaboration**: The majority of regional and health district stakeholders (74%) rated the coordination of the vitamin A supplementation campaign positively, awarding scores of at least eight out of 10. Effective mechanisms, such as regular meetings and dedicated telephone lines, were put in place to ensure feedback during and after the campaign.

- **Perceived social mobilization**: Some 82% of the players involved rated social mobilization as favorable, with scores of eight to ten out of ten. A significant proportion rated mobilization as optimal (28.9%), but 11% of stakeholders rated mobilization as sub-optimal, awarding scores of 5 or 6 out of 10.
- **Feedback mechanisms**: Almost all stakeholders (97.4%) stressed the existence of effective feedback mechanisms throughout the campaign, facilitating problem-solving in the field and data synthesis.

Satisfaction of the beneficiary population

- **Health worker satisfaction**: 93.9% of health workers were satisfied with the training they received, with the majority expressing a high level of satisfaction. However, a minority considered the training too short or insufficient. With regard to the course of the campaign, almost all agents (97.4%) had been informed of the campaign's objectives, although 17.5% had not received any information on the timetable.

- **Community health worker (CHW) satisfaction**: 96.6% of CHWs were satisfied with the training and 95.7% were informed of the campaign's objectives. However, 40.5% felt that the resources required for the campaign were insufficient, and a significant proportion expressed mixed satisfaction with the assessment of available resources.

- **Beneficiary satisfaction**: The majority of mothers and caregivers were satisfied with the vitamin A supplementation campaigns, underlining the positive impact on their children's health. However, challenges linked to the organization and accessibility of services persist, notably the mobility of agents and the inadequacy of distribution teams.

- **Beneficiaries' perception**: Although many mothers and caregivers understand the importance of vitamin A, some express concern about the inadequacy of the constant supply. Reluctance also exists due to past negative experiences with other drugs, affecting confidence in the supplementation campaign.
    -

Conclusion

The conclusion of the coverage survey for the June 2024 vitamin A supplementation campaign demonstrates significant results but also highlights challenges to be overcome. The survey covered 1378 households in 115 enumerated areas across six regions of Guinea, providing comprehensive coverage that exceeded expectations in terms of the number of households enumerated, reaching 20,642 households, against the 17,180 initially estimated. Data collection was of high quality, with a low refusal rate (0.14%) and information collected on 2007 children and 1,527 mothers.

In terms of household characteristics, the majority of heads of household were men, often poorly educated and involved in agricultural or commercial activities. Households were generally close to health facilities, and most consultations took place in public health facilities. However, community health services remain insufficient, with over half of households not having received a community health visit recently.

Vitamin A coverage during the June 2024 campaign reached 84.6%, with notable differences according to age and level of parental knowledge. Children aged 12-59 months showed higher coverage than those aged 6-11 months, and coverage was better among parents with greater vitamin A knowledge. Gaps in awareness and distribution outside the campaign period were identified as major obstacles to more complete coverage.

Evaluation of the campaign implementation process revealed satisfactory coordination and a positive perception of social mobilization, although some players highlighted challenges relating to the mobilization of human resources and the management of available resources. Satisfaction among health workers and community health workers was high, although some considered the training insufficient in terms of duration and resources. On the beneficiaries' side, although most expressed satisfaction, concerns remain about the supply and accessibility of services.

In summary, although the vitamin A supplementation campaign was a notable success in terms of coverage and coordination, further efforts are needed to strengthen vitamin A information, improve access to community health services, and resolve logistical problems, particularly outside campaign periods.

1. INTRODUCTION

Vitamin A deficiency (VAD) remains a problem in much of sub-Saharan Africa and South Asia. Vitamin A supplementation is a vital intervention to reduce the risk of infant mortality, morbidity and malnutrition in countries with high levels of vitamin A deficiency. It has been successfully organized for children under the age of five in all Sub-Saharan African (SSA) countries, through door-to-door campaigns organized twice a year in the community or routinely in health facilities.

Guinea, like other countries, has implemented vitamin A supplementation campaigns over the last few decades, twice a year in the 38 health districts, with a target of at least 95% coverage.

Also, every year since 2018, Helen Keller INTL and its partners, in collaboration with the Food and Nutrition Division of the Ministry of Health and Public Hygiene, have committed to conducting at least one post-campaign coverage survey (PECS). This survey aims to measure the quality of interventions and assess the coverage rate of activities.

In 2022, overall VAS administrative coverage was 101% for the first run and 96% for the second run. In 2023, overall VAS coverage (the only run of the year) was 100%, as it was in 2024 for the first run. However, post-campaign evaluations revealed coverage of 80% in 2023 and 81% in 2024, showing differences between administrative and evaluative coverage.

Following the first VAS 2024 campaign for children aged 6-59 months, coupled with catch-up vaccination for children aged 6-59 months and birth registration for children under 6 months, held in the eight administrative regions of Guinea, DAN, with financial and technical support from its partner Helen Keller, decided to carry out a post-campaign coverage survey in the 30 districts of six health regions of Guinea supported by Helen Keller INTL.

The aim of the survey was to assess the quality of the campaign's implementation and to draw relevant lessons for evidence-based decision-making.

2. OBJECTIVES OF THE COVERAGE SURVEY

2.1 Objective

The aim of the survey was to assess the quality of implementation of the mass vitamin A campaign in 30 districts of six health regions (Conakry, Faranah, Kankan, Kindia, Labé, and Nzérékoré) of Guinea among children aged 6 to 59 months.

2.2 Objectives

Specifically, this involved :

- Measure vitamin A supplementation coverage in children aged 6-59 months during the campaign and in the first half of 2024 ;
- Identify the main reasons for non-administration of vitamin A ;
- Determine the level of knowledge of healthcare providers, distributors and MoSo agents, as well as mothers and/or childminders, about VAS activities;
- Evaluate the campaign implementation process (coordination, training, social mobilization, supervision and specifically the input supply chain).
- Assessing the satisfaction of beneficiaries of vitamin A supplementation activities

- Identify strengths, weaknesses, constraints and lessons learned, as well as bottlenecks in the implementation of the vitamin A supplementation campaign in each of the health regions targeted during the campaign;

- Evaluate the capacity and resources available in health facilities to implement vitamin A supplementation activities.

- Formulate recommendations for improving the vitamin and deworming strategy for the implementation of the next campaign.

2.3 research questions

To thoroughly assess the effectiveness of the vitamin A supplementation (VAS) campaign, the survey incorporated the following research questions:

i. What are the coverage rates of vitamin A supplementation and other related services for children aged 6-59 months during the campaign [in Helen Keller INTL support areas], and how do these rates compare with reported administrative data?

ii. What are the main reasons why children do not receive vitamin A supplementation and other services [in Helen Keller INTL support areas], and to what extent are caregivers aware of the benefits of vitamin A supplementation?

iii. How effectively was the campaign implemented (with a particular focus on the supply chain) according to established protocols, and what strategies can be recommended to improve future campaigns based on the results of this study?

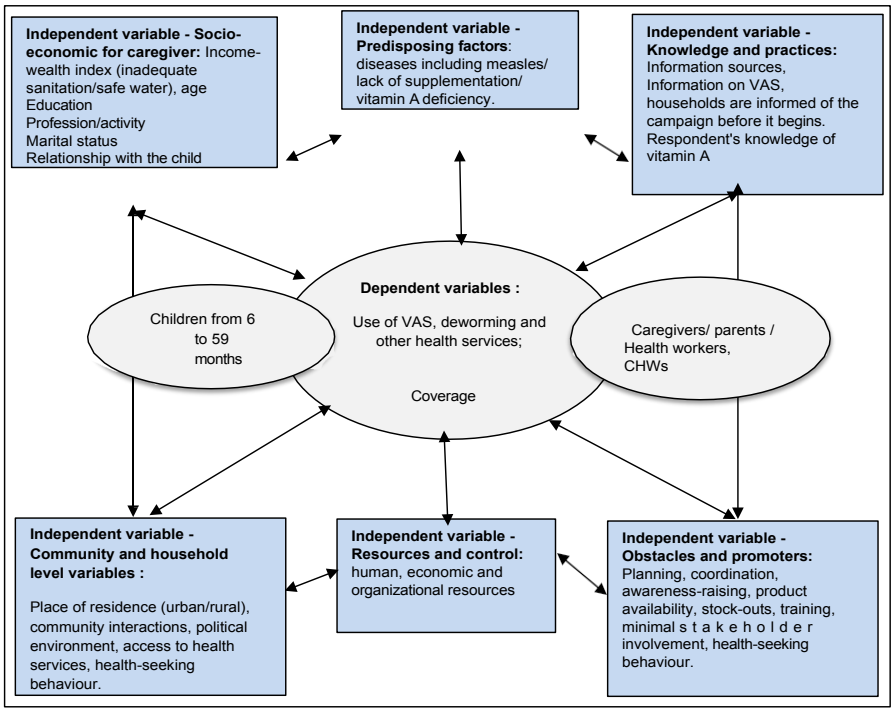
iv. How satisfied are beneficiaries with the VAS campaign and how do they perceive its effectiveness and the quality of service delivery?

These questions aimed to capture both the quantitative results of the campaign and the qualitative factors influencing its success, including the supply chain and beneficiary satisfaction, in order to provide a comprehensive assessment of the program's implementation and impact.

2.4 conceptual framework

The conceptual framework used identifies several individual, family and community factors that can facilitate or hinder the use of VAS, deworming and other health services by households. These include socio-economic characteristics, predisposing determinants, knowledge and practices of both the community and health workers, as well as resources and their control.

Figure 1: Conceptual framework showing the factors that can influence VAS coverage.



3. METHODOLOGY

3.1. Design

This study was part of a participatory approach involving the firm's research team and a steering committee made up of members of Helen Keller Intl and the Division Alimentation - Nutrition (DAN) of the Direction Nationale de la Santé Familiale et de la Nutrition (DNSFN) of the Ministère de la Santé et de l'Hygiène Publique (MSHP). This committee was responsible for providing the broad guidelines for the survey, validating all stages of the process and was regularly informed of the survey's progress.

For this survey, the design office provided support for :

- ✓ Finalize study protocol
- ✓ Recruit and train collection agents (interviewers and supervisors);
- ✓ Developing collection agent manuals
- ✓ Organize and supervise data collection;
- ✓ Enforce and apply appropriate ethical standards throughout the research process;
- ✓ Process and analyze survey data;
- ✓ Write the survey report.

3.1.1. Type study

This was a mixed cross-sectional study.

The quantitative component followed the methodology of cluster coverage surveys (Practical Guide to Implementing WHO Post-Campaign Vaccine Coverage Surveys, 2015), which is a rapid, standardized and simplified survey method. Clusters were drawn randomly in accordance with the method of probability proportional to the estimated population size. The weight of each place of residence was based on data from the 2014 Recensement Général de la Population et de l'Habitat (RGPH3).

In summary, the quantitative survey consisted of a :

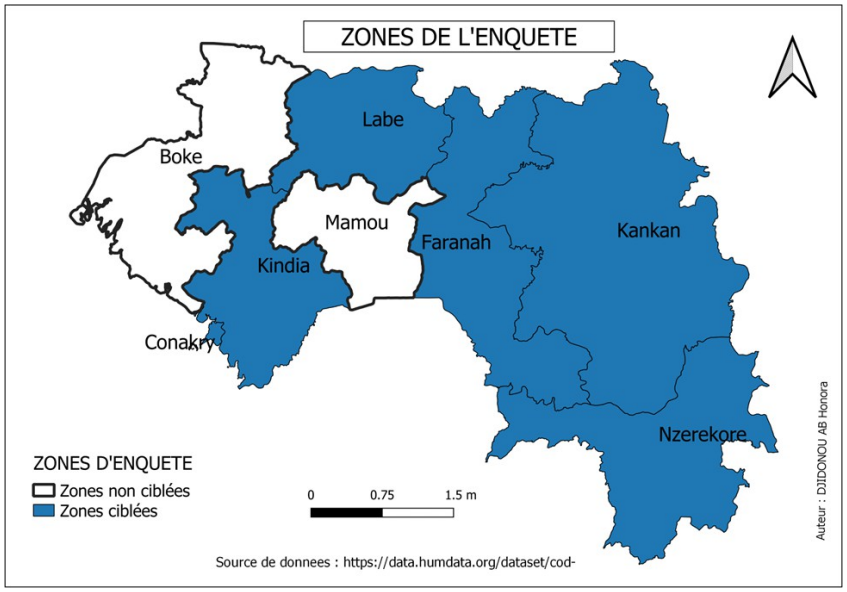
(i) Household survey ;
(ii) A survey of Regional Health Inspectors (IRS) and Prefectural Health Directors (DPS);
(iii) Survey of health workers and ;
(iv) Community stakeholder survey ;

The qualitative component consisted of interviews with representatives of the DAN, regional inspectorates, health districts and health areas. In addition, focus group discussions were held with mothers, fathers and caregivers.

3.1.2. Frame of the study

The study took place in six (6) of Guinea's eight health regions. These were the special region of Conakry and the regions of Kindia, Labé, Faranah, Kankan and N'Zérékoré.

Figure 2: Map of regions covered by the PECS 2024 survey in Guinea



3.1.3. Study period

The survey was carried out over a period of two (02) months from July to August 2024, and data collection in the field took place from July 28 to August 26, 2024.

3.1.4. Target population

a) Household survey

The household survey assessed the quality of the campaign's implementation and the post-campaign VAS coverage rate, as well as the level of knowledge about vitamin A at household level.
Data collection also enabled us to assess the coverage of nutrition activities for children aged 6 to 59 months.

The target population for this study was :

- Households with children aged 6 to 59 months living in the DZs drawn from the six target regions;
- All children aged 6 to 59 months living in households at the time of the campaign (June 28 - July 02, 2024);
- Mothers/guardians and fathers of children aged 06 to 59 months in the selected household.

Sample size :

The sample size was calculated from the WHO 2015 reference manual using the following formula:

n = A*B*C*D*E

With

A: the number of strata to be considered for the survey. In our case, this is a stratum made up o f all six regions (Conakry, Kindia, Faranah, Kankan, Labé and N'Zérékoré);

B: The sample size that would be required if a Systematic Random Survey (SAS) were used. According to WHO 2015 guidelines, we obtain B= 300, corresponding to an expected coverage of 80.8% which represents the coverage obtained during the last coverage survey, a desired precision (half length of the confidence interval) of 0.05 and an Alpha =5% for a confidence level of 95%, as recommended by WHO-2015 ;

C: Cluster effect (DEFF). We obtained DEFF= 3.72947 by setting m = 10 and ICC=1/6 as recommended for post-campaign surveys by the WHO, with m designating the number of households to be selected per cluster;

D: Average number of households to visit to find 1 eligible respondent: here we retain D= 1 because previous post-campaign surveys give us a minimum average of one (01) child under 5 per household visited;

E: Non-response inflation factor = 1.020; we have assumed a minimum response rate of 95%, taking into account data from the post-campaign surveys we have piloted.

All these parameters (A, B, C, D and E) give us :

n=A*B*C*D*E = 1x306x3.72947x1x1.020 = 1166 households to visit with a minimum of 1142 completed interviews

Table 1: Survey sample size

Sample size		
A x B x C = N_cs	1 142	Total number of completed interviews required
N_cs x D x E	1 166	Total number of households to visit (total household sample size)
D x E x m	11	Number of households per cluster
Number of clusters	115	Total number of clusters
Number of strata	01	

The minimum sample size required was **1142 households to be visited in the 115 clusters and one stratum after enumeration.**

The sampling plan

A stratified, two-stage cluster survey was carried out. The stratification criteria are the regions accompanied by Helen Keller and those that are not.

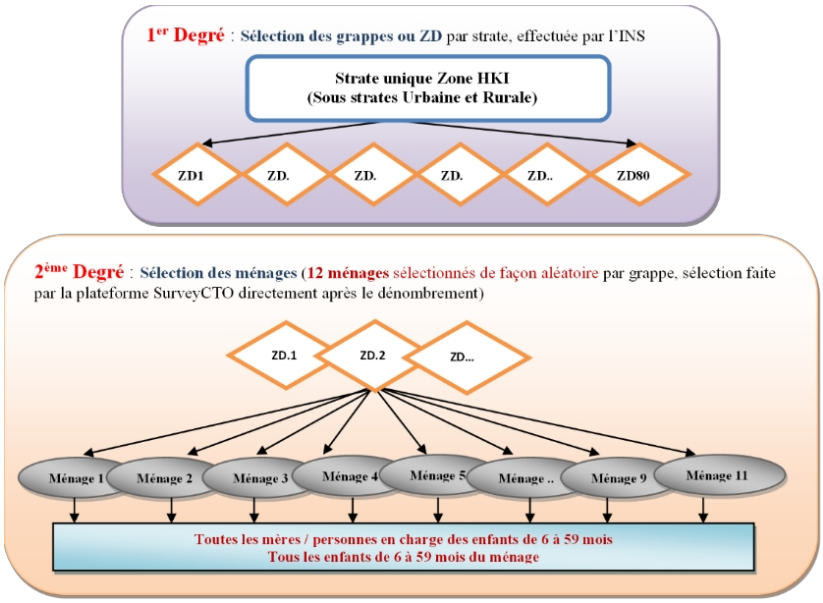
❖ ***In the first degree: pulling bunches***,

Table 2: Distribution of clusters by stratum for the pilot and actual surveys

STRATES	Number of ZDs		
	Survey	Replacements	Pre-test
Conakry	20	1	-
Kindia	20	2	20
Labé	14	1	-
Faranah	13	-	-
Kankan	26	4	-
Nzérékoré	22	-	-
Total	**115**	**8**	**20**

❖ ***Second degree: Household draw***,

The diagram below summarizes the process of drawing the GRAPPEs and selecting the households to be surveyed.



Sampling plan diagram

Collection tools

The following collection tools were used:

- Household enumeration form ;
- Household questionnaire ;
- Supervisor form ;

- Health Agent Questionnaire ;
- Community Relay/Community Distributor Questionnaire ;
- Interview guide for mothers
- Fathers' interview guide
- Interview guide for healthcare providers

In addition to these collection tools, the following tools were used for supervision and quality control:

- Monitoring and quality control form for supervisors ;
- Supervision grid

Finally, the free and informed consent form was used to obtain free and informed consent from participants.

b) Community relay survey

Type of study: A cross-sectional survey was carried out.
The target group: community health workers (CHWs) involved in vitamin A distribution (routine or campaign) in the 115 target DZs.
Inclusion criteria: all active ASCs in the enumeration area were considered.
Exclusion criteria: CSAs absent on the day of the survey were excluded.
Sampling: The complete list of DZ CHWs was obtained from the health center manager. The name of each CHW was then written on a piece of paper and placed in a container. A health center staff member drew the names without giving them out. The person whose name was written on the drawn piece of paper was then interviewed. If this person was absent, the same procedure for the draw was repeated.
Collection tools: the "Relais Communautaire/Distributeur Communautaire" questionnaire was used to collect data.

Sample size: 115 ASC.

c) Health Agent (HA) survey

Type of study: A cross-sectional survey was carried out.
Target group: EPI agents or their replacements
Inclusion criteria: all EPI agents or their deputies or replacements involved in campaign activities in one of the 115 target DZs were considered.
Exclusion criteria: agents absent on the day of the survey were excluded.
Sampling: The choice of health agent in each cluster was systematic. This was the EPI agent or his/her deputy if the latter had been involved in campaign activities. In the absence of the health agent or his/her deputy, the person to be surveyed was the one who had been most involved in campaign activities. If the cluster included two or more health centers, a draw was made between the health centers.
Collection tools: The Health Agent questionnaire was used to collect data.
Sample size: 115 health workers.

3.2. Protocol development and approval by the ethics committee

The research protocol and data collection tools were adapted from the standard protocol made available by Helen Keller Intl. Following various comments from Helen Keller Intl and DNSFN, the ethical submission dossier was drawn up and submitted to the National Health Research Ethics Committee (CNERS) for approval on July 1, 2024 (N.142/DNSFN/MSHP/2024). In its response letter No.113/CNERS/24 dated July 17, 2024, the ethics committee requested amendments, which were made. The corrected version was submitted to CNERS on July 22, 2024. Final approval was obtained on July 26, 2024 under No. 116/CNERS/24.

3.3. Recruitment and training of collection agents

Interviewers and supervisors were recruited on the basis of a call for applications and criteria including experience with previous surveys, knowledge of the field, language skills and immediate availability for the field. Gender was taken into account as a cross-cutting criterion to ensure good female representation.

The training of interviewers and supervisors took place from July 16 to 19 at the headquarters of Africa Health Consulting in Yembeyah, commune of Lambanyi, Conakry. It was attended by 68 participants, four staff from the firm and five program assistants from Helen Keller Intl. It was chaired by the Head of the Food Nutrition Division of the National Directorate of Family Health and Nutrition of the Ministry of Health and Public Hygiene.

The training was designed to prepare participants rigorously for data collection in order to guarantee quality and methodological rigor. Participants were trained in the use of electronic data collection tools, becoming familiar with their handling and the resolution of technical problems. The training covered various topics, such as map reading and delimitation of enumeration zones (ZD), enumeration, drawing households, conducting the household survey, conducting interviews and group discussions.

3.4. pilot survey

The pilot survey was organized on July 20, 2024 after four days of intensive training at Africa Health Consulting's Conakry headquarters for all agents. It took place over one day in the Coyah health district, located 50 km from Conakry. This pilot survey was crucial for testing the various components of the data collection process, involving 20 teams set up for the p u r p o s e . The main objective of this phase was to put into practice all aspects of the survey, from interactions with health facility managers, village/quartier chiefs and guides, to cluster delimitation, as well as the use of SurveyCTO data collection software.

The pilot survey focused on several key aspects: testing the questionnaires to ensure they met the survey objectives, assessing the average time taken to administer the questionnaires, and verifying the interviewers' skills in using SurveyCTO on cell phones for data collection. The efficiency of the SurveyCTO application, in particular its ability to transmit data, was also tested. Difficulties encountered were identified, enabling appropriate solutions to be developed and data collection tools to be finalized on the basis of the results obtained.

Following the pilot survey carried out in Coyah, a debriefing session was held on July 22, 2024 at AHC headquarters to discuss the results of the pilot survey and determine whether any changes to questionnaires or procedures were required. This meeting consolidated the gains of the pilot survey and effectively prepared the teams for the forthcoming data collection, ensuring that all members were aligned with the methodological and ethical objectives of the study.

Of the 65 people who took part in the pilot survey, AHC selected 40 interviewers and 20 supervisors to form the 20 teams for the actual data collection work. Interviewers were selected on the basis of their understanding of the subjects covered, their motivation and their general demeanor. Teams were formed under the guidance of a team leader/supervisor, without discrimination on the basis of gender.

3.5. Quantitative and qualitative data collection

The survey took place from July 28 to August 26, 2024 in the six regions supported by Helen Keller Intl in Guinea by twenty teams each consisting of a supervisor and two interviewers, making a total of 60 agents (20 supervisors and 40 interviewers). Of the 20 supervisors, 05 were women, and of the 40 interviewers, 20 were women. In total, out of the 60 agents selected, 25 were women, i.e. almost 42%. Each team member was equipped with a smartphone for data collection and transmission. Team leaders, who also acted as supervisors, were responsible for distributing the workload, checking the completeness of the data collected and conducting interviews with health staff and community agents. They were also responsible for ensuring compliance with ethical standards and the professional conduct of their team, while coordinating with local authorities.

- **Phase 1: Reconnaissance / delimitation and enumeration of the enumeration area / cluster**

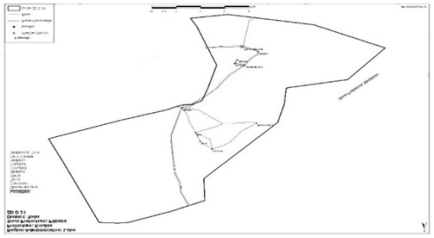
The following approach was used to recognize, delimit and count each DZ:

- Once in the target locality, the team made contact with local authorities and identified a local guide to assist with the count.
- The process began with the identification of the cluster, using the DZ (cluster) maps designed by INS and made available to the teams during training. Using the landmarks on the map, the team identified and delimited the cluster.
- Then, before starting the household enumeration, a starting point was designated, from which the team moved from household to household, covering the entire cluster.
- In cases where a large part of the cluster was uninhabited (e.g. occupied by farmland) and all the inhabitants lived along a road or waterway, the team would go round the whole cluster to count all the households in the cluster. If, unfortunately, the cluster was uninhabited due to displacement or exodus, a replacement cluster was requested from the coordination team.
- Each team had the task of finding out from anyone with sufficient information about the household (household members, neighbors, visitors, etc.) whether there were any children aged between 6 and 59 months living in the household, and whether any relatives were present during the campaign.

All households in the cluster were visited and marked.

Note that the team had to use a single device (tablet or phone) to carry out the entire count.

Figure 3: Map of Pilimili enumeration area



❖ **Phase 2: Household selection and survey**

At the end of the enumeration, the interviewers used the same application to enter the number of households to be drawn (e.g. 12) in the enumeration form. The application automatically generated random numbers for the 12 households selected.

Household collection :
Once the list of 12 households was known, the teams visited only these households to explain the survey objectives once again, obtain the respondent's consent and conduct the interview using the appropriate "Household" form.
At the end of the interview, the team took the time to thank the household and moved on to the next household on the list.

Data collection at health facilities and community relays:

In health facilities, the "Health Agent" questionnaire was used to collect data from EPI agents or their replacements. For community health workers (CHWs), the "Community Relay/Community Distributor" questionnaire was used to collect data from those involved in vitamin A distribution (routine or campaign) in the 115 target DZs.

Qualitative data collection

Qualitative survey

- National: 6 semi-structured interviews
- At regional and departmental level: 30 semi-structured interviews

At community level: 12 focus groups.

3.6. Monitoring and supervision during collection

During data collection, rigorous monitoring was implemented through daily meetings, which ensured that the quantitative and qualitative data collection operations ran smoothly. These meetings, held daily, brought together the team of consultants, Helen Keller Intl staff in Conakry, and staff from the regional office.

The purpose of these meetings was to review the progress of data collection, resolve any difficulties encountered, and adapt procedures as necessary. Before each meeting, a report detailing ongoing activities was sent to the steering committee, facilitating discussion and informed decision-making. These meetings played a key role in maintaining the quality of the data collected and enabling a rapid response to challenges encountered in the field, guaranteeing compliance with methodological objectives and established standards. They also provided an ideal forum for sharing progress, exchanging experiences and coordinating actions between teams.

During these meetings, strategic decisions were made concerning 27 clusters, which were taken back due to enumeration coverage rates below the 80% threshold, compared with the National Statistical Institute's projections for the number of households. In these cases, a team of consultants, accompanied by Helen Keller's supervisory team in the field, visited the site to carry out an in-depth verification. If there was no valid explanation for the discrepancy, the teams returned to the field to carry out another household count and draw.

In the field, the team of consultants also ensured strict monitoring of certain teams of interviewers to guarantee the quality of the work carried out. Each supervisor was responsible for checking at least 10% of the data collected by the interviewers. Each day, he randomly selected two households from those surveyed in each cluster to carry out a double interview. A quality control questionnaire, including key questions, was specially designed for this double interview to assess the coverage of services provided to the households surveyed.

3.7. Summary of quality monitoring indicators for data

This section summarizes the main indicators used to assess and ensure the quality of the data collected during the survey. It highlights the results obtained and the corrective actions taken to guarantee the reliability of the information collected.

- ✓ ***Comparison of the Number of Households Enumerated and Estimated by INS :***

Of the 115 clusters surveyed, 103 (89.6%) had a higher number of households counted than the Institut National de la Statistique estimates for each cluster. Interviewers and supervisors were alerted in the event of significant overestimation (more than 40% compared with INS data) or underestimation (less than 80% of the estimated size). Checks and reminders were carried out to ensure data accuracy.

- ✓ ***Average Form Administration Time and Investigator Follow-up :***

The average time taken to administer the forms varied according to the number of children (6-59 months) and mothers/caretakers in each household. A minimum threshold of 25 minutes per household was defined following the pilot survey. Interviewers whose administration time fell below this threshold were systematically called to order, and their supervisors were asked to monitor them closely to prevent any risk of fraud.

The average number of children and mothers/caretakers per interviewer was also checked. Cases where the average number of children or mothers/caregivers approached 1 were scrutinized, as they could indicate artificial underestimation in order to reduce administration time.

- ✓ ***Discrepancy between the number of children eligible for the census and the main survey :***

Particular attention was paid to discrepancies between the number of children eligible for the initial census and that observed in the main survey. Among the 1,378 households surveyed, no significant discrepancies were found, confirming the consistency of the data.

This rigorous monitoring and corrective action is designed to ensure data reliability and integrity throughout the data collection process.

3.8. Quality control of quantitative survey: enumeration and household survey

3.8.1. Comparison of PECS data and supervisor quality control data

Comparison of the data between the PECS survey and the supervisors' quality checks revealed varying levels of concordance. Discordances for data related to the respondent's gender were very low (6.67% for men and 0.25% for women), suggesting strong consistency in collection for this question.

For the gender of the child, the discrepancy is slightly higher (2.08% for boys and 1.83% for girls). These percentages remain low, however, and could indicate minor differences in data entry or transcription errors.

In terms of whether or not the vitamin was received, there was a discrepancy of 4.76% (No) and 0.60% (Yes): The low rate of discordance for this question, particularly for "Yes" responses, indicates that the collection data is globally consistent between interviewers and supervisors. This suggests that information concerning the receipt of vitamin A is well understood and uniformly recorded by the teams.

The recording of this information showed an absence of discordance for the "No" response, and the slight discordance for "Yes" shows good uniformity in the collection of this information. However, the slight discrepancy for "Yes" could be due to confusion regarding the verification of documentation by some interviewers or supervisors.

Knowledge of the next supplementation date shows a discordance of 0.50% for "No" and 14.29% for "Yes" respectively. The discordance is almost non-existent for "No", showing consistency in the case where respondents don't know the next date. However, the higher percentage for "Yes" suggests that some interviewers and supervisors may have interpreted knowledge of this information differently, indicating a need for clarification on this specific issue.

Finally, the question on biological motherhood revealed a discordance of 26.32% (No), 5.24% (Yes). The high discordance for the "No" response may suggest that interviewers and supervisors did not interview the same mothers or guardians within households. It is also possible that differences in interpretation of the terms "biological mother" or "guardian" contributed to these discrepancies. This variability highlights the need to ensure that each interviewer targets the same individuals within households for greater consistency.

Most of the variables show little discordance, however, questions concerning the age of children and the mother's relationship with the child show significant discrepancies. These discrepancies could be explained by difficulties in systematically identifying targets (same child and mother) within households. Reinforced instructions and rigorous control are essential to ensure greater uniformity in data collection on these aspects.

Table 3: Comparison of PECS and supervisor quality control data

Questions	Household data	Quality control data	Percentage of discrepancy	Total
Gender of respondent				
Male	8	7	6,67%	15
Female	197	198	0,25%	395
Child's gender				
Male	94	98	2,08%	192
Female	111	107	1,83%	218
At the recently completed VAS in June 2024, did the child receive vitamin A?				
No	30	33	4,76%	63
Yes	168	167	0,30%	335
Is this information recorded on the health record or another document?				
No	153	153	0,00%	306
Yes	15	14	3,45%	29
Do you know the next date for vitamin A supplementation in children?				
No	201	202	0,25%	403
Yes	4	3	14,29%	7
Does this child belong to the 12-59 months age group?				
No	13	22	25,71%	35
Yes	192	183	2,40%	375
Is this mother/guardian the biological mother?				
No	24	14	26,32%	38
Yes	181	191	2,69%	372

3.8.2. Comparison of PECS data and listening audios

To ensure data quality, some specific questions in the vitamin A section were randomly selected to assess the consistency and accuracy of the answers provided by the interviewers. These questions address various aspects, such as the child's receipt of supplementation, its registration, where and by whom it is administered, and any obstacles to supplementation. They also provide information on the frequency of visits to the health center and associated services, giving an overview of access to and use of vitamin A in our survey.

Listening to the audio recordings revealed a high degree of concordance between the answers collected and the data entered online, with only two questions showing slight discrepancies: Q8.2 ("Is this information recorded in the health record or another document?") with a 4% discrepancy, and Q8.6 ("Apart from the last supplementation campaign, has the child received vitamin A capsules?") with a 3% discrepancy. These questions are particularly relevant to quality control, as they enable us to check the accuracy and consistency of essential information on supplementation. Discrepancies, although minor, may be due to errors of understanding or difficulties on the part of interviewers in confirming certain details, particularly when health documents are required for verification.

Overall, this low level of discrepancy indicates good data quality, suggesting that the information captured accurately reflects participants' responses. The discrepancies observed appear to be related to one-off errors with no significant impact on the integrity of the overall data.

Table 4: Comparison of PECS data and auditory data

Questions	Concordant values between audio and database data	Discordant values between audio and database data	Percentage of discordance	Total Audio listened to
Q81	71	0	0%	71
Q82	47	2	4%	49
Q83	15	0	0%	15
Q84	39	0	0%	39
Q85	6	0	0%	6
Q86	31	1	3%	32
Q812	3	0	0%	3
Q813	2	0	0%	2
Q814	2	0	0%	2
Q815	2	0	0%	2
Q819	38	0	0%	38
Q816	2	0	0%	2

3.9. Independent monitoring of PECS

3.9.1. Independent PECS monitoring: Counting results

As part of the coverage survey, a team of independent monitors, led by a different consultant from the one conducting the main survey, was specially trained and deployed to ensure rigorous data quality control. This team carried out independent enumeration in 10% of clusters, i.e. 12 clusters, and surveyed households already interviewed by the main consultant's teams, checking the consistency between audio recordings and captured data to ensure accuracy. Daily analyses and reports were produced, enabling key indicators to be monitored in real time via a dashboard. Comparative results show that a higher household count was achieved in 4 clusters than in the initial coverage survey, and that in 10 clusters the figures were higher than INS projections, demonstrating the rigor and accuracy of the fieldwork.

In sum, the coverage survey (PECS) counted 2,586 households, while the independent monitors (IM) counted 2,161, against the 1,812 initially forecast, suggesting an initial underestimate and the need to adjust resources for future interventions.

Table 5: Summary of cluster counting results

Clusters	Nb. of households expected	Nb. of households counted (PECS)	Nb. of households counted (IM)
D18	188	305	198
DF488	131	193	164
C15	169	170	133
B09	149	150	156
H37	215	458	187
Y113	62	100	210
C11	128	131	280
D16	96	100	136
C13	98	115	152
B07	176	195	182
C12	164	428	154
A02	236	241	209
Total	**1812**	**2586**	**2161**

3.9.2. Independent PECS monitoring: Results of household survey

Table 5a shows the comparative results between the coverage survey (PECS) and the counter-survey conducted by the monitors to assess the quality of data on vitamin A supplementation. In this counter-survey, independent monitors returned to all households already visited by the PECS team. They interviewed a randomly selected mother or guardian in each household to confirm information on vitamin A supplementation for children aged between 6 and 59 months.

For the analysis, the variables were grouped into two categories. The first includes stable information, such as age, gender and relationship to the child, assumed to be invariant regardless of who was interviewed. The second groups variables specific to vitamin A supplementation, including questions such as "Who administered the product?", "Where did the child receive the product?", and "Do you know the date of the next campaign?", which may be sensitive to the answers given by different individuals.

The results show that for the stable variables (age, gender, relationship), no significant difference is observed between the PECS data and the counter-survey data, according to Student's test. On the other hand, for variables in the second category, significant discrepancies appear on certain questions:

Q8.2: "Is this information recorded in the health record?" (16% difference, $p < 0.05$) Q8.3: "Who gave the child the vitamin A capsule?" (33% difference, $p < 0.05$)
Q8.6: "Has the child received vitamin A in the last six months, apart from the last campaign?" (8% difference, $p = 0.008$)
Q8.19: "Do you know the next date for vitamin A supplementation?" (3% difference, $p = 0,042$)

These differences may be due to variations in the identity of respondents between the PECS survey and the counter-survey, as well as to potential difficulties for some respondents in accurately recalling this information or verifying data in health diaries. Overall, the low rate of discordance indicates good data quality, although the discrepancies for variables specific to vitamin A supplementation highlight the need to make interviewers and respondents aware of the importance of accuracy in the information collected.

Table 6a: Summary of the results of the household counter-survey

Variables	Pecs		Monitoring		Difference	p-val
	Average	n	Average	n		
Q7.1 What is the child's sex?						
Male	0,44	77	0,52	99	-0,08	0,111
Female	0,56	99	0,48	91	0,08	0,111
Q7.3 Ask for child's age in completed months						
[6-11 months]	0,14	27	0,14	162	0	0,982
[12-59 months]	0,86	25	0,86	151	0	0,982
Q8.17 Relationship of respondent to child						
Father	0,13	23	0,07	14	0,06	0,071
Mother	0,74	131	0,69	131	0,05	0,246
Uncle	0	-	0,04	7	-0,04	0,01
Aunt	0,05	8	0,05	10	-0,01	0,752
Tutor	0,01	1	0,03	6	-0,03	0,071
Grandfather	0,01	1	0,01	1	0	0,957
Grandmother	0,03	6	0,06	11	-0,02	0,281
Other	0,03	6	0,05	10	-0,02	0,387
Q8.1 During the recently completed vitamin supplementation campaign, did the child receive vitamin A						
No	0,09	15	0,08	15	0,01	0,827
Yes	0,9	158	0,86	163	0,04	0,247
Q8.2 Is this information recorded in the health record?						
No	0,92	145	0,75	123	0,16	0
Yes	0,08	13	0,25	40	-0,16	0
Q8.3 Who gave the vitamin A capsule to?						
Health agent	0,17	27	0,5	82	-0,33	0
Community health agent	0,82	130	0,5	81	0,33	0
Q8.4 Where did the child receive the vitamin A capsule?						
At the health center	0,01	1	0,01	2	-0,01	0,58
In the village	0,04	6	0,05	8	-0,01	0,63
At home	0,94	148	0,93	152	0	0,88
Don't know	0	-	0,01	1	-0,01	0,33
Other	0,02	3	0	-	0,02	0,08
Q8.4a. Are you satisfied with the place where your child received vitamin A						
No	0,01	2	0,05	8	-0,04	0,061
Yes	0,99	156	0,95	155	0,04	0,061
Q8.5 If the child did not receive this product, what prevented him/her from receiving it?						
Was not informed about the campaign	1	15	0,87	13	0,13	0,153
Refusal	0	-	0,13	2	-0,13	0,153
Q8.6 Apart from the most recent vitamin A supplementation campaign, has the child received vitamin A in the last six months?						
Yes	0,06	11	0,15	28	-0,08	0,008
No	0,8	141	0,69	132	0,11	0,019
Q8.19 Do you know the next date for vitamin Asupplementation?						
No	0,99	175	0,96	183	0,03	0,042
Yes	0,01	1	0,04	17	-0,03	0,042

3.10. Quality control of the qualitative survey

To ensure the quality of semi-structured interviews, several key measures are implemented. Firstly, interviewers receive in-depth training in active listening and reformulation techniques. A standardized interview guide is also used to ensure consistent coverage of key themes. Secondly, regular quality control of the audio recordings is used to check the clarity of the exchanges and the relevance of the questions. Supervisors provide constructive feedback after monitoring certain interviews, and verbatim transcriptions are carefully checked for omissions. Finally, a collaborative analysis of

transcriptions, carried out by several members of the team, helps to limit bias and ensure rigorous interpretation of the data.

3.11. Data processing and analysis, report writing

3.11.1. Data processing and statistical analysis

For this study, a platform was used to manage and collect data electronically from tablets and Android cell phones (Smartphones), in order to generate results more quickly. All data collected was transferred to Helen Keller's SurveyCTO database, with strictly limited access to ensure confidentiality. The raw data was exported from SurveyCTO in Excel format by the consultant, then processed and analyzed with STATA and Excel software to ensure accuracy and completeness.

The treatment consisted of the following steps:

❖ **Clearance**

A quality control program was set up to process the data on a daily basis, enabling errors to be corrected while the teams were still in the field. A quality control report was drawn up by the Consultants and presented at the Supervisory Committee meetings for validation. Recommendations made to improve the quality of the data collected were systematically implemented with the participation of the field teams. After the data collection phase, five (05) separate files were obtained, processed and analyzed:

- The file for counting eligible and non-eligible households.
- The household data file from the VAS coverage survey.
- Quality control and supervision files.
- Survey data file of CSAs involved in VAS.
- Survey data file of health workers in the health centers closest to the 115 sampled clusters.

The data were processed in five stages, with full traceability:

- **Import and preparation**: Data forms were extracted from SurveyCTO and imported into Stata, preparing the groundwork for subsequent analyses.
- **Database merging**: All collected databases have been merged for integrated analysis.
- **Thorough cleaning**: Elaborate syntaxes were used to detect missing, inconsistent, outlier and atypical values. Errors detected were corrected by carefully documented STATA codes.
- **Calculation of weights** : Weights were calculated to accurately reflect the representativeness of each health district in the total sample.
- **Indicator calculation**: The main indicators, including the VAS coverage rate, were calculated with their 95% confidence intervals. A comparison was made with the administrative coverage rate.

All analyses were documented in STATA Dofile (.do) files, containing detailed comments on each adjustment to ensure transparency, reproducibility and reversibility of modifications. Finally, the GPS coordinates collected in the household forms were projected onto an administrative map of Guinea to verify that the data corresponded to the targeted geographical areas, reinforcing the consistency and rigor of the study.

Qualitative data analysis: We used an analysis grid to process the qualitative data, enabling us to structure and interpret the results systematically.

❖ **Merge databases and calculate derived variables**

After importing, cleaning and checking, data from various forms was merged into a single comprehensive database for analysis. This included steps such as data mapping, cleaning, integration, entity resolution, photo linking, quality assurance and documentation. Data on households, mothers/caregivers and children, for example, were merged and consolidated to form the final household survey base.

3.11.2. Calculating weights for data weighting

The sampling weight represents the probability that the respondent will be selected to take part in the survey: it is the inverse of the selection probability.
In our survey with a two-stage sample, the sampling weight took into account the probability of the cluster being selected and the probability of the household being selected, knowing that the cluster had been selected. Thus, the original enumeration area (cluster) selection probabilities from the HIPC sample or any other method employed, and the household selection probability will be used to calculate the cluster weighting coefficient.
In this study, the sampling weight took into account the probability of the cluster being selected and the probability of the household being selected, given that the cluster had been selected. Thus, the original probabilities of selection of the enumeration area (cluster) from the HIPC sample or any other method employed, and the probability of household selection were used to calculate the weighting coefficient per cluster. The weighting coefficient was calculated as follows:

Sampling weight for respondent i= 1/ (Probability that cluster was selected) x (Probability that household was selected)

- **Probability that the cluster was selected =** number of clusters selected in the stratum **/** total number of clusters in the stratum by area of residence.

- **Probability of household being selected =** number of eligible households selected in the cluster **/** total number of eligible households in the cluster.

The various tables and graphs in the analysis report were generated from the audited databases, containing the weighting coefficients.

3.11.3. Data analysis

Analysis was carried out using STATA 17 software for quantitative data, and Word and Excel for qualitative data. Quantitative data downloaded from the SurveyCTO platform in CSV format were imported into STATA for processing. The analysis consisted of four main types according to the adopted analysis plan:

- The **univariate analysis** covered all variables, including the number of households, population measures and socio-demographic characteristics of households and participants. Depending on the distribution of the data and the nature of the variables, the mean with its standard deviation or the median with its interquartile range were used to summarize the quantitative variables. Absolute frequency (number) and proportion were used for categorical variables. The proportion and its 95% confidence interval were used for the VAS coverage rate.

- A **bivariate analysis** was also performed. Certain characteristics of children, mothers and households were cross-tabulated with Vitamin A supplementation to look for static differences that might explain non-supplementation. A Pearson chi-square test was used for this purpose, respecting all conditions of application.

- A **Principal Component Factor Analysis** (PCA) was carried out to construct a composite wealth index by combining variables relating to household amenities;

- An **econometric model** was constructed to identify the factors likely to explain vitamin A supplementation in children aged 6-59 months. The dependent variable was a dichotomous variable taking the value 1 if the child received vitamin A and 0 if not. Sociodemographic factors were used as explanatory variables. Odds ratios were calculated at the statistical threshold of 5% and reported with a 95% confidence interval.

3.11.4. Strong points in the organization of the survey

The organization of this survey benefited from a number of positive factors that facilitated its implementation:

- Good collaboration between stakeholders in preparing and carrying out the survey. To this end, the DAN mobilized its staff to participate in the training of interviewers and supervisors during the pilot survey. DNSFN sent a letter to health authorities from the central to the peripheral level about the survey. Helen Keller INTL staff (national and regional teams as well as regional supervisors) provided technical assistance to AHC at all stages of the process. Helen Keller Intl's regional supervisors relayed information on the arrival of the teams in their zones to the regional inspectorates, prefectoral directorates and health centers.
- The quality of the supervisors and interviewers, many of whom had previous experience of this type of survey, with levels of study ranging from bachelor's to master's degrees. It should also be noted that the majority came from the medical professions and that the qualitative interviews were conducted by sociologists.
- Daily follow-up meetings between Helen Keller Intl and the firm's teams to discuss collection progress, challenges and corrective measures to be undertaken to ensure data quality and compliance with the study protocol.
- Obtaining ethics approval on time, which enabled the teams to be deployed within the time window set for the study.
- The firm's assumption of responsibility and ability to adapt, which, faced with the challenges posed by the rainy season in terms of accessibility to certain areas, decided to repeat the enumeration and survey in 27 DZs (only 4 DZs were replaced for the entire survey). The addition of a qualitative component to the survey, albeit modest, enabled us to obtain information relating to the perceptions and expectations of certain key players in vitamin A supplementation, in order to improve the implementation of future campaigns.

3.11.5. Difficulties encountered and corrective actions

The main difficulties included accessibility obstacles, with torrential rains during the rainy season (July-August) making some enumeration areas difficult to access, or even impassable for teams who had to reach remote villages. Technical difficulties, such as network connection problems, inaccuracies in cluster delimitation and an enumeration strategy based on the use of a tablet for a pair of enumerators, also slowed down fieldwork.

In addition, reluctance was observed among some local players, notably health center managers and elected representatives, in remote areas not covered by the vitamin A distribution campaign, fearing that the low coverage in these areas would be revealed.

To overcome these challenges, corrective action was taken quickly thanks to close communication between the field teams and Helen Keller Intl.

- A WhatsApp platform has been set up to bring together all those involved, facilitating exchanges in real time and enabling the sharing of experience, advice and images of situations encountered.
- A second WhatsApp group, reserved for supervisors and the consulting team, addressed the technical and strategic aspects of the survey. In addition, a daily debriefing was organized on the Teams platform to ensure regular monitoring of the progress of activities by the firm to the PECs technical management committee.
- Faced with enumeration difficulties in certain clusters, the consultant proposed, with the agreement of Helen Keller Intl, to take over twenty-seven enumeration zones (ZD) in their entirety. The new strategy involved allocating more working days to compensate for the lack of road infrastructure and other unforeseen circumstances. This approach enabled the enumeration to be completed successfully. However, four DZs had to be replaced due to insurmountable problems: the displacement of populations in Camayenne (Dixinn), the collapse of a bridge in Naboun (Madiana) isolating villages, the impassability of roads in Faralako (Siguiri) due to rains, and poor delimitation leaving Bankon partially uninhabited.

A stratified analysis of the data was implemented to accurately assess the impacts of the recovery in these areas, reinforcing the validity of the results despite the obstacles encountered.

3.11.6. Study limits

This study has several limitations inherent in its cross-sectional methodology. Firstly, the sample was calculated on the basis of a single stratum covering the six regions supported by Helen Keller Intl in Guinea, which limits the statistical power for inter-regional comparisons. This lack of comparative data between regions limits the capacity for analysis, particularly for micro-planning. In addition, no data were collected in areas not supported by Helen Keller Intl, making it impossible to make comparisons between covered and uncovered areas.

Causal relationships for factors identified as related to vitamin A coverage cannot be established with certainty. There are also risks of information bias, notably linked to participants' memory and social desirability, which could affect the accuracy of responses.

Profound cross-sectional collection of qualitative data does not allow in-depth exploration of the socio-cultural determinants influencing vitamin A supplementation, thus limiting understanding of motivations and barriers within communities.

4. RESULTS OF THE HOUSEHOLD SURVEY

The cluster survey counted 20,642 households in the 115 planned clusters, exceeding the 17,180 households estimated by the Institut National de la Statistique (INS) for this target population, ensuring exhaustive coverage.

Of these households, 9,803 were identified as eligible, and 1,378 were interviewed out of the minimum 1,142 households expected, i.e. 12 households per cluster, with a very low refusal rate of 0.14%.

In addition, of the 15,545 children aged between 6 and 59 months in eligible households, data was collected for 2,007 children, and 1,527 mothers were also interviewed, reflecting the scope and quality of the information gathered.

Table 7: Survey coverage indicators based on sample data

Results		Set
		n
	Number of clusters (EA) planned	115
	Number of households surveyed	20642
Counting phase	Number of eligible households	9803
	Total number of children aged 6-59 months in eligible households	15545
	Number of households surveyed	1378
Household interviews	No. of REFUSALS from eligible	2 (0,14%)
	households No. of eligible children	2007
	surveyed	
Estimate Children aged 6 to 59 months	**Population&** No. of eligible children Supplied only to Vitamin A	1698
Interviews with women	Number of mothers interviewed	1527

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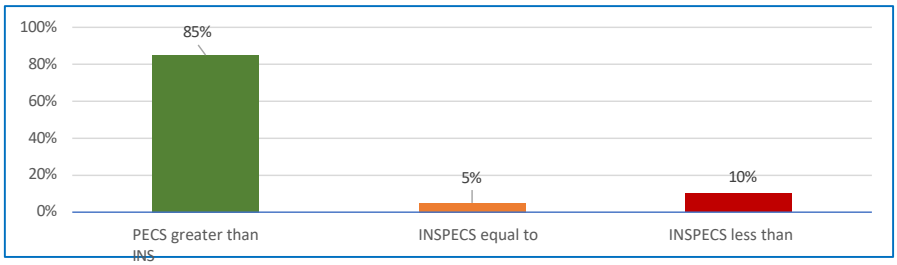
4.1. Comparison of PECS count data and Institut National de la Statistique (INS) data

Figure 4 shows the comparison between the expected number of households per DZ and the results of the enumeration. In all the regions visited, the comparison between the number of households forecast by the INS and those actually enumerated during the PECS survey reveals differences.

Indeed, for the whole sample, the number of households counted during the PECS survey was higher than the INS forecast in 85% of the DZs, identical in 5% of the DZs and lower in only 10% of the DZs visited.

By region, the trend is identical, with the number of households higher during the PECS than in the INS forecast, varying between 86% and 93% in five of the six regions. Only the Kindia region has 65% of DZs with a higher number of households in the PECS, and a quarter of DZs where the count is identical to the INS forecast.

Figure 4: Comparison between the number of households counted in PECS DZs and the number of households expected according to the INS



4.2. Socio-demographic characteristics of households surveyed

4.2.1. Socio-demographic characteristics of heads of households

Of the 1,378 heads of household surveyed, eight out of ten (80.2%) were men. Three-fifths of the heads of household were aged between 30 and 49, and the majority were married (91.7%). Over half the heads of household had never attended school, and a significant proportion were engaged in agricultural or commercial activities (see Table 8).

Table 8: Breakdown of heads of household by sex

	n	%
Gender of head of household		
Male	1105	80,2
Female	273	19,8
Marital status of head of household		
Married	1264	91,7
Living together	46	3,3
Widowed/separated	60	4,4
Divorced	4	0,3
Single	4	0,3
Age of head of household (age range)		
15 to 17 years	2	0,1
18 to 29 years old	158	11,5
30 to 39 years old	453	32,9
40 to 49 years old	431	31,3
50 and over	334	24,2
Education level of head of household		
Out of school	807	58,6
Primary	201	14,6
Secondary	233	16,9
Superior	111	8,1
Professional	26	1,9
Main activity of head of household		
Public-sector employee	103	7,5
Private-sector agent	97	7
Retailer	188	13,6
Farmer/Fisherman	528	38,3
Housewife (homemaker)	95	6,9

	n	%
Craftsman/self-employed	202	14,7
Unemployed	40	2,9
Retired	21	1,5
Pupil/Student	3	0,2
Other	101	7,3

4.2.2. Average number of children and mothers/caregivers per survey household

On average, the households surveyed had 1.5 ± 0.7 children aged between 6 and 59 months. The average number of mothers or guardians in these households was 1.1 ± 0.3 (Table 8).

Table 9: Average number of children and janitors in households

Results	Set	
	Mean	Standard
Average number of children aged 6-59 months in households	1,5	0,7
Average number of mothers/caretakers of children aged 6 59 months in households	1.1	0,3

4.2.3. Socio-demographic characteristics of mothers or babysitters in surveyed households

Table 9 shows the socio-demographic characteristics of the mothers and guardians who took part in the survey. Of the respondents, 98.2% were women. Over 64.7% of the mothers and guardians surveyed were not in school. Moreover, a significant majority of mothers and guardians were married (88.8%), and 70% of them were the wife or husband of the head of household. Moreover, 85.3% of mothers and guardians were in the 18-39 age bracket.
In terms of professional activity, housewives (homemakers) were the most represented group, at 39.7%, followed by shopkeepers, who accounted for 20.4% of respondents.

Table 10: Socio-demographic characteristics of mother/caregiver or representative of child aged 6-59 months

	n	%
Gender		
Male	27	1,8
Female	1500	98,2
Relationship of mother/caregiver to head of household		
Head of household	149	9,8
Head of household's spouse	1078	70,6
Daughter/son of head of household	131	8,6
Relative of the head of household or his/her spouse	75	4,9
Other parents	11	0,7
Person not related to the head of household	5	0,3
Servant trolley	1	0,1
Other, please specify	77	5
Age of mother's/children's guardian		
15 to 17 years	22	1,4
18 to 29 years old	798	52,3
30 to 39 years old	504	33
40 to 49 years old	95	6,2
50 years plus	39	2,6

	n	%
Don't know	69	4,5
Marital status of mother/guardian of children		
Married	1356	88,8
Living together	76	5
Widowed/separated	39	2,6
Divorced	8	0,5
Single	48	3,1
Mother's/children's guardian's level of school education		
Out of school	988	64,7
Primary	261	17,1
Secondary	201	13,2
Superior	50	3,3
Professional	27	1,8
Main activity of mother/childminder		
Public-sector employee	27	1,8
Private-sector agent	25	1,6
Retailer	311	20,4
Farmer/Fisherman	294	19,3
Housewife (homemaker)	606	39,7
Craftsman/self-employed	157	10,3
Unemployed	32	2,1
Pupil/Student	30	2
Other	45	2,9

4.3. Household wealth quintile from the survey

❖ Wealth quintile calculation method

A synthetic indicator of economic well-being known as the household wealth quintile is designed on the basis o f non-food consumer goods to characterize a household's level of affluence. This indicator is constructed using a factorial method, namely principal component analysis. Information on household goods included information from the household questionnaire on household ownership of certain consumer goods such as television, radio or car. This information also covered certain housing characteristics such as the availability of electricity, the type o f water supply, the type of toilet, the flooring material and the fuel used for cooking. Households were then divided into population quintiles, with each quintile corresponding to a level, ranging from 1 (lowest) to 5 (highest).

❖ Survey household wealth quintile

Table 10 shows the household wealth quintile. Overall The wealth quintile was estimated on the basis of 10 questions (in accordance with the equity tool: https://www.equitytool.org/) covering non-food consumer goods, such as the type of fuel used by household members, the water supply, or the type of toilet used. The results are presented in Table10. They show that around 19.3% of households are in the lowest quintile (the first quintile represents 20.2% and the second 22.3%) and 17.6% belong to the middle class.

Table 11: Wealth quintile

		Set		
		n	%	95% CI
Wealth quintile	1st quintile	279	20,2	[18,2-22,5]
	2nd quintile	307	22,3	[20,2-24,6]
	3rd quintile	242	17,6	[15,6-19,7]
	4th quintile	284	20,6	[18,6-22,8]
	5th quintile	266	19,3	[17,3-21,5]

4.4. Household access to health services

4.4.1. Types of healthcare facilities visited

To obtain medical care, the majority (nearly 9 out of ten) of respondents reported frequent visits to public health facilities (88.7%). In addition, one in 10 (10.3%) said they also sought care in private health facilities. The most frequently visited facilities were health posts (37.5%) and health centers (35.4%), accounting for at least 70% of consultations, followed by integrated health centers (10.8%) (**Table 11**).

Table 12: Types of healthcare facilities visited

		Set n	%	CI (95%)
Where to find us more often to obtain medical care?	Public health training Private	1354	88,7	[87,0-90,2]
	health training	157	10,3	[8,9-11,9]
	Pharmacy	6	0,4	[0,2-0,9]
	Tradipratician	4	0,3	[0,1-0,7]
	Church	1	0,1	[0,0-0,5]
	Other to be specified	5	0,3	[0,1-0,8]
What type of facility (the structure is the plus near de chez vous ?	Integrated Health Center	165	10,8	[9,3-12,5]
	District Medical Center District	8	0,5	[0,3-1,0]
	Hospital	34	2,2	[1,6-3,1]
	Regional hospital	31	2	[1,4-2,9]
	General hospital	13	0,9	[0,5-1,5]
	central hospital	14	0,9	[0,5-1,5]
	Regional hospital	3	0,2	[0,1-0,6]
	Improved Health Center Health	44	2,9	[2,2-3,9]
	Center	541	35,4	[33,1-37,9]
	Health post	572	37,5	[35,1-39,9]
	Other, please specify	102	6,7	[5,5-8,0]

4.4.2. Distance and means of travel to the nearest health center and means of transport to reach it

Table 12 shows the distance between households and the nearest healthcare facilities, and the means used to reach them. Around eight out of ten of the households in which the mothers/caregivers surveyed lived (79.3%) were less than 5km from the health facility. Overall, 1 in 10 mothers/caregivers walked to the facility (60.5%), compared with 9% who travelled by car.

Table 13: Distance and means of travel to the nearest health center

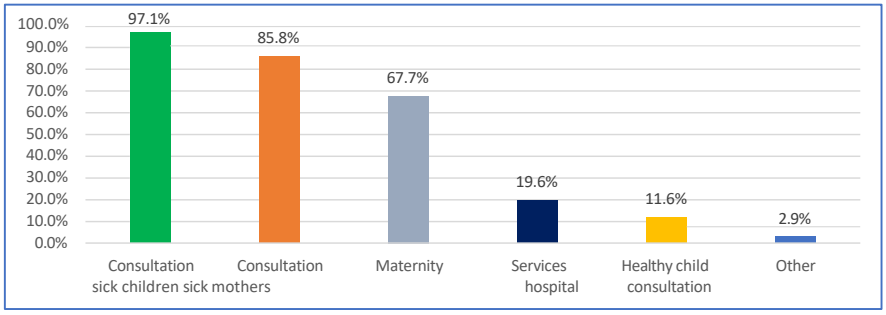
		Set n	%	95%CI
What is the distance in kilometers between your household and the structure nearest	Less than 5 KM	1209	79,3	[77,2-81,2]
	Between 5-9 KM	220	14,4	[12,7-16,3]
	Between 10-14 KM	23	1,5	[1,0-2,3]
	Between 15-19 KM	33	2,2	[1,5-3,0]
	More than 20 KM	40	2,6	[1,9-3,6]
	On foot	924	60,5	[58,0-62,9]

How you usually go to this healthcare facility	By car	138	9	[7,7-10,6]
	By bike	1	0,1	[0,0-0,5]
	A motorcycle/tricycle	464	30,4	[28,1-32,7]

4.4.3. Type of services available at health centers

Figure 5 shows the results for the main services available at health centers, according to the households surveyed. Consultation for sick children was the service most frequently reported by households, being mentioned by more than nine out of 10 households surveyed (97.1%). Some 8 out of 10 households (85.8%) mentioned consultations for sick mothers, while almost seven out of 10 households (67.7%) indicated that maternity services were available in the health facilities they frequented. Just under two (2) households in 10 (19.6%) cited hospital services. Consultations for healthy children and other services were rarely cited, with around 11.6% and 3% of households respectively.

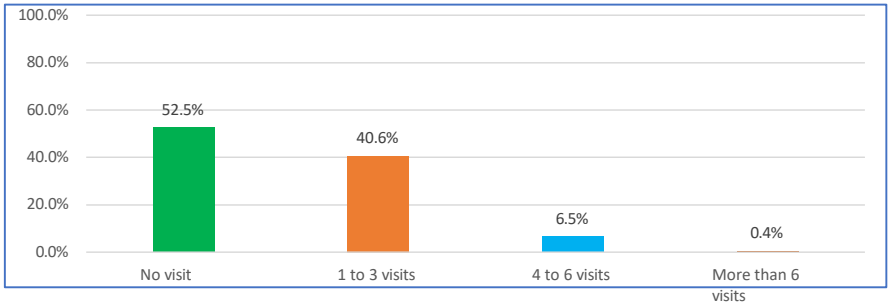
Figure 5: Types of services available at health centers



4.4.4. Number of times the household was visited by community health workers or volunteers

Figure 6 illustrates the frequency of visits received by households from community health workers or volunteers. It shows that more than half of households (52.5%) received no visits in the six months preceding the survey. On the other hand, almost 40.6% of households received between 1 and 3 visits during the same period.

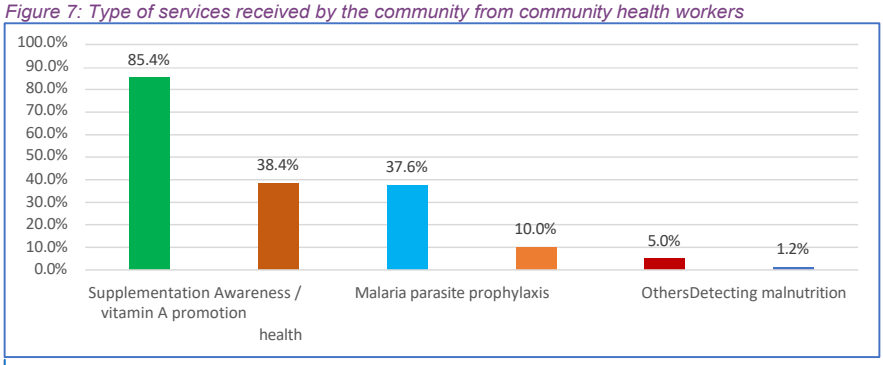
Figure 6: Number of times the household was visited by community health workers or volunteers



4.4.5. Type of services received from the community/ from volunteers

Figure 7 shows the services provided to household members by community agents. In general, the majority of household members (85.4%) benefited from vitamin A supplementation provided by these agents, followed by awareness-raising and health promotion (38.4
%), malaria prophylaxis (37.6%) and deworming (10%). Other services were also offered in 5% of households during visits by community agents.

Figure 7: Type of services received by the community from community health workers



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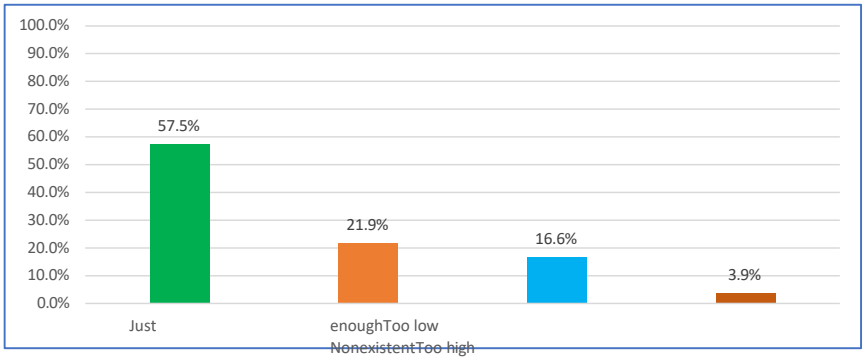
4.4.6. Household perceptions of the number of visits made by community health workers.

Figure 8 shows respondents' perceptions of the number of household visits made by community health workers. The graph shows that the majority of respondents (57.5%) consider the frequency of visits to be "just enough". However, a significant proportion (38.5%) felt that this frequency was "too low" or "non-existent", indicating a potential need for improvement. Finally, only 4% of respondents consider the number of visits to be "too high".

Figure 8: Household perception of the number of visits made by community health workers




EC-59-14073

4.5. Vitamin Supplementation Coverage A

4.5.1. Socio-demographic characteristics of children

The table below shows the socio-demographic profile of eligible children aged between 6 and 59 months. Overall, males accounted for slightly more than half the sample (50.2%), while females made up 49.8%. Some 89% of the children were aged between 12 and 59 months. In addition, 70.2% of the children's biological mothers responded to the sections concerning children aged 6 to 59 months.

Table 14: Socio-demographic profile of children

	n	%
Child's gender		
Male	1000	49,8
Female	1007	50,2
Child's age in completed months		
[6-11 months]	222	11,1
[12-59 months]	1784	88,9
Respondent's relationship with child		
Father	264	13,2
Mother	1409	70,2
Uncle	37	1,8
Aunt	76	3,8
Tutor	7	0,3
Tutor	8	0,4
Grandfather	37	1,8
Grandmother	120	6
Servant trolley	2	0,1
Other, please specify	47	2,3

4.5.2. Source of information on the date of birth of children

Table 17 shows the sources of information used to verify the birth dates of the children surveyed. Overall, less than 20% of children's dates of birth could be verified, either through a health record or a birth certificate.

Table 15: Sources of information on children's date of birth

	n	%
Source of this information on the child's age		
Health booklet/Supplementation booklet	337	16,8
Birth certificate	54	2,7
Parent's allegation, without source of verification	1613	80,4
Other	3	0,1

4.5.3. Coverage of vitamin A supplementation during the campaign

Tables 15 illustrate the coverage of vitamin A supplementation among children aged 6 to 59 months during the June 2024 campaign. Nearly 84.6% of children benefited from this supplementation, with a confidence interval ranging from 83% to 86.1%. Nevertheless, in almost nine out of ten cases (88.3%), supplementation information could not be verified using a health record or other follow-up document.

Table 16: Coverage of children supplemented with vitamin A

	%	CI (95%)	n
The child received vitamin A during the vitamin A supplementation campaign in June 2024.			
Yes	84,6	[83,0-86,1]	1698
No	12,7	[11,3-14,2]	255
Don't know	2,7	[2,1-3,5]	54
Information on vitamin A is recorded in the child's health record			
Yes	11,7	[10,3-13,3]	199
No	88,3	[86,7-89,7]	1499

4.5.3.1. Where vitamin A is received during the campaign

In terms of where and by whom vitamin A was administered, the majority of children received supplementation at home (94%) (see Table 16). Other children were supplemented at the health center (1.4%), by a community health worker (0.6%) or in the village (2.1 %). According to mothers and guardians, community health workers and community relays/distributors were the main administrators of vitamin A (67.1%), followed by health workers (31.4%).

Table 17: Location and personnel administering vitamin A

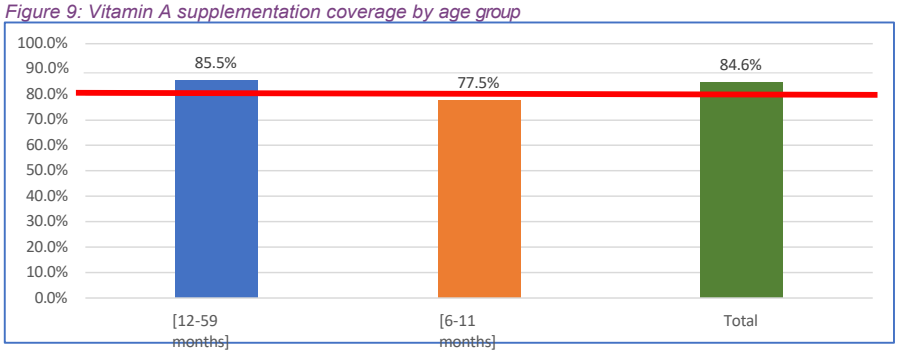
	n	%
Where did the child receive the vitamin A capsule?		
At the health center	24	1,4
At the community health worker (CHW) In the village	11	0,6
At home	36	2,1
Don't know	1596	94
Other, please specify	3	0,2
	28	1,6
Who gave the child the vitamin A capsule?		
Health agent	534	31,4
Community health agent Parent/carer	1139	67,1
Don't know	8	0,5
	17	1

4.5.3.2. Vitamin A intake by age group during the campaign

Coverage of vitamin A supplementation (VAS) was analyzed according to different characteristics of the children and their parents/guardians.

Figure 9 shows vitamin A supplementation coverage in children, classified by age group. Overall, it shows that children aged 12 to 59 months had higher coverage (85.5%) than those aged 6 to 11 months (77.5%). The coverage rate for children aged 12 to 59 months thus exceeds the recommended 80% threshold for vitamin A supplementation, while the coverage rate for children aged 6 to 11 months remains below this threshold. Statistical analysis, using the chi-square test (P = 0.003), suggests a significant relationship between child age group and vitamin A coverage.

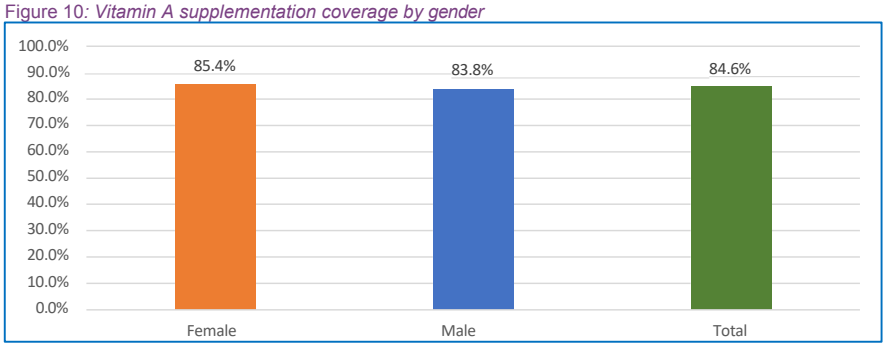
Figure 9: Vitamin A supplementation coverage by age group



4.5.3.3. Receipt of vitamin A by sex and stratum during the campaign

Figure 10 shows vitamin A coverage as a function of gender. Overall, vitamin A coverage was comparable between boys (83.8%) and girls (85.4%). Statistical analysis, using the chi-square test (P = 0.597), indicates that there is no significant relationship between child gender and vitamin A coverage.

Figure 10*: Vitamin A supplementation coverage by gender*

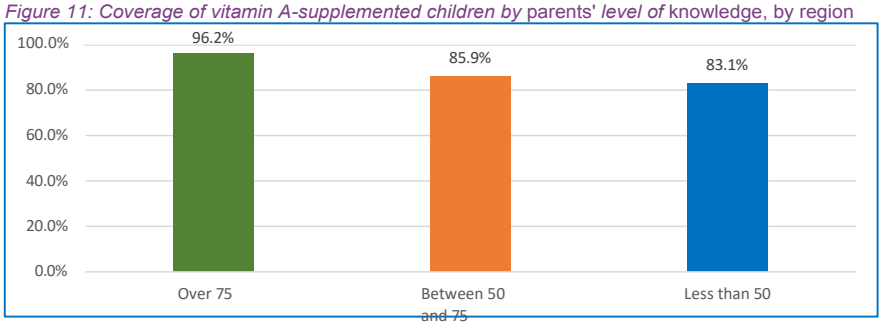


4.5.3.4. Receipt of vitamin A during the campaign according to the index of household VAS knowledge.

Figure 11 shows that coverage of vitamin A supplementation increased with parents' level of knowledge about vitamin A. Thus, coverage was 83.1% for

children whose parents had a low level of knowledge, 85.9% for those whose parents had an average level of knowledge, and 96.2% for those whose parents had a high level of knowledge. Statistical analysis, using the chi-squared test (P = 0.001), revealed that there appeared to be a link between parents' level of knowledge about vitamin A and vitamin A coverage.

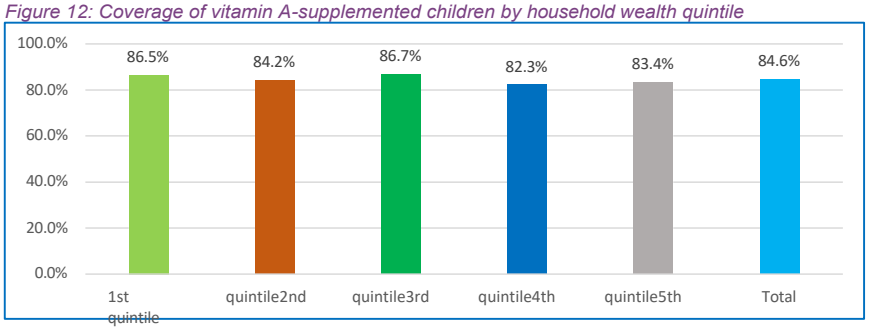
Figure 11: Coverage of vitamin A-supplemented children by parents' *level of* knowledge, by region



4.5.3.5. Receipt of vitamin A during the season by household wealth quintile

Figure 12 illustrates children's vitamin A coverage according to household wealth quintile. Overall, children from households belonging to the middle quintile have higher vitamin A coverage (89.9%), followed by those from the secondary and lower quintiles (86.8
% and 82.8% respectively). However, the figure shows that wealth quintile does not always correspond to better vitamin A coverage. For example, children in quintile 3 (86.7%) enjoy higher coverage than those in quintiles 4 and 5 (82.3% and 83.4% respectively). Statistical analysis, using the chi-square test (P = 0.046), suggests a significant link between household wealth quintile and vitamin A coverage.

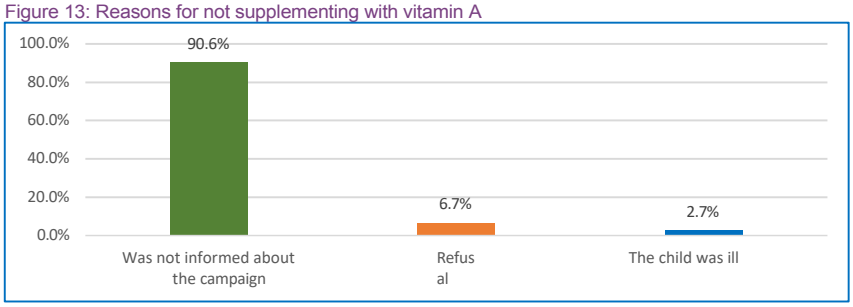
Figure 12: Coverage of vitamin A-supplemented children by household wealth quintile



4.5.4. Reasons for vitamin A non-supplementation during the campaign

Figure 13 shows that, according to the respondents, the main reason for vitamin A non-supplementation among the children surveyed was lack of information, accounting for 90.6% of cases,
against only 6.7% refusals.

Figure 13: Reasons for not supplementing with vitamin A



4.5.5. Coverage of vitamin A supplementation over the last six months outside the campaign period

Table 17 shows the results for children who did not receive vitamin A supplementation during the campaign, but who were covered at another time during the six-month period. The table is organized into three response categories, each accompanied by percentages and 95% confidence intervals. It shows that a small proportion of children (6.8%) who were not covered during the campaign received supplementation on another occasion during the six-month period. However, the vast majority of these children (82.8%) did not receive supplementation at any other time. Finally, a relatively small proportion of respondents (10.4%) were unable to specify their child's supplementation status.

Table 18:: Children not covered during the campaign but covered at another time of the year. semester

	n	%	CI (95%)
Children not covered during the campaign but covered at another time during the semester			
No	256	82,8	[78,2-86,7]
Yes	21	6,8	[4,5-10,2]
Don't know	32	10,4	[7,4-14,3]

4.5.6. Months of vitamin A reception outside campaigns

As shown in Table 18, 8.3% of children received vitamin A outside the July 2024 supplementation campaign. Almost a quarter of children (24.7%) received vitamin A supplementation in July, before the official launch of the campaign, while around 10.2% of children received supplementation in June.

Table 19: Months in which children who were not covered during the campaign were covered at another time during the half-year.

	n	%	CI(95%)
Apart from the last vitamin A supplementation campaign, the child received vitamin A at some point during the semester.			
Non	1703	84,9	[83,2-86,4]
Yes	166	8,3	[7,1-9,6]
Don't know	138	6,9	[5,8-8,1]
Months when children who were not covered during the campaign were covered at another point in the semester			
July	17	10,2	[6,4-15,9]
June	41	24,7	[18,7-31,9]
May	4	2,4	[0,9-6,3]

April	3	1,8	[0,6-5,5]
Mars	1	0,6	[0,1-4,2]
February	4	2,4	[0,9-6,3]
January	8	4,8	[2,4-9,4]

4.5.7. Location of vitamin A reception outside the campanes

The following table provides information on the location and personnel who administered the vitamin A to children who were not covered by the main campaign, but who received the supplementation at another time during the semester. The majority of these children (82.5%) received vitamin A at home, and in 98.2% of cases, supplementation was carried out at home. by community health workers or health agents.

Table 20: Location and staff who administered vitamin A to children not covered by the campaign and who received VAS at another time during the semester

	n	%
Where did the child receive vitamin A?		
At home	137	82,5
At the health center	20	12
In the village	6	3,6
Community health workers (CHWs)	1	0,6
Other	2	1,2
Who gave the child the vitamin A capsule?		
Community health worker	84	50,6
Health agent	79	47,6
Don't know	3	1,8

4.5.8. Children supplemented with vitamin A during and outside the campaign period

Table 20 shows that only 7.2% of children were covered both during the campaign and at another time during the half-year. In contrast, only 1% of children not covered during the campaign received supplementation at another time. Without the July 2024 vitamin A supplementation campaign, around 8.2% of target children would have been covered by community health workers or health agents.

Table 21: Children supplemented with vitamin A during and outside the campaign period

	n		%CI (95%)
Children covered during the campaign and at other times during the semester			
No	1862	92,8	[91,6-93,8]
Yes	145	7,2	[6,2-8,4]
Children not covered during the campaign but covered at another time			
No	1986	99	[98,4-99,3]
Yes	21	1	[0,7-1,6]

4.5.9. Frequency of vitamin A supplementation in children during the semester

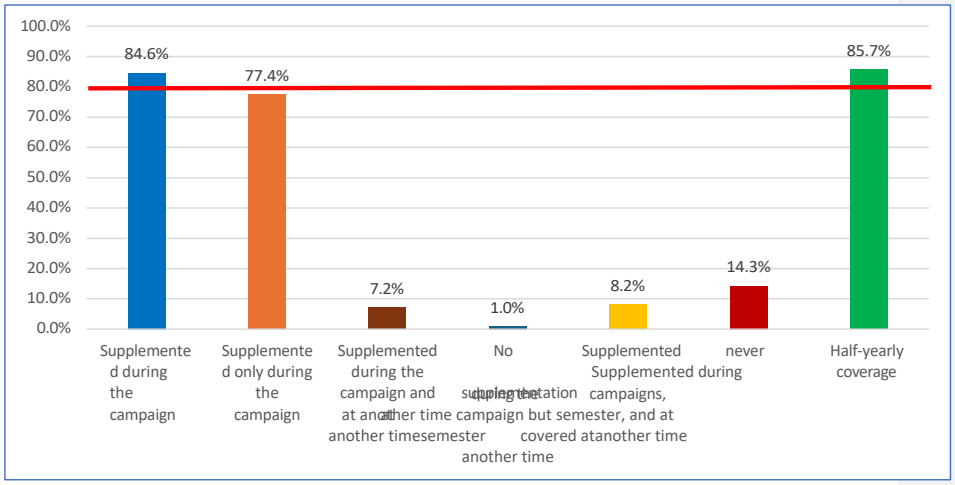
The majority of children (83.4%) received supplements only once during the six-month period. Higher frequencies of supplementation (twice or more) were significantly less common. The results also reveal uncertainty about vitamin A supplementation for 1.1% of children during the half-year (Table 21).

Table 22: Number of times children received a supplement during the semester

	n		%CI (95%)
Number of times children received a supplement during the semester			
0	266	13,3	[11,8-14,8]
1	1673	83,4	[81,7-84,9]
2	26	1,3	[0,9-1,9]
3	10	0,5	[0,3-0,9]
4	8	0,4	[0,2-0,8]
6	2	0,1	[0,0-0,4]
Don't know	22	1,1	[0,7-1,7]

Analysis of the results in Figure 14 reveals that 77.4% of children were supplemented only during the July 2024 vitamin A supplementation campaign (VAS). In addition, 8.2% of children benefited not only from the December 2023 VAS, but also from additional supplementation during the following six-month period. In addition, 1% of children not included in the 2024 campaign had already received VAS in the previous six months.
However, 14.3% of children did not receive vitamin A supplementation during the first half of 2024. Overall, 85.7% of children received at least one dose of vitamin A during this six-month period.

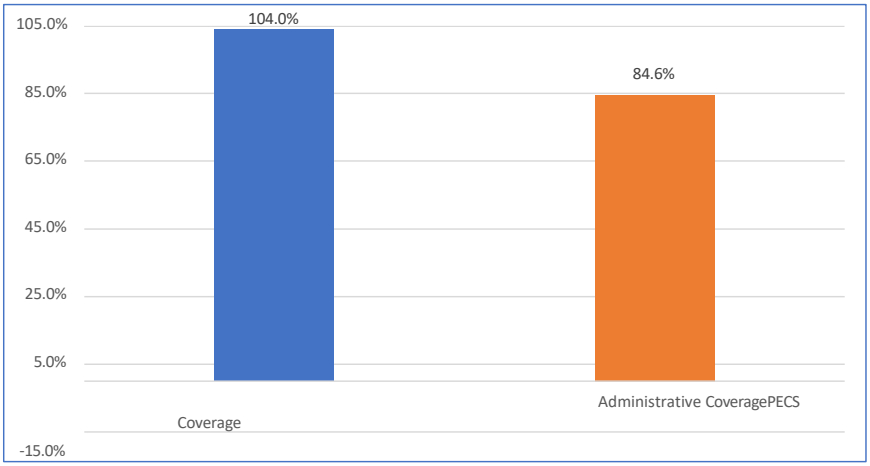
Figure 14: Vitamin A supplementation coverage in S1 2024



4.5.10. Comparison of administrative data with study data

Figure 15 compares PECS and administrative coverage. This figure shows that overall, according to PECS data, 84.6% of children were supplemented with vitamin A, compared with 104% according to administrative data.

Figure 15: Comparison of PECS survey and administrative coverage levels

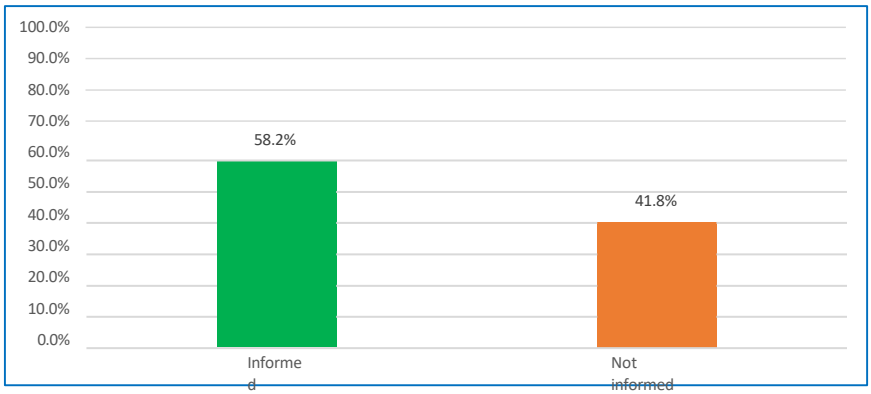


4.6. Communication strategies for the campaign

4.6.1. Household information by stratum

Figure 16 shows the results for households informed about the campaign before it began. Overall, more than half (58.2%) of households were aware of the campaign before it began.

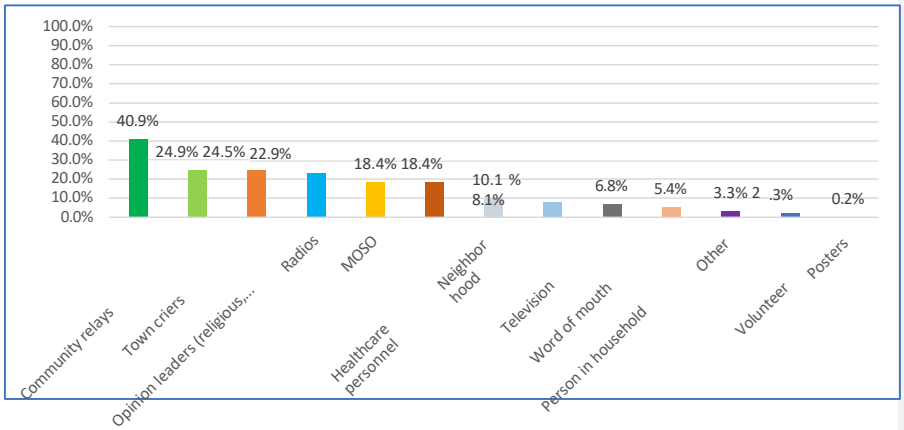
Figure 16: Households informed about the campaign before it begins



4.6.2. Households' main sources of information on the campaign

Figure 17 shows households' main sources of information about the campaign. Overall, four out of five households reported receiving information through community relays. One in four households (25%) reported obtaining information from town criers, followed by opinion leaders (24.5%). In addition, 22.9% of households claimed to have received information on vitamin A via the radio, while only 8.1% of households were informed via television. One in ten households received information from their neighbors, and 18.4% of households were informed by health workers. Finally, it should be noted that 6.7% of households were informed by word-of-mouth.

Figure 17: Households' main sources of information about the campaign



4.6.3. Knowledge of vitamin A

The survey shows that a majority (81.2%) of respondents are aware of the product, but many are unaware of the recommendations: 62.9% don't know when to administer the first dose, and 67.7% don't know the frequency of administration. Information on vitamin A comes mainly from community relays (45.4%) and health personnel (30.8%), revealing gaps to be filled in terms of awareness and education.

Table 23: Knowledge about vitamin A

		Set n	%	IC(95%)
Do you know this product ?	No	287	18,8	[16,9-20,8]
	Yes	1240	81,2	[79,2-83,1]
At what age should children receive their first dose?	Less than 6	154	10,1	[8,7-11,7]
	months To 6	226	14,8	[13,1-16,7]
	months	187	12,2	[10,7-14,0]
	Over 6 months	960	62,9	[60,4-65,3]
	Don't know			
Number of times this product is received A per year	1 once	143	9,4	[8,0-10,9]
	2 once	238	15,6	[13,9-17,5]
	3 once	101	6,6	[5,5-8,0]
	Don't know	1034	67,7	[65,3-70,0]
	Other	11	0,7	[0,4-1,3]
Who / where did you learn about vitamin A?	Healthcare personnel	471	30,8	[28,6-33,2]
	Distributor/Community Relay	693	45,4	[42,9-47,9]
	Radio/Television/Press print/social networks	117	7,7	[6,4-9,1]
	Other	416	27,2	[25,1-29,5]

4.6.4 Vitamin A knowledge index

❖ **Methodology for constructing the vitamin A knowledge index**

This index is based on three (3) questions:

- Do you know the benefits of vitamin A? (Helps eyesight, promotes growth, protects against disease/anemia, increases appetite). A score of 20 points is awarded to a respondent who cites one of the benefits of vitamin A, and 0 when no benefit of vitamin A is given by the respondent;
- At what age should children receive their first dose of vitamin A? (At 6 months corresponds to a correct answer and other represents the wrong answer). A score of 15 points is awarded for each correct answer and 0 for each incorrect answer;
- How many times a year should a child receive vitamin A? (2 times corresponds to the right answer and another to the wrong answer). A score of 15 points is awarded for each correct answer and 0 for each incorrect answer.

After calculation, the scores obtained are categorized into three (3) levels as follows:

- **Less than or equal to 50%:** Poor knowledge
- **Between 50 and 75%**: Average knowledge
- **Over 75%**: Good knowledge

❖ **Household vitamin A knowledge index**

Table 22 presents data on household knowledge of vitamin A. Only 5.2% of mothers and guardians showed a good knowledge of vitamin A, while 66.3% showed a low level of knowledge.

Table 24: Vitamin A awareness index (households)

		n	%	IC(95%)
Knowledge index	Less than 50% of sales	1012	66,3	[63,9-68,6]
	Between 50 and 75%	435	28,5	[26,3-30,8]
	More than 75%, or	80	5,2	[4,2-6,5]

4.6.5. Factors influencing vitamin A supplementation in children

BOX: LOGISTIC MODEL, CALCULATION AND INTERPRETATION OF ODDS RATIOS (OR)

We want to explain the variable Y representing nutritional status. It is defined as follows:

$$Y_i = \begin{matrix} 1: si\ l'enfant\ a\ bénéficié\ de\ la\ SVA\ (ou\ du\ déparasitage) \\ \#0: si\ l'enfant\ n'a\ pas\ bénéficié\ de\ la\ SVA\ (ou\ du\ déparasitage) \end{matrix}$$

It is assumed that the probability of a child benefiting from campaign inputs ($Y_i = 1$) is
The likelihood of this happening depends on a number of socio-economic and demographic characteristics. An estimate of this probability is given by the logistic function :

$$_i P = P(Y_i = 1) = P(Y^* > 0) = P(\beta_0 + \beta_i X_i + \varepsilon_i > 0) = P(\varepsilon_i > \beta_0 + \beta_i X_i) = \varphi(\beta_0 + \beta_i X_i)$$

With :

- $_i P$: the probability that child i suffers from malnutrition ;
- $_i Y$: designates the nutritional status of child i ;
- $^* Y$: a function of children's characteristics ;
- $_i X$: explanatory variables. The

model specification is as follows:

$$(PY_i = 1 =) \frac{1}{1 + e^{(\beta + \beta 01\, X + \beta 1\ 2\, X2 + \cdots, + \beta p\, X)p}}$$

Analysis of regression results

The results of the estimation will be interpreted using odds ratios (OR), which by definition are statistical measures, often used in epidemiology, expressing the degree of dependence between qualitative random variables.

If p is the probability of an event occurring in group A, and q is the probability of it occurring in group B, then the odds ratio is :

$$OR = \frac{p/(1-p)}{q/(1-q)} = \frac{p(1-q)}{q(1-p)}$$

The ORs can be interpreted as follows:

OR>1: means that the event is less frequent in group A than in group B. OR=1: means

that the event is independent of group.

OR<1: means that the event is less frequent in group A than in group B.

The profile of children supplemented with vitamin A and deworming was analyzed using a logistic econometric model (Logit). The probability associated with the Chi-square statistic at a 5% risk w a s used to assess the overall significance of the model, and the probabilities associated with the Wald statistics at the 5% threshold for the individual significance of the explanatory variables.
The exogenous variables selected for the implementation of the logistic regression to detect the influential factors of vitamin A supplementation are the following:

- Stratum
- Place of consultation
- Marital status Mother/guardian ;
- Level of school education Mother/guardian ;
- Informed household
- Vitamin A knowledge index ;
- Wealth quintile.

Table 24 shows the factors influencing vitamin A supplementation in children. These factors include knowledge of vitamin A, place of medical care, place of residence and information about the vitamin A supplementation campaign.

Eligible children whose parents had a good knowledge of vitamin A were 4.24 times more likely to be supplemented with vitamin A (p = 0.003) than those whose parents had a poor knowledge.

What's more, children whose parents frequently visited private healthcare facilities, as well as those living in rural areas, were 40% less likely to be supplemented (p<0.05).

Finally, children whose parents were informed of the vitamin A supplementation campaign were 2.76 times more likely to receive supplementation (p = 0.003).

Table 25: Odds ratios for variables in the econometric model

Variables	ORaj	[95% CI]	Pvalue
Wealth quintile			
The lowest	1		
Second	1,14	[0,76-1,69]	0,532
Medium	2,22	[1,45-3,40]	<0,001
Fourth	2,00	[1,26-3,18]	0,003
The highest	2,24	[1,14-4,39]	0,019
Knowledge index			
Little knowledge	1		
Average knowledge	1,50	[0,97-2,33]	0,067
Good knowledge	4,24	[1,66-10,86]	0,003
Marital status			
Married	1		
Living together	0,79	[0,44-1,42]	0,431
Widowed/separated	0,86	[0,39-1,90]	0,706
Divorced	1,47	[0,26-8,14]	0,662
Single	0,88	[0,41-1,89]	0,738
Education level			
Out of school	1		
Primary	1,01	[0,68-1,49]	0,968
Secondary	0,69	[0,45-1,04]	0,076
Superior	0,55	[0,27-1,09]	0,087
Professional	0,22	[0,10-0,51]	<0,001
Q4,1 Where did you obtain your medical care?			
Public health training	1		
Private health training	0,53	[0,36-0,78]	0,001
Residence			
Rural	1		
Urban	0,66	[0,46-0,96]	0,030
Region			
Conakry	1		
Faranah	0,49	[0,27-0,90]	0,022
Kankan	0,61	[0,36-1,04]	0,067
Kindia	0,94	[0,56-1,59]	0,815
Labé	1,25	[0,63-2,46]	0,521
N'Zérékoré	0,67	[0,39-1,13]	0,131
Q5,1 informed about the campaign			
No	1		
Yes	2,76	[1,42-5,34]	0,003

4. RESULTS OF THE EVALUATION OF THE CAMPAIGN IMPLEMENTATION

PROCESS

Tables 25 to 28 present the results of the survey on the process of implementing the vitamin A supplementation campaign, as perceived by the actors involved at regional and health district level.

Table 25 details the evaluation of campaign coordination. On a scale of 0 to 10, where 10 represents optimal coordination and 0 the worst coordination ever, 74% of regional and health district players rated coordination and collaboration between stakeholders favorably, with a score of at least eight out of 10. Specifically, 26.3% rated collaboration as eight out of 10, 23.7% as nine out of 10, and 23.7% as optimal (10 out of 10).

Almost all of these players (97.4%) emphasized the existence of effective feedback mechanisms during and after the campaign. These mechanisms mainly included regular meetings to review campaign progress, synthesize data, and resolve difficulties in the field (51.4%), as well as dedicated telephone lines for reporting problems (24.3%).

Table 26: Evaluation of the implementation process of the vitamin A supplementation campaign

		Set		
		n	%	IC95%
How would you rate the coordination and collaboration between the various players involved in the vitamin A supplementation campaign?	5	2	5,3	[1,3-19,5]
	6	3	7,9	[2,5-22,5]
	7	5	13,2	[5,4-28,6]
	8	10	26,3	[14,5-43]
	9	9	23,7	[12,5-40,2]
	10	9	23,7	[12,5-40,2]
Have effective mechanisms been put in place to enable you to provide feedback during and after the campaign?	Yes	37	97,4	[82,6-99,7]
	No	1	2,6	[0,3-17,4]
Q54a.What feedback mechanism is planned?	WhatsApp group	3	8,1	[2,5-23]
	Dedicated telephone line	9	24,3	[12,9-41,1]
	Dedicated e-mail addresses	3	8,1	[2,5-23]
	Regular meetings	19	51,4	[35,1-67,3]
	Other	3	8,1	[2,5-23]

Table 26 presents the results of social mobilization during the vitamin A supplementation campaign, as perceived by the actors involved at regional and health district level. On a scale of 0 to 10, where 10 represents optimal social mobilization and 0 the worst mobilization ever observed, some 82% of regional and health district actors rated social mobilization favorably, with a score of at least eight out of 10. Specifically, 18.4% gave a score of eight out of 10, 34.2% gave a score of nine out of 10, and 28.9% rated social mobilization as optimal with a score of 10 out of 10. However, it is important to note that 11% of stakeholders rated social mobilization as sub-optimal, giving it a score of 5 or 6 out of 10.

Table 27: Assessment of social mobilization during the vitamin A supplementation campaign

		Set

		n	%	IC95%
How would you rate social mobilization during the last campaign	0	1	2,6	[0,3-17,4]
	3	1	2,6	[0,3-17,4]
	5	2	5,3	[1,3-19,5]
	6	2	5,3	[1,3-19,5]
	7	1	2,6	[0,3-17,4]
	8	7	18,4	[8,8-34,5]
	9	13	34,2	[20,6-51]
	10	11	28,9	[16,5-45,7]

Table 27 presents the results of the survey on the mobilization of financial, human and logistical resources during the vitamin A supplementation campaign, according to the actors involved at regional and health district level. On a scale of 0 to 10, where 10 represents optimum mobilization of resources and 0 the worst mobilization ever observed, some 66% of players felt that the resources (financial, human, logistical) mobilized were not sufficient. Nearly 72% of stakeholders rated resource mobilization as sub-optimal, giving scores of five (36%), six (24%) or seven (12%) out of 10.

According to these players, the main shortcomings concerned the number of distributors (40%) and supervisors (16%). Around 8% also reported a shortage of vitamin A capsules.

Table 28: Assessment of resources mobilized for the vitamin A supplementation campaign

		Set		
		n	%	IC95%
The resources provided (financial, human resources, logistics) b e e n enough?	Yes	12	31,6	[18,5-48,3]
	Non	25	65,8	[49-79,4]
	Don't know	1	2,6	[0,3-17,4]
If no How would you rate resources from the last campaign?	1	-	-	-
	2	-	-	-
	3	-	-	-
	4	1	4,0	[0,5-25,5]
	5	9	36,0	[19,2-57,1]
	6	6	24,0	[10,7-45,4]
	7	3	12,0	[3,7-32,7]
	8	5	20,0	[8,2-41,2]
	9	1	4,0	[0,5-25,5]
What are the resources that, according to vous, n'ont pas ete sufficient ?	Not enough distributors	10	40,0	[22,3-60,8]
	Not enough mobilizers	3	12,0	[3,7-32,7]
	Not enough supervisors	4	16,0	[5,8-37]
	Not enough vitamin A capsules	2	8,0	[1,9-28,5]
	Not enough equipment	2	8,0	[1,9-28,5]
	Other	4	16,0	[5,8-37]

5. RESULTS OF SURVEY OF HEALTHCARE PROFESSIONALS

The results of the health worker survey were presented overall (a), by region (b) and by area of residence (c).

6.1 Socio-demographic profile of respondent

Table 28 presents a detailed analysis of the socio-demographic profile of healthcare workers, focusing mainly on gender and professional experience. Overall, 74.6% of healthcare workers were men, compared with 25.4% women. The majority were nurses (43.9%) and doctors (30.7%). More than half (61.4%) of healthcare workers had more than ten years' professional experience, followed by those with between 6 and 10 years' experience (24.6
%).

Table 29: Socio-demographic profile of healthcare workers

		Set		
		n	%	IC95%
Gender	Male	85	74,6	[65,7-81,8]
	Female	29	25,4	[18,2-34,3]
What is your role in t h e health training? Agent PEV	Nurse	50	43.9	[35-53,2]
	Orderly	3	2.6	[0,8-7,9]
	Doctor	35	30.7	[22,9-39,8]
		7	6.1	[2,9-12,4]
	Senior health technician	7	6.1	[2,9-12,4]
	ATS	5	4.4	[1,8-10,2]
	Other, please specify	7	6.1	[2,9-12,4]
How long have you been health agent ?	1 to 5 years	16	14	[8,7-21,8]
	6 to 10 years	28	24,6	[17,5-33,4]
	Over 10 years	70	61,4	[52,1-70]

6.2 Supply chain

Tables 29 to 33 analyse the supply chain for inputs to the vitamin A supplementation campaign. This supply chain was explored with health workers in charge of the health facilities involved in implementing the campaign.

Table 29 presents the results of the survey on the availability of delivery notes for inputs during the vitamin A supplementation campaign at health facilities. The results show that around 8 out of 10 (84.2%) health center managers stated that they had not received any delivery slips during the campaign. Instead, the delivery slips were kept at the prefectural health directorates or health districts.

Table 30: Existence of delivery notes during the VAS campaign

		Set		
		n	%	IC95%
Do you have the delivery note?	Non	96	84,2	[76,2-89,9]
	Yes	18	15,8	[10,1-23,8]

Table 30 shows the results of the survey on the frequency of receipt of vitamin A stocks, according to health workers. The results showed that almost six out of 10 agents (57.9%) reported receiving vitamin A stocks twice a year, while around four out of 10 agents (36.8%) reported receiving them only once a year.

Table 31: Frequency of receipt of vitamin A stocks

		Set		
		n	%	IC95%
How often do you receive stock de vitamin A ?	Once a year	42	36,8	[28,4-46,1]
	Twice a year	66	57,9	[48,6-66,7]
	More than 3 times a year	6	5,3	[2,4-11,3]

Table 31 shows the frequency with which vitamin A stocks were received. Overall, 18.4% of health workers reported supply problems during the vitamin A supplementation campaign.

Table 32: Supply problems during the VAS campaign

		Set		
		n	%	IC95%
Were there any problems with the supply of vitamin A during the event?	No	93	81,6	[73,3-87,7]
	Yes	21	18,4	[12,3-26,7]

Table 31 shows the main supply-related challenges. These challenges mainly concerned stock-outs (90.5%), difficulties in transporting inputs (9.5%) and delays in supply (9.5%). Some 52% of health workers indicated that supply problems had been totally or partially resolved.

Table 33: Main supply challenges during the VAS campaign

		Set		
		n	%	IC95%
	Out of stock			
	Yes	19	90,5	[66,8-97,8]
	No	2	9,5	[2,2-33,2]
If so, what were the challenges?	**Transport facilities**			
	Oui	2	9,5	[2,2-33,2]
	No	19	90,5	[66,8-97,8]
	Supply delays			
	Yes	2	9,5	[2,2-33,2]
	No	19	90,5	[66,8-97,8]
If YES, these problems been resolved?	Yes	7	33,3	[16-56,8]
	Partially	4	19	[6,9-42,9]
	No	10	47,6	[26,8-69,3]

6.3 Agent satisfaction at santé

Table 33 shows beneficiaries' satisfaction with the training they received during the vitamin A supplementation campaign. Overall, 93.9% of health workers were satisfied with the training they received. Of these, 53.3% were very satisfied, and 43% satisfied. On the other hand, 6.1% of healthcare workers expressed dissatisfaction, the main reasons being an insufficient number of training days (28.6%) and training deemed too short (14.3%). More than half (57.1%) of the dissatisfied agents indicated that they had not received any training.

Table 34: Health workers' satisfaction with VAS training

		Set		
		n	%	IC95%
Were you satisfied with the training for your	No	7	6,1	[2,9-12,4]
	Yes	107	93,9	[87,6-97,1]
If yes, how satisfied were you satisfied with the training?	Very satisfied	57	53,3	[43,7-62,6]
		46	43	[33,9-52,6]
	Not very satisfied	4	3,7	[1,4-9,6]
If not, what didn't work in training?	Number de jour de training too short	1	14,3	[1,2-70,1]
	insufficient	2	28,6	[4,9-75,6]
	No training	4	57,1	[17,1-89,6]

Table 34 presents data on health workers' satisfaction with the vitamin A supplementation campaign. Overall, almost all (97.4%) health workers reported that they had been informed about the objectives of the campaign. All (100%) said they had been informed of the importance of vitamin A supplementation. However, 17.5
% of agents said they had not been informed of the campaign schedule.

Table 35: Health workers' satisfaction with the VAS campaign

		n	%	IC95%
Have you been informed of the campaign objectives vitamin A supplementation?	No	3	2,6	[0,8-7,9]
	Yes	111	97,4	[92,1-99,2]
Have you been informed of the importance of vitamin A supplementation?	Non	-	-	-
	Yes	114	100	-
Have you been informed of the vitamin A supplementation?	Non	20	17,5	[11,6-25,7]
	Yes	94	82,5	[74,3-88,4]
The resources provided (financial, human, were they sufficient?	Non	78	68,4	[59,2-76,4]
	Yes	36	31,6	[23,6-40,8]
If no, how would you rate the resources of the last campaign?	Satisfied	2	28,6	[4,9-75,6]
	Not very satisfied	4	57,1	[17,1-89,6]
	Not at all satisfied	1	14,3	[1,2-70,1]

Table 35 presents the results of the survey on health workers' satisfaction with their supervision during the vitamin A supplementation campaign. The results show that more than nine out of 10 health workers (97.4%) felt they had received sufficient supervision and support during the campaign. What's more, 97.4% of agents also reported feeling recognized and appreciated for their role.

Almost all health workers (99.1%) expressed their willingness to participate in future vitamin A supplementation campaigns. With regard to feedback mechanisms, 93.9% of agents indicated that effective mechanisms had been put in place to facilitate communication during the campaign.
The most frequently used feedback mechanisms were dedicated phone lines (45.8%), followed by regular meetings (27.1%) and WhatsApp groups (14%). These results highlight a general satisfaction with the support and means of communication, although a small minority reported shortcomings in support and information mechanisms.

Table 36: Health workers' satisfaction with their supervision during the VAS campaign

		Set		
		n	%	IC95%
Did you feel sufficiently supported and supported during the campaign?	Non	3	2,6	[0,8-7,9]
	Yes	111	97,4	[92,1-99,2]
Did you feel recognized and appreciated for your role as a health agent	Non	3	2,6	[0,8-7,9]
	Yes	111	97,4	[92,1-99,2]
Q7.15 Would you like to participate in future vitamin A supplementation campaigns	Non	1	0,9	[0,1-6,1]
	Yes	113	99,1	[93,9-99,9]
Have effective feedback mechanisms been put in place?	No	7	6,1	[2,9-12,4]
		107	93,9	[87,6-97,1]
If so, what feedback mechanism has been set up?	No	1	0,9	[0,1-6,5]
	WhatsApp group	15	14	[8,6-22,1]
	Dedicated telephone line	49	45,8	[36,5-55,4]
	Dedicated e-mail addresses	6	5,6	[2,5-12]
	Regular meetings	29	27,1	[19,5-36,4]
	Other	7	6,5	[3,1-13,2]

6. RESULTS OF THE COMMUNITY RELAY SURVEY (RECO)

The results of the community health worker survey were presented in a comprehensive way.

7.1 Respondent's socio-demographic profile

Table 36 shows that over two-thirds (68.1%) of the community relais surveyed were men, compared with 31.9% of women. In terms of level of education, 37.1% of relays had attained secondary level 2, followed by those with a vocational level (23.6%) and secondary level 1 education (18.1%).
What's more, more than half (52.6%) of community relays had between 1 and 5 years' professional experience, while around a third (32.8%) had between 6 and 10 years' experience.

Table 37 Socio-demographic characteristics of the Relai communautaires surveyed

		Set		
		n	%	IC(95%)
Gender	Male	79	68,1	[59,0-76,0]
	Female	37	31,9	[24,0-41,0]
What is your level of education?	Out of school	1	0,9	[0,1-6,0]
	Primary	5	4,3	[1,8-10]
	Secondary 1st cycle	21	18,1	[12,1-26,3]
	Secondary Cycle 2	43	37,1	[28,7-46,3]
	Superior	19	16,4	[10,6-24,4]
	Professional	27	23,3	[16,4-31,9]
How long have you been ASC ?	1 to 5 years	61	52,6	[43,4-61,6]
	6 to 10 years	38	32,8	[24,8-41,9]
	11 to 20 years old	10	8,6	[4,7-15,4]
	Over 20 years	7	6	[2,9-12,2]

Table 37 presents the results concerning the participation of community relays (Reco) in the vitamin A supplementation campaign in their village. Around seven out of 10 Reco (70.7%) claimed to have participated in the campaign for 4 days. Some 12.1% of Reco said they had participated for 5 days, while 10.3% had participated for 6 days. A smaller proportion (2.6%) reported participating for only 3 days.

Table 38: Number of days CHWs participated in the vitamin A supplementation campaign

		Set		
		n	%	IC(95%)
For how many days did you participate in the campaign in your village?	Less than a day	1	0,9	[0,1-6]
	1 day	1	0,9	[0,1-6]
	2 days	2	1,7	[0,4-6,7]
	3-day	3	2,6	[0,8-7,8]
	4 days	82	70,7	[61,7-78,3]
	5 days	14	12,1	[7,2-19,4]
	6 days	12	10,3	[5,9-17,4]
	15 days	1	0,9	[0,1-6]

7.2 Satisfaction of healthcare providers

Table 38 shows the results of the survey on community health workers' (CHWs) satisfaction with the training they received on vitamin A supplementation. The results showed that 96.6% of CHWs were satisfied with the training provided as part of the campaign. Of these, 54.5% were very satisfied, while 42.9% were simply satisfied.

Table 39: Satisfaction of CHWs with training on vitamin A supplementation

		Set		
		n	%	IC(95%)
Were you satisfied with the training you r e c e i v e d ? for your role as a distributor within the framework of the campaign de vitamin A ?	Non	4	3,4	[1,3-8,9]
	Yes	112	96,6	[91,1-98,7]
If yes, how satisfied were you with the training?	Very satisfied	61	54,5	[45,1-63,5]
	Satisfied	48	42,9	[33,9-52,3]
	Not very satisfied	3	2,7	[0,9-8,1]
If not, what went wrong with the training?	Training insufficient	1	25	[0,8-92,9]
	Other	3	75	[7,1-99,2]

Table 39 presents the results of the survey on community health workers' (CHWs) satisfaction with the vitamin A supplementation campaign. The results showed that 95.7% of CHWs claimed to have been informed of the campaign's objectives, while 4.3
% were not. What's more, almost all ASCs (99.1%) said they had been informed of the importance of vitamin A supplementation.

Regarding the campaign timetable, 74% of CSAs said they had been informed, while 23.3
% said they had not received this information.

With regard to the resources (financial, human, logistical) required to successfully implement the campaign, 40.5% of CHWs felt they were sufficient, while 57.8% felt they were insufficient. Finally, when asked about their assessment of resources during the last campaign, 12.4% of CSAs said they were very satisfied, 44.6% satisfied, 37.3% not very satisfied, and 4.3% not at all satisfied.

Table 40: Satisfaction of community relays with the process of implementing the vitamin A supplementation campaign

		Set		
		n	%	IC(95%)
Have you been informed of the objectives of the vitamin A supplementation?	Yes	111	95.7	[90-98,2]
	No	5	4.3	[1,8-10]
Have you been informed of the importance of supplementation? in vitamin A?	Yes	115	99.1	[94-99,9]
	No	1	0.9	[0,1-6]
Have you been informed of the vitamin A supplementation schedule?	Yes	86	74.1	[65,3-81,4]
	No	27	23.3	[16,4-31,9]
	Don't know	3	2.6	[0,8-7,8]
Were the resources provided (financial, human, logistical) sufficient to enable implementation? successful campaign?	Yes	47	40.5	[31,9-49,8]
	No	67	57.8	[48,5-66,5]
	Don't know	2	1.7	[0,4-6,7]
How would you rate the resources of the last (please specify)? the date) vitamin A supplementation campaign?	Very satisfied	14	12.1	[7,2-19,4]
	Satisfied	54	46.6	[37,6-55,7]
	Not very satisfied	43	37.1	[28,7-46,3]
	Not at all satisfied	5	4.3	[1,8-10]

Table 40 shows the results of the survey on the satisfaction of community relays (Reco) with their supervision during the vitamin A supplementation campaign. The results showed that 96.6% of CHWs felt sufficiently supervised and supported during the campaign. In addition, 99.1% of CHWs said they felt recognized and appreciated for their role in the campaign.

Almost all Reco (99.1%) were keen to participate in future vitamin A supplementation campaigns. Regarding feedback mechanisms, 89.7% of Reco's indicated that effective mechanisms had been put in place.

Among the most frequently used feedback mechanisms, dedicated phone lines came top (50%), followed by regular meetings (33%), WhatsApp groups (6.7
%) and dedicated e-mail addresses (5.8%). .

Table 41: Satisfaction of CHWs with their supervision during the vitamin A supplementation campaign

		Set		
		n	%	IC(95%)
Did you feel sufficiently supervised and supported during the campaign?	Yes	112	96,6	[91,1-98,7]
	No	4	3,4	[1,3-8,9]
Did you feel recognized and appreciated for your role community health worker/distributor during the campaign?	Yes	115	99,1	[94-99,9]
	No	1	0,9	[0,1-6]
Would you like to participate in future vitamin A supplementation campaigns or initiatives? similar?	Yes	115	99,1	[94-99,9]
	No	1	0,9	[0,1-6]
Have effective mechanisms been put in place to enable you to provide feedback during and after the campaign?	Yes	104	89,7	[82,6-94,1]
	No	11	9,5	[5,3-16,4]
	Don't know	1	0,9	[0,1-6]
If so, what feedback mechanism has been put in place? in place?	WhatsApp group	7	6,7	[3,2-13,6]
	Dedicated telephone line	52	50	[40,4-59,6]
	Dedicated e-mail addresses	2	1,9	[0,5-7,5]
	Regular meetings	35	33,7	[25,2-43,4]
	Other	8	7,7	[3,9-14,7]

6. DISCUSSION OF THE RESULTS OF THE QUALITATIVE SURVEY

In our study, a total of 16 focus groups were conducted. These groups were divided as follows: 7 focus groups with mothers, 4 focus groups with fathers and 5 focus groups with caregivers. This distribution enabled us to gather a variety of perspectives and enrich our understanding of the different points of view.

> *"If the distributor isn't satisfied, how do you expect the recipient to be satisfied? Provider, PECS 2024.*

7.1. Discussion with stakeholders and health workers on the activities of SVA

- **Healthcare providers' understanding of supplementation protocols**

Health providers demonstrated a good understanding of vitamin A supplementation protocols, particularly with regard to doses and the age of the children concerned. For example, one provider in Kankan mentions:

> *"There are two categories of vitamin A, the blue capsule and the red capsule [...] The 100 thousand IU are blue and are distributed to children aged 6 to 11 months, and the red capsules containing 200 thousand IU are administered to children aged 12 to 59 months".*

This understanding is essential to ensure correct administration and prevent dosing errors, particularly in the event of shortages of certain capsules, as highlighted in the Yomou Focus Group.

- **Precision on time intervals for administration:** Providers also showed a lack of mastery of time intervals for vitamin A administration. A provider in Conakry said*: "The first dose is administered from 6 months, then once a year.*

- **VAS training for distributors and MoSo agents**

Distribution agents receive training to prepare them for their distribution tasks. A Kankan agent testifies:

> *"When there are campaigns, there are training agents who come to train us on how to administer vitamin A in the community and which age group should benefit from it."*

This training is backed up by regular supervision, as mentioned in 13 of the 20 focus groups conducted. Supervision, often a formative and supportive activity, helps agents to ensure quality distribution.

- **The importance of continuing education**

It is also essential to note that the ongoing training of distribution agents includes the use of cards to monitor distribution and inform parents about the importance of supplementation. As one participant from the Kindia region explained:

> *"After going through the training of trainers, we were given sheets to fill in [...] and at the same time, we give the importance of the vitamin to the parents."*

- **Beneficiary satisfaction with the quality and accessibility of services** Despite general satisfaction, challenges linked to the organization of campaigns and the accessibility of services persist, affecting the perception of agents and stakeholders.

1. Mobility of health workers involved in VAS campaigns: The instability of health workers due to the transfer of those of the State and the search for better

living conditions by volunteers create a permanent gap to be filled. A health care provider in Nzérékoré confides:

"...the agents who received training last year, a lot of them left. You see, so it's not easy. They go with what they've learned and you need new trainees again and again."

2. Inadequate teams and incomplete coverage: Inadequate distribution teams are a recurring problem. A Banko provider put it this way:

   "Insufficient teams make distributors very tired... some families who know about Vitamin A don't win. This shows that some people are not satisfied."

3. Dissatisfaction with agent remuneration: Healthcare providers have pointed out that the current remuneration of agents is insufficient to cover their daily needs, which could have a negative impact on the quality of service provided. Indeed, these agents are not paid by the State. Health facility managers involve them in VAS campaigns as a form of encouragement and motivation. As one provider in Kérouané put it:

   "If the distributor isn't satisfied, how can you expect the beneficiary to be?

4. Beneficiary reluctance and mistrust: Some beneficiaries showed reluctance, influenced by past negative experiences with other drugs, as reported by a father in Kindia :

   "Me personally, I was reluctant... because there have been distributions of medicines here that have caused other illnesses in children in the past.
   "

7.2. Focus groups with mothers

7.2.1. Mothers' and caregivers' perceptions of the importance and objectives of VAS

Mothers and caregivers generally understand the importance of vitamin A for their children's health. They associate this supplementation with the prevention of various diseases, including blindness and infections.

A mother from Conakry explains:

"Vitamin A helps fight diseases such as intestinal worms, poor eyesight, prevents illness, ensures children's good health and helps prevent fever."

This positive perception is crucial for mothers' acceptance and active participation in supplementation campaigns.

7.2.2. Sources of information and awareness among mothers and guardians of the importance and objectives of VAS

Mothers and caregivers receive information about vitamin A mainly through health workers, but they express a preference for media sources such as radio and television for their credibility and wide distribution:

"We prefer information to be given by radio and television because both of these media are aimed at the general public, plus both of these media are very credible."

This preference shows the importance of continuing to integrate the media into awareness campaigns to maximize their impact.

7.2.3. Experiences of mothers and caregivers during the

supplementation

Mothers and caregivers overwhelmingly expressed satisfaction with the VAS campaigns, emphasizing the positive impact of vitamin A on their children's health. This satisfaction is due in part to the effectiveness of the distributors and the awareness-raising campaigns on the importance of vitamin A.

Importance of routinization: Some mothers expressed a desire to see VAS integrated into routine health services, to ensure a constant supply. One mother from Conakry put it this way:

> *"We want to routinize VAS because it's a good thing and because it allows us to constantly keep vitamin A in the health centers and to serve patients at all times.*

Tangible impact on children's health: Mothers have reported significant improvements in their children's general health since VAS campaigns have become a regular feature in their locality. A mother in the Mali district said:

> *"All the children in our concession have been relieved... now we don't have to buy ointments for their eye problems.".*

Quality of agent interaction: The way agents approach and educate mothers also contributes to this satisfaction:

> *"Even if you refuse, they'll educate you and explain until you accept. They're good people." (Focus Group Mother, Kankan)*

7.3. Satisfaction of Beneficiaries of Vitamin Supplementation Activities A

Qualitative analysis of beneficiary satisfaction with vitamin A supplementation (VAS) activities explored the perceptions, experiences and suggestions of mothers, fathers and health providers. Three main sub-themes emerge: mothers' and caregivers' experiences of the campaigns, the quality and accessibility of services, and suggestions for improving future campaigns.

- **Suggestions from agents and players to improve future campaigns**

Suggestions for improving future VAS campaigns were varied, but converged on better organization, increased awareness, and more systematic integration of vitamin A into routine health services.

5. Improved planning and communication: A mother from Faranah suggests better planning, with an increase in the number of distributors and prior information for the communities: *"We would like to be informed in advance when the teams are due to visit our villages... sometimes it's because of this that some parents refuse to bring their children."*
6. Raising awareness: Raising awareness is seen as crucial to improving acceptance of VAS. A Banko service provider recommends: *"First and foremost, we need to raise awareness, involve local authorities and religious leaders...".*
7. Integration of VAS into the vaccination schedule: Some providers and beneficiaries suggested integrating VAS into the vaccination schedule to avoid intermittent campaigns and ensure continuous coverage. As one provider in Faranah put it, *"We need to introduce this into routine immunization... it can help us so much."*
8. Extending the duration of campaigns: Another aspect raised was the need to increase the duration of distribution campaigns. A mother in Dalein suggested*: "The 4 days of distribution are insufficient, increase the number of days from 5 to 6 maximum..."*

7.4. Comparative analysis and Frequency

Comparative analysis shows similarities in understanding of the importance of vitamin A between different groups of participants (mothers, fathers, providers). All recognized its role in preventing disease and supporting children's growth. However, there were differences in the accuracy of information between providers and parents, with the former having more detailed knowledge of dispensing protocols and national guidelines.
In terms of frequency, themes related to disease prevention and improving children's health were the most recurrent in discussions, reflecting the effectiveness of awareness campaigns on these aspects.
A good understanding of vitamin A supplementation protocols by providers, an adequate level of training for dispensing agents, and the positive perception of mothers and caregivers are major assets for the success of VAS campaigns. However, it is essential to reinforce the dissemination of information via the media and to continue to provide regular and accurate training to distribution agents to ensure the continuity and effectiveness of these interventions.

7.5. Analysis of Strengths, Weaknesses, Constraints, Lessons Learned and Bottlenecks:

The analysis was structured at this level along axes identified as: Strengths, Weaknesses, Constraints, Lessons Learned, and Bottlenecks. Each category was illustrated by specific examples drawn from Focus Group extracts.

- Identify strengths and successes of campaign implementation
    1. **Knowledge of the benefits of vitamin A:** Several participants, including mothers and providers, expressed a clear understanding of the health benefits of vitamin A for children, mentioning prevention of blindness, strengthening of the immune system, and improved growth. For example, a provider in Conakry said:
    "Vitamin A helps prevent blindness and promotes children's growth.
    (Focus Group Providers, Kankan).
    2. **Effective communication methods:** The distribution of information by radios and community relays was highlighted as an effective means of raising awareness, with a preference for radios due to their wide reach and credibility.
    "We prefer information to be given by radio and television because these two media are aimed at the general public." (Focus Group Mothers, Conakry).

- Analysis of weaknesses and challenges at operational level
    3. **Attitudinal and behavioral problems:** Participants mentioned unprofessional attitudes on the part of health workers, such as telephone use during work and lack of availability. A mother in Conakry put it this way:
    "There aren't many difficulties, but sometimes the agents aren't very available, because they're capable of making you wait for a long time in a vacuum." (Focus Group Mothers, Conakry).
    4. **Lack of adequate training:** Some health workers did not properly inform parents about vitamin A administration, resulting in refusals from families. A provider in Salamani reported:
    "There were mothers who refused, saying any product given free by the government is not a good product." (Focus Group Providers, Salamani).

- Identification of logistical and administrative constraints
    5. **Insufficient distribution teams:** Participants noted that insufficient teams created difficulties in covering the entire population.

target. This led to dissatisfaction among families who were unable to receive the supplement. A Banko provider illustrated this problem:
"Inadequate staffing makes distributors very tired, and some families don't win". (Focus Groupe Prestataires, Banko).

6. **Insufficient remuneration for staff:** Health workers expressed that the amount of the daily per diem was insufficient to cover their daily expenses, which affected their motivation and the efficiency of their work.
"If possible, a distributor agent can at least have GNF 100,000 per day to relieve his activities." (Focus Group Prestataires, Cissela).

- Lessons learned and recommendations for overcoming bottlenecks in future campaigns
  7. **Families' reluctance to use free products**: One of the main barriers encountered was families' distrust of products distributed free of charge by the government, which were seen as potentially ineffective or dangerous. A provider in Kissidougou reported:
  "There were mothers who said that we were sending them expired medicines". (Focus Group Providers, Kissidougou).
  8. **Lack of prior information in some areas**: In some localities, families were not well informed about the campaign before the distribution teams arrived, which led to refusals on the part of parents. A provider in Coyah noted:
  "Most of these populations, once you're in their homes, they tell you that we didn't pass on the information to the mosque."
  9. **Need for better agent awareness and training**: To overcome parental reluctance, it is essential that agents are better trained to clearly communicate the benefits of vitamin A and dispel fears about free products. For example, a health agent in Kissidougou mentioned:
  "Once administered to a child, it helps them grow well and protects them against disease. This is the message I can pass on to other mothers". (Focus Group Providers, Kissidougou).

Although the vitamin A supplementation campaign enjoyed notable success, the qualitative analysis shows that it also faced operational, logistical and communication challenges. To improve the effectiveness of future campaigns, it is recommended to strengthen the ongoing training of health workers (to cope with staff mobility), increase the number of distribution teams, improve awareness through reliable communication channels, and review the working conditions of distributors to maintain their motivation.

8. DISCUSSION OF RESULTS

This study aimed to assess post-campaign coverage of vitamin A supplementation and health and nutrition interventions for children aged 6 to 59 months and women of childbearing age, carried out in June 2024 in six regions supported by Helen Keller International in Guinea.

8.1. Discussion on campaign coverage and non-administration of VAS

Coverage of vitamin A supplementation for children aged 6 to 59 months as assessed in this study was 85% in the sample and ranged in the Helen Keller Intl intervention area between 80.4% and 88.7%. This coverage is higher than that recorded in the 2023 PECS survey, which was 80.8% [79.4% - 82.1%], although the difference is not statistically significant. The administrative vitamin A coverage target set by the country is 95%, but the minimum acceptable coverage threshold for Helen Keller Intl coverage surveys is 80%. As such, the June 2024 VAS campaign can be considered a success. In addition, the upward trend observed between 2023 and 2024 demonstrates the positive effects of the efforts made by the Ministry of Health and Public Hygiene with its partners, including Helen Keller Intl.

It should be noted, however, that the observed coverage remains lower than the administrative data (104%) for the June 2024 campaign, i.e. a difference of 19 percentage points. This difference can be attributed to the underestimation of actual population denominators compared with INS forecasts. Indeed, the actual household count in this survey showed a 21% increase in the number of households compared with the INS forecast.

In addition, for 15% of children, vitamin A was either not administered, or the status of administration was unknown. This result shows that there is still a group of children escaping the distribution campaigns, and for whom further efforts are needed. Given that 14.3% of households reported living more than 5 km from the nearest health facility, and taking into account the geographical and financial barriers faced by communities in seeking care, local strategies targeting pockets of low coverage during and outside mass supplementation campaigns should be considered. These barriers were experienced during the survey and recorded in the data collection report.

8.2. Discussion of the communication strategy used during the VAS campaign and households' level of awareness of VAS

Around six (6) out of 10 households were informed about the campaign before it began. The main sources of information for households about the campaign were community relays, town criers and opinion leaders. These results showed that two out of five households were not aware of the campaign beforehand, which may explain their reluctance or refusal to participate during the campaign.

The vitamin A knowledge index remained low in four out of five households, suggesting the need for further efforts to strengthen vitamin A awareness and education in Helen Keller Intl's intervention areas. This is all the more important as the survey clearly showed that coverage of vitamin A supplementation improves with parents' level of knowledge about the product, rising from 83% among children whose parents or guardians had a low level of knowledge about the product to 96% among children whose parents had a high level of knowledge.

In this respect, it should be noted that the distribution of information by radio stations and community relays was highlighted by households as an effective means of raising awareness, with a preference for radio stations due to their wide reach and credibility. However, survey data show that radio is only the fourth source of information on the campaign, cited by one household in five.

It is therefore essential to work with radio stations, including rural radio stations, to raise awareness of VAS campaigns.

8.3. The main reasons why vitamin A is not administered

The main reason for non-supplementation with vitamin A among the children surveyed was lack of information on the part of parents (90.4%), although 7% refused.

In the multivariate analysis carried out in this study, it emerged that the factors that encourage children not to take vitamin A supplements are :

a) Parents' poor knowledge of vitamin A;
b) Babysitters' low level of formal education;
c) The fact that parents do not often visit public health facilities;
d) The fact that parents are not informed of the vitamin A supplementation campaign.

In the qualitative interviews, although mothers and caregivers generally had a good understanding of the importance of vitamin A for their children's health, they reported challenges that negatively influence VAS. These included unprofessional attitudes on the part of health workers, such as telephone use while working and lack of availability, but also the fact that some health workers did not properly inform parents about vitamin A administration, leading to refusals from families. Taking these factors into account when planning future campaigns would reduce the information deficit and increase actual VAS coverage.

In interviews with providers, difficulties identified as having a negative influence on VAS coverage include, among others:

- The mobility of health workers involved in VAS campaigns, some of whom have low levels of knowledge about the standards and procedures for communicating and dispensing vitamin A;
- Insufficient teams resulting in incomplete coverage of all target distribution areas;
- The low motivation of distribution staff in relation to their remuneration, the majority of these agents being volunteers with no stable salary;
- The reluctance of some families to use free products, due to insufficient awareness-raising prior to the distribution campaign.

8.4. Evaluate the communication strategy used and identify strengths and areas for improvement

Overall, the communication strategy used was based on community relays, town criers and opinion leaders. This strategy succeeded in reaching only six households out of three.
10. Although the VAS coverage observed is good (85%) and relatively higher than in previous campaigns, communication strategies need to be improved for future campaigns.

In particular, we need to take into account households' preference for raising awareness through the media, especially local media using local languages. To overcome parents' reluctance, it is essential that agents are better trained to clearly communicate the benefits of vitamin A and dispel fears about free products.

Improving planning by increasing the number of distributors, raising awareness, integrating VAS into the immunization schedule to catch up on zero doses between campaigns, and extending the duration of campaigns in remote areas (hot spots) to reach the last mile (the last unsupplemented child) are all strategies that will improve the effectiveness of future campaigns.

9. CONCLUSION AND RECOMMENDATIONS

The post-campaign coverage survey of vitamin A distribution in the six regions supported by HELEN KELLER in Guinea in 2024 showed that around 85% of children aged 6 to 59 months in these areas benefited from supplementation during the last campaign. While this coverage remains high, it nevertheless shows a difference of almost 20 percentage points compared with administrative coverage.

The survey also highlighted the challenges of reaching children living in remote areas, right down to the last mile.

On the basis of the challenges encountered and the data analyzed, we formulate recommendations whose consideration should contribute to improving the implementation of future VAS campaigns as well as future PECS surveys. The list of recommendations has been numbered in order of priority and classified into general and specific recommendations. Each recommendation refers to the challenges listed above, while identifying those responsible for implementation and a proposed deadline for completion.

9.1. General recommendations

R1. Strengthen the capacity of front-line health structures to retain health human resources capable of supporting campaigns and routine vitamin A distribution. To this end, the latest recruitment of new civil servants should be used to strengthen the staff of health centers and posts **(***Related challenges: Mobility of agents; Insufficient distribution teams; Incomplete coverage of health areas; Need to extend the duration of campaigns. Responsible: MSHP, by the next campaign in November 2024).*

R2. Improve the support and motivation of health workers involved in vitamin A distribution, especially in remote rural areas, in order to reach the children most in need**. (***Related challenges: Insufficient remuneration of agents; Dissatisfaction with agent remuneration. Leaders: MSHP, technical and financial partners (HELEN KELLER , UNICEF); by end November 2024).*

9.2. Specific recommendations

R3. Organize the vitamin A mass distribution campaign and the post-campaign coverage survey outside the rainy season to make it easier to reach the most isolated areas of the country and thus ensure that no child eligible for vitamin A is forgotten**. (***Related challenges: Problems of accessibility to areas; reluctance of certain local players; logistical challenges. Leaders: MSHP, technical and financial partners (HELEN KELLER , UNICEF); by the next campaign).*

R4. Intensify efforts to increase demand for health services and reduce reluctance to use vitamin A and other services for children (such as vaccines) in HELEN KELLER's support areas. **(***Related challenges: lack of prior information in certain areas; families' reluctance to use free products; past negative experiences; reluctance of certain local players. Leaders: MSHP, technical and financial partners; IRS, DPS, health centers; by the next campaign).*

R5. Ensure ongoing training of providers on the importance of vitamin A, community involvement and person-centered care in order to facilitate community awareness of the benefits of vitamin A**. (***Related challenges: Problems of attitude and behavior of agents; Lack of adequate training; Need for better awareness and training of agents; Improved planning and communication. Leaders: MSHP, technical and financial partners; IRS, DPS, health centers; by next campaign).*

R6. Improve the availability of inputs (vitamin A and consumables) during and outside campaigns to encourage catch-up by certain children. (*Related challenges: Insufficient teams and incomplete coverage; Integration of VAS into the immunization calendar; Improving the*

planning and communication; logistical challenges. Leaders: MSHP, technical and financial partners; by next campaign).

R7. Prioritize the use of beneficiaries' preferred communication channels (radio and community relays). To this end, synergistic collaboration with projects supporting the work of community relays and community-based organizations would be opportune**. (***Related challenges: Knowledge of the benefits of vitamin A; Effective communication methods; Community radios and relays. Leaders: MSHP, technical and financial partners, health projects and programs; by the next campaign).*

R8. Improve the preparation process for future post-campaign coverage surveys. To this end, it would be advisable to reactivate the activity's steering committee, to organize an orientation of the actors involved in the process on the SurveyCTO platform and on the survey's monitoring indicators. The pilot survey could serve as a basis for putting these concepts into practice. The pilot survey could serve as a basis for putting these concepts into practice**. (***Related challenges: Logistical challenges; Technical difficulties; Collection tool failures; Deletion of initial record; First experience with the SURVEYCTO platform. Responsible: HELEN KELLER , DNSFN; by the next post-campaign coverage survey).*

R9. Increase the number of days devoted to enumeration or, failing that, change the enumeration strategy, as the current one does not enable correct enumeration, and carry out the survey in two days for all DZs**. (***Related challenges: Problems of accessibility to enumeration areas; Logistical challenges; use of only one telephone per team for enumeration of DZs; DZs with seven to eight villages to cover, 8 to 20 km apart; Technical difficulties. Responsible: HELEN KELLER , Donor, DNSFN; by the next post-campaign coverage survey).*

10. APPENDIX1 : Number of households and children per cluster and comparison with INS data

Clusters	Nb. of households expected	Nb. of households counted	Expected population (INS)	Population according to enumeration
E23	124	357	918	1856
N63	154	172	1 188	903
D18	188	305	1 278	1712
F028	73	314	732	1993
R090	182	222	1 602	1339
J044	182	191	1 160	1181
X106	226	196	1 809	1307
AL168	220	248	1 552	955
AZ230	152	125	1 097	751
BP302	253	334	1 904	2035
CD364	159	315	1 354	1700
CR426	149	288	1 168	1557
DF488	131	193	833	1119
M057	208	252	1 337	892
AA119	140	143	907	893
AM181	227	242	1 471	1294
BB243	183	198	1 149	1087
BP305	212	217	1 352	1353
CC367	167	203	1 280	1281
CP428	162	169	1 339	990
D16	96	100	994	620
C15	169	170	987	753
E18	84	110	619	830
C13	98	115	978	790
D15	168	180	1 097	982
A04	111	120	1 293	1021
B06	178	180	1 418	1159
B09	149	150	1 220	1139
B06	183	183	1 698	1711
B09	133	145	1 072	1158
B07	176	195	1 158	952
C12	164	428	1 496	2805
Q083	237	244	2 886	1745
E25	95	103	1 008	874
B07	98	86	974	646
C14	90	92	881	579
D12	128	140	974	828

G32	193	207	1 362	1238

D16	97	105	843	963
B07	89	121	880	1263
A01	85	114	1 207	1745
D38	83	78	894	624
C09	149	151	1 261	1040
B46	97	120	1 452	768
A04	89	134	1 006	1020
B05	85	130	1 232	1130
B19	201	291	1 098	1352
C12	80	120	1 000	639
B07	9	67	121	274
B11	121	225	1 133	1246
A02	94	119	743	965
J46	106	168	571	959
B07	137	132	1 497	799
E16	71	150	994	983
H37	215	458	1 662	2351
B76	192	201	1 831	1306
Y113	62	100	1 348	521
C11	128	131	909	781
K45	144	149	1 027	857
D17	134	153	1 190	1028
A004	232	237	1 914	1222
N066	195	210	1 524	1090
A2	122	136	1 370	903
D16	263	266	2 088	1548
C13	129	114	943	718
B08	102	102	670	565
B09	180	200	1 109	1118
B07	171	140	1 185	725
F025	119	124	949	824
W101	258	261	1 911	1285
AC125	103	103	726	920
B07	187	187	1 308	866
F24	236	248	1 475	1078
G28	109	118	767	613
B09	120	120	1 102	756
A04	115	115	587	470
B08	121	140	1 028	761
A02	236	241	1 045	997
B06	107	149	1 066	1066
A04	191	203	793	691
A09	107	109	389	357

B07	121	191	665	660
A05	174	173	862	712
B06	99	202	876	914
Q75	212	324	1 319	1420
B09	89	118	628	503
D21	118	156	1 012	667
D20	141	154	776	576
B09	154	174	1 126	827
B09	146	171	1 006	795
A01	158	166	1 607	603
AB126	107	145	825	1138
F28	68	104	609	821
C29	77	122	704	921
C12	123	135	1 129	1015
A04	127	168	807	976
C11	172	185	1 039	1111
B147	192	201	885	961
F29	90	142	807	809
A01	163	211	895	841
D15	124	116	762	710
H37	177	158	1 722	1101
D17	181	211	1 317	1318
K151	140	151	1 127	1045
B09	151	154	984	982
B07	232	330	1 369	1752
D20	196	205	1 941	1389
K46	78	74	357	392
B07	240	276	1 237	1445
A02	187	226	1 127	1051
A01	127	138	845	654
A03	16	17	80	112
A02	161	241	1 025	1222
C10	138	201	793	1013
A03	369	330	2 333	1873