Evaluation of the Impact of the ASSP (*Accès aux Soins de Santé Primaires*) Project in the Democratic Republic of Congo

Synopsis

August 2019

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Acknowledgments

We are grateful to the following individuals for their assistance in the preparation of this evaluation.

IMA World Health
Luke King
Bernard Ngoy
Scott Shannon
Inge Sthreshley
Larry Sthreshley
Mano Tayingi

Pathfinder International
Marie-Claude Mbuyi
Yvette Mulongo

DRC Ministry of Health
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This project was funded with UK aid from the UK government. This material has been funded by UK aid from the UK government; however, the views expressed do not necessarily reflect the UK government's official policies.

Purpose: The purpose of this report is to present the results from a mixed-methods evaluation of the impact of the DFID-funded ASSP (*Accès aux Soins de Santé Primaires*) project on selected population, health, and nutrition

Background: When the ASSP project began in 2012, the DRC was emerging from four decades of conflict and related mismanagement that had devastating effects on the economy, institutions, and the people. In the period from 1998 to 2012, it is estimated that over 3.5 million people died as a result of the conflict. In 2011, gross national income per capita was USD 190 and 71 percent of Congolese lived below the poverty line of USD 1.25 per day. Although the country was relatively more peaceful in 2012, a crisis involving several armed factions persisted in the eastern part of the country and there remained longstanding political tensions.

Despite the need for a more responsive health system, the ability of the government to provide access to health, population, and nutrition services of sufficient quality was limited, due to health workforce challenges, lack of transportation and communications infrastructure, security challenges, and limited health financing. At the beginning of this decade, the government spent only about four percent of the national budget on the health sector, which was among the lowest levels of health spending in the world, and there was a large concern that as much as 70 percent of the population had little or no access to the health services resulting from both physical and financial barriers.

By the early 2010s, health indicators had improved compared to much lower levels experienced during the mid-2000s. Nevertheless, according to the 2013-14 Demographic and Health Survey, under-five mortality (104 deaths per thousand) and maternal mortality (846 per 100,000 live births) remained very high, while the current use of modern contraceptive methods among women of reproductive age was only 8 percent. The nutritional status of children was also found to be extremely poor, with an estimated forty-three percent of children under age five being stunted, and 23 percent being severely stunted.

Program Description: As part of its program to assist the government in strengthening the country's health system, DFID awarded the five-year ASSP project to IMA World Health and its implementing partners and subcontractors in 2012. Aimed to improve reproductive, maternal, neonatal and child health (RMNCH), ASSP was a complex project, consisting of a wide array of population, health, and nutrition programmatic interventions and health systems strengthening interventions with multiple interacting outputs and impacts.

ASSP initially worked in 56 health zones that were purposively selected. These consisted of all the health zones that were part of the Access to Healthcare Program (Maniema (10), Kasai Central (3), Tshopo (3), and Sud Kivu (4)) and 36 additional health zones in Nord Ubangi, Kasai, and Kasai Central, which were considered to have relatively weak health systems. Of these 56 health zones, the four health zones from Sud Kivu were dropped after one year, leaving 52 health zones in the project. An estimated nine million people live in these health zones.

Methods: The evaluation employed a mixed-methods design. The quantitative component of the evaluation used a quasi-experimental panel design with constructed treatment and comparison groups. Both descriptive and multivariate analyses were carried out. The multivariate analysis used a difference-in-differences approach based on population-based household surveys, health facility and health worker surveys, and community leader surveys administered in 2014 and 2017, which was expected to be the final year of the project. All survey modules were administered face-to-face using paper forms or electronic devices.

The original study design called for the impact evaluation to be carried out in all five ASSP provinces. A baseline survey was conducted in all five provinces as-planned, but in 2017, civil unrest in two provinces, Kasai and Kasai Central, prevented the research team from returning to these provinces for the endline survey. To compensate for the loss of Kasai and Kasai Central, additional sampling areas were selected in the three remaining provinces to preserve the power of the analysis.

Qualitative data were also collected at the time of the endline survey using key informant interviews, in-depth interviews and focus group discussions among a broad range of stakeholders and beneficiaries. The purpose of the qualitative component was to explore perceptions of stakeholders on project implementation in three areas – maternal health, child health care, and child nutrition – and reasons why selected strategies worked or did not work.

Analyses included in report: The evaluation was designed, in consultation with DFID, to assess the causal impact of the ASSP project on several types of population, health and nutrition indicators. These include the following: maternal health care utilization; child health and treatment of child illnesses; child nutrition; use of family planning; environmental health, including water, sanitation, and hygiene; curative health care utilization, including use of services, out-of-pocket health care expenditure, and client satisfaction with services; structural quality of facility-based care; and community engagement. Although descriptive results on the changes over time in ASSP and non-ASSP areas are presented, the estimates of project impact from the difference-in-differences models are viewed as the primary form of evidence presented in the report. Readers should note that the term impact in the report refers to the causal effect of the ASSP project on an outcome of interest. For each estimate of program impact, a statistical test was carried out using the p=0.05 significance level, which is the standard threshold of statistical significance used in the biomedical and social sciences applied research literature. When an estimate of program impact is described as statistically significant, this means that there was no more than a 5 percent chance of rejecting the null hypotheses – that the program effect was equal to zero – when it was, in fact, true (also known as a Type 1 error). If an estimate of impact was found to be non-significant, this does not necessarily mean that there was no association between the changes in the outcome of interest in ASSP areas vs. non-ASSP areas. It simply means that the estimate of impact was small compared to what could have occurred by chance alone.

To aid in the interpretation of the results, it should be noted that the quasi-experimental research design used for the study allows for plausible attribution of the outcomes to the project and that it does

not allow for the observed changes (impact) to be definitively attributed to ASSP interventions only. For each topic area, several contextual issues and study limitations are considered, which are summarized below. Moreover, when possible, the evidence was assessed with the use of other sources of data, including the qualitative data collected as part of the study, DHIS2 data made available from IMA World Health, and data from the 2013/14 Demographic and Health Survey.

Results: The following are the key findings of the empirical analysis. For the three topic areas covered by the qualitative component of the study (maternal health care utilization, treatment of child illnesses, and child nutrition), highlights of the qualitative results are also presented. A more complete summary of the empirical and qualitative findings is presented in Tables A1-A7, which show the estimated impacts overall, by wealth group, by province, and, if appropriate, by sex.

Service quality and community participation

- The ASSP project was found to have had a significant impact on improved availability of preventive services and malaria diagnostic capabilities in health centers/posts.
- However, ASSP was not found to have had an impact on adequacy of equipment (thermometers, stethoscopes, blood pressure cuffs, adult scales, pediatric scales, and timers), drug supply (Oxytocin, Sulfadoxine-pyrimethamine, and Amoxicillin), the availability of curative services, or community participation in health centers/posts.

Maternal health care utilization

- The model results suggest that the ASSP project had a negative and significant effect on the receipt of at least four ANC visits (the number of visits recommended by the World Health Organization) among women who gave birth in the previous two years. This is largely due to the drop in the percentage of women in Maniema/Tshopo who received four or more ANC visits, from 37.9 percent in 2014 to 27.1 percent in 2017. There was no ASSP project impact on receipt of the first ANC visit within the first trimester of pregnancy, also largely explained by the drop in the percentage of women who received ANC care during the first trimester.
- The ASSP project had a significant and positive effect on the probability of delivering in a health care facility.
- The results of the qualitative analysis suggest that improving uptake of maternal health services in ASSP health zones was challenged by perceived shortages of supplies, an insufficient number of trained and female community health workers assigned to maternal health, and a lack of formal behavioral change strategies to address cultural practices and social norms related to pregnancy and childbirth (taboos about sharing the pregnancy during the first trimester, disposal of the placenta, unwillingness to deliver with a male attendant, inappropriate clothing to attend the health center). While fees for childbirth were officially reduced, the qualitative

research indicates that the official fee schedule was sometimes not followed, with findings showing the health providers often increase fees for delivery care substantially.

Child illnesses

- The ASSP project was found to have had a positive and significant effect on reducing the prevalence of symptoms of ARI and fever among children under five years of age.
- There was no ASSP project impact on diarrhea prevalence on children under five years of age, malaria parasite prevalence or anemia prevalence among children 6 to 59 months of age.

Treatment of child illnesses

- There was no ASSP project impact on the treatment of three common symptoms of childhood illnesses – diarrhea, symptoms of ARI, and fever.
- The study results suggest that the ASSP project had a negative and significant effect on the likelihood of seeking care at a health facility or from a health care provider for children with symptoms of ARI and/or fever.
- The results of the qualitative analysis (in-depth interviews and focus group discussions) indicate that the effectiveness of ASSP's approach was affected by drug stockouts, perceived unavailability and cost of medications, failure of health centers to adhere to listed user fees, long distances to the hospital and challenges navigating hard-to-travel routes, as well as cultural practices which favored traditional remedies and/or religious healing.

Immunization

- The study results suggest that there was no ASSP project impact on vaccination coverage among children 12 to 23 months.
- The results of the qualitative analysis suggest that home visits to promote uptake of child health services were infrequent, shortages of essential supplies such as vaccines and syringes were regular, and limited availability and/or sharing of solar power or refrigerators necessitated reliance on other centers for vaccines.

Child nutrition

- Stunting among children under five years of age increased significantly more in ASSP areas compared with non-ASSP areas, while wasting and underweight among children did not change significantly in ASSP areas compared to non-ASSP areas.
- Findings from the qualitative analysis suggest that there were difficulties in implementing ASSP's nutrition approach, including: time constraints and lack of availability of caregivers, who spend

their days in agricultural fields, which limited the uptake of the strategies to encourage the preparation of enriched porridge and the home gardening strategy; lack of consideration of local practices such as planting vegetable gardens in agricultural fields; the stigma associated with having a malnourished child, which also affected home gardening uptake; and the limited ability to implement behavioral change strategies as designed in the ASSP approach. In addition, respondents reported that RECO's struggled to understand trainings that were conducted in French, exhibited high levels of attrition, and were undermotivated due to the lack of supervision, compensation, and supplies. Limited training was provided to facility-based health workers, who generally lacked the motivation to get involved in providing nutrition services.

Use of insecticide-treated nets (ITN)

- There were no ASSP project impacts detected on the use of ITNs among pregnant women or household ownership of at least one ITN.
- The qualitative analysis suggests that ITNs were not distributed in Maniema while summaries from ASSP's quarterly reports highlight challenges with net condition and utilization among residents, as well as organizational challenges that potentially disrupted the availability of malaria commodities and shifted the focus of implementation activities to other regions (e.g. from Maniema to Kasai).

Modern contraceptive use

- Overall, no ASSP project impact on the use of modern contraceptive methods among women of reproductive age was detected.
- The overall result masks the significant program impact in Nord Ubangi that was not found in Maniema/Tshopo.

Outpatient health care utilization

- The ASSP project was not found to have had an impact on the utilization of outpatient services among individuals of all ages.
- The ASSP project was found to have had a statistically significant impact on increasing the likelihood of receiving outpatient consultations free of charge.
- The ASSP project was found to have had a significant impact on improved perceptions of both equipment availability and the cleanliness of the facility, but not on improved drug availability.

Water, sanitation, and hygiene

- The ASSP project was found to have had an impact on increasing access to both improved water sources and improved sanitation.

- The ASSP project was not found to have had an impact on reported handwashing technique.

Limitations: In interpreting the results of the study, several potential limitations of the research design and data should be noted, some of which were explored by conducting additional analysis of the baseline and endline data and the DHIS2 data made available by the ASSP project.

First, a "gold standard" randomized control trial was not feasible for this evaluation because the target health zones were selected non-randomly. A step-wedge design was considered but was determined to be not appropriate due to IMA World Health's approach to introduce and scale up the interventions as rapidly as possible. While the quasi-experimental design allows for the plausible attribution of the outcomes to the project, it does not allow for observed changes (impact) to be definitively attributed to ASSP interventions only. Indeed, other projects and initiatives might also explain changes in the observed value of indicators. Although the model controls for the presence of a World Bank-supported project in the control areas, as described below, there may have been other projects in the control areas that we are not aware of that were not taken into account.

Second, the limited availability of health information system data at the time the study was designed meant that the matching of comparison groups could be done on only four characteristics. The limited number of matching variables may have hindered the comparability of the invention areas and matched comparisons groups. To account for this, descriptive comparisons of demographic and community characteristics were assessed which helped ensure all covariates are appropriately controlled for in the difference-in-difference analysis.

Third, due to unforeseen delays in obtaining DFID approval of the research protocol, data collection for the baseline phase was delayed by almost by ten months after launching of the ASSP project, which meant that the results of the difference-in-differences approach for some outcomes, such as maternal and child health care utilization, outpatient health care utilization, and use of modern contraception services, may be biased towards the null hypothesis. However, it should be noted that this issue is not a concern for the evaluation of the impacts on child nutrition and WASH outcomes, as ASSP had not yet implemented community-based activities by the time the baseline survey was administered.

Further, the surveys were not conducted in the same months (April-May 2014 and July-September 2017), which may have potentially biased the analyses on outcomes that fluctuate seasonally. Nord/Sud Ubangi was experiencing the rainy season during both the baseline and endline surveys, as were the regions of northern Maniema/Tshopo close to the equator (i.e. north of Kindu). Southern Maniema was experiencing the dry season at endline. Key outcomes in north versus south Maniema at endline were compared to test for seasonal differences; these results are discussed in the report as appropriate.

Fourth, while the study was powered to detect overall differences between intervention areas and matched comparison areas at the household- and individual-levels, it was not powered to detect differences stratified by population sub-groups (i.e. wealth groups and provinces). Nor was the analysis

powered to detect differences in facility-level characteristics. Nevertheless, population sub-group DID models and facility-level DID models were estimated and presented in order to aid in the interpretation of the study findings, and in some instances, the DID results from these models were found to be statistically significant.

Fifth, in interpreting the results, it should be noted that the analysis excluded Kasai/Kasai Central, the provinces where ASSP had the highest level of activity, the greatest number of health zones, and according to ASSP routine program data, the most active uptake of some services. For example, contraception, based on routine service statistics converted to couple-years of protection (CYP, the most widely used measure of outputs in international family planning programs) was higher in Kasai/Kasai Central than in the other sampling domains. However, because of political unrest in Kasai/Kasai Central, it was not possible to collect endline data in this domain.

Sixth, programmatic disruptions in the months leading up to the endline survey in the two domains may have affected the results. Specifically, an audit of the management of the project's operations in Maniema led to a drastic reduction of ASSP funded activities during several months, and in Nord Ubangi, World Vision, the ASSP Implementation Partner in this province, ended collaboration with IMA World Health. To explore the importance of this issue, we analyzed DHIS2 quarterly data from eight quarters, from January-March 2016 to October-December 2017, for several types of service maternal and child health care services but did not detect any dips in service statistics that were associated with the ASSP disruptions.

Seventh, an assumption of the DID model is that the only systematic difference between the ASSP and non-ASSP groups relates to the exposure to the ASSP project. As mentioned above, this assumption may not have been met, as the World Bank introduced its new project *Projet de Développement du Secteur de Santé,* which focused on performance-based financing to improve the delivery of health and family planning services*,* in some of the non-ASSP health zones. Although statistical controls were used to account for this possible bias, it must nonetheless be considered a potential limitation.

Finally, it should be noted that there were differences between the ASSP areas in Maniema/Tshopo and their matched comparison areas, as all the ASSP areas had been exposed to the predecessor project to ASSP, the Access to Healthcare Program, while the matched comparison areas had not. Ideally, we would have included matched comparison areas that had been exposed to this project, but this was not possible, as all the DFID supported health zones in Maniema/Tshopo transitioned into the ASSP project. Whether this factor biased the results, and the direction of the bias, are unclear.

Interpretation of findings: In each of the results chapters, the empirical findings are discussed with respect to many of the limitations described above, as well as to a number of other factors, including the variable power of tests of indicators at different nested levels (i.e. household-, individual-, and facility-levels), the variable quality of indicators in terms of their relationship to impact (as presented in Tables A1-A7). Below is a summary of the key issues that emerged from these assessments.

- **Consistency with other programmatic area findings.** For many of the programmatic areas investigated, such as maternal health care and child health care, the DID results appear to be consistent within the programmatic area. For example, the ASSP project was found not to have had an impact on any of the indicators of antenatal care, on any of the indicators of ITN use, or on any of the indicators of treatment of childhood illnesses. The insignificant findings on service utilization were also consistent with findings that there were limited changes over the study period in the availability of equipment and drugs but were inconsistent with the estimated impacts on other facility-level factors that can influence the quality of care. For example, the ASSP project was found to have had an impact on improved availability of equipment and the cleanliness at the health center level.

- **Consistency with other sources of data.** When possible, the population-based survey results were compared with DHIS2 data available from the DRC's health management information system (as presented in Tables A1-A7). For many types of services, there were inconsistencies. For example, the DHIS2 data indicated higher levels of individuals served (i.e. for the proportion of women receiving antenatal care during the first trimester of the pregnancy) and higher levels of child vaccinations than the population-based service results. However, for many of the outcome indicators, the differences in the two data sources make many of the comparisons problematic. For example, for vaccinations, the DHIS2 provides data on the percentage of 1-year old children vaccinated against measles, while the ASSP surveys provide data on children who received all basic vaccinations, and for child nutrition, the DHIS2 presents data on the number of child nutrition screenings, while the ASSP data provide measurements of child anthropometry.

  In terms of the comparisons with the 2013/14 DHS population-based household survey, the 2014 baseline point estimates for the indicators of maternal health care, child health care, outpatient service utilization based on the ASSP baseline survey are in close alignment with the DHS estimates, supporting the validity of the ASSP survey data.

- **Consistency with qualitative findings.** For the three programmatic areas in which qualitative analysis was carried out – maternal health care, treatment of childhood illnesses, and child nutrition – the quantitative and qualitative results are, for the most part, in alignment. For example, for maternal health care, the qualitative findings that suggested that efforts to improve access to and quality of maternal health care services were constrained by drug and supply shortages are consistent the results on the insignificance of ASSP in influencing the use of antenatal care, and for child nutrition, the qualitative findings that indicated problems in the implementation of the home gardening approach align with the finding that the ASSP project did not have a positive impact on child anthropometry. On the other hand, the qualitative findings on persistent barriers to increasing the percentage of women that deliver in health care facilities were inconsistent with the quantitative finding that the ASSP project did not have had

an impact on the proportion of women who had facility-based deliveries in the two years prior to the survey.

Below are some possible general explanations for the findings of the impact evaluation.

- **Design and scale of interventions.** The ASSP approach included a number of experimental interventions that relied heavily on local buy-in and assumptions about how local health systems and communities would respond. Examples include the Community Health Endowment Strategy, a pilot intervention that aimed to mobilize community health financing, and the home gardening intervention, which aimed to combat child malnutrition by improving the availability of locally-produced foods high in nutritional value. However, many of the interventions were not accompanied by formative research to better understand the underlying social and contextual factors that could potentially affect the uptake of the interventions supported by the project. Nor did the project pilot the interventions to test their effectiveness and costs.

  Moreover, due to limited resources, many of the community-based interventions supported by the project, such as the WASH, nutrition, and ITN interventions, were implemented unevenly across ASSP health zones. This limited the likelihood of finding significant impacts of the ASSP project. Nevertheless, ASSP was found to have had significant impacts on increasing the percentage of households with improved water and sanitation. In the case of child nutrition, the limited coverage and the nature of the intervention could not have plausibly influenced population-based indicators such as stunting, and as a result, the results for this indicator should be viewed with caution.

- **Contextual differences between provinces.** Of particular concern are the findings that the ASSP project was found to have had a negative impact on some of the outcomes analyzed, including stunting, the use of antenatal care, and the treatment of some childhood illnesses. The results on stunting were primarily due to the increased prevalence in Maniema, from 42.0 percent in 2014 to 57.0 percent in 2017, a statistically significant increase that did not occur in Nord Ubangi. Similarly, the decreased proportion of pregnant women who received at least four antenatal care visits was also primarily due to drops in Maniema, from 37.9 percent in 2014 to 27.1 percent in 2017, while proportions among pregnant women in Nord Ubangi were relatively stable over the study period.

  One possible explanation for the variation in the estimated changes across provinces concerns DFID's predecessor project, which operated in Maniema, but not in Nord Ubangi. If the Access to Healthcare Project was, in fact, effective in improving the use of health services and was then replaced by a less effective program, then this could explain the lack of impact in Maniema. This is particularly true for the use of antenatal care which was measured over a two-year recall period that has some overlap with the predecessor. However, the impact of the Access to Healthcare Project was not rigorously assessed, so we are unable to make comparisons in the effectiveness of the two projects. Moreover, the Access to Healthcare project did not include

nutrition programming, so the presence of this project does not appear to be a plausible explanation for increased levels of malnutrition in Maniema.

Another possible explanation is regression to the mean, in which the worsening of some indicators observed over the study period, such as stunting, may be due to selecting an extreme group in the first measurement, and the second measurement being closer to the mean for all subjects.

However, these are explanations are speculative, and it should be noted that we have no corroborating evidence that would explain why ASSP would have had a damaging impact on any of the outcomes investigated in this evaluation.

- **Management and coordination.** IMA World Health and its partners faced a number of formidable challenges in the management and coordination of the ASSP project, including the remoteness of the project areas as well as the limited transportation and communications infrastructure available in the DRC. The lack of banking systems was a major problem that affected the financial management of the project. While monitoring procedures were in place, these challenges affected the ability to provide support to health zone staff to both identify and then respond to problems in the field.

- **Human resources for health.** In the cases in which the interventions were not as effective as anticipated, one weak link that has been identified through the qualitative findings were challenges in health worker motivation. For example, the results of the qualitative research on nutrition indicate that there were weaknesses in the ability and willingness of outreach workers to carry out their job responsibilities, due to limited incentives and assumptions about remuneration, leading to constant turnover. In the case of facility-based health workers, operations research carried out by Tulane suggests that the removal of performance-based pay in Maniema may have had unanticipated effects on morale and motivation, which may help explain why some of the facility-based interventions did not have the anticipated impact.

- **Health systems expertise.** While the ASSP project had a very strong project management team along with project coordinators that were extremely knowledgeable of health systems and had an unparalleled understanding of the DRC context, ASSP could have benefited from additional outside technical expertise, particularly for some of the more novel community-based interventions that were introduced by the project.

Conclusions and recommendations: Overall, the results of the evaluation suggest that the ASSP project had a positive impact on several outcomes, including reducing the incidence of childhood illnesses (fever and suspected pneumonia), improving rates of delivery in health care facilities among pregnant women, reducing out-of-pocket expenditure for outpatient care, and increasing improved sources of water and sanitation. However, the effects of the ASSP project were found to be insignificant for most of the

outcomes analyzed, and for some outcomes, such as the use of ANC services, facility-based treatment of children with symptoms of ARI and fever, and stunting, were found to be negative and significant. The reasons for the insignificant and negative impacts of the ASSP project are unclear, as discussed in the section above.

The empirical results are based on a quasi-experimental survey design that was sufficiently powered to detect the anticipated improvements in most of the indicators assessed, with the exception of facility-level outcomes. Moreover, for those topic areas in which qualitative analysis was also carried out, the empirical findings are consistent with the qualitative findings.

Based on the study findings, the following are recommendations to consider for future DFID programming.

- **More formative research focused on community perceptions and needs.** This recommendation is based on the qualitative research findings indicating that 1) perceptions of low quality of care as well as cultural practices and social norms are important factors that constrain the use of facility-based maternal and child health care services, and 2) time constraints, lack of availability of caregivers, stigma associated with having a malnourished child, and other factors adversely affecting the uptake of the project's home gardening approach to improving child nutrition. More use of formative research would allow for greater consideration of geographical and cultural differences, and adaptations in the design of program approaches to better coincide with contextual conditions.

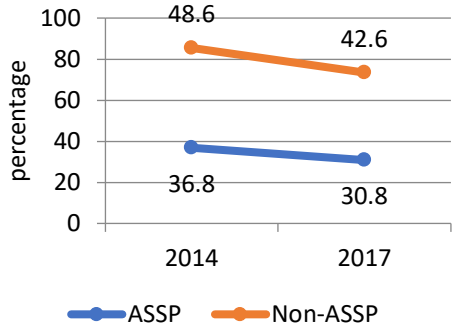
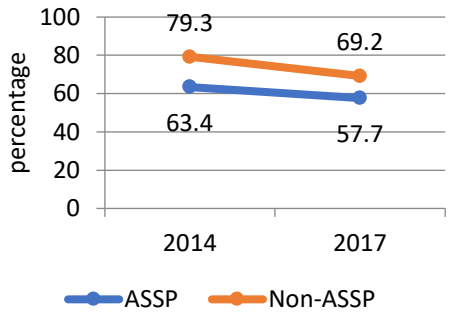
- **More focus on incorporating behavior change and communications strategies in the design of interventions.** This recommendation is based on the limited amount of attention that such interventions received in the ASSP approach, as well as on qualitative research findings that suggested that behavioral factors limited the uptake of key ASSP interventions.

- **More programmatic emphasis on the role that changes in provider payment strategies (i.e. changing how facility- and community-based health workers are paid) can play in influencing health worker motivation and incentives, and in turn, service quality and availability.** This recommendation is based on the qualitative research findings indicating that reductions in pay in Maniema may have had the unintended consequence of reducing health worker motivation of both community-based and facility-based health workers, and as a result, the quality of health services.

- **More use of piloting to inform decisions on whether and how interventions should be scaled up, particularly for experimental community-based interventions that rely on untested assumptions regarding community and health worker behaviors, and more emphasis on monitoring and evaluation of those interventions.** This recommendation is based on the results indicating limited uptake of the home gardening approach as well as the community-based health financing approach, investigated through a separate operations research study, that was intended to mobilize household pre-paid premiums for local health centers.

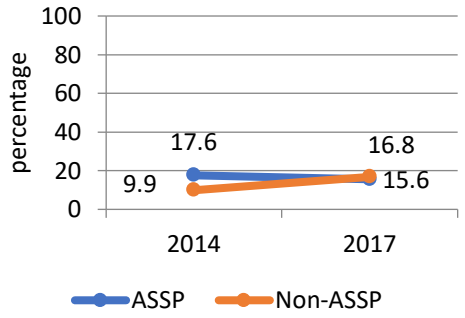
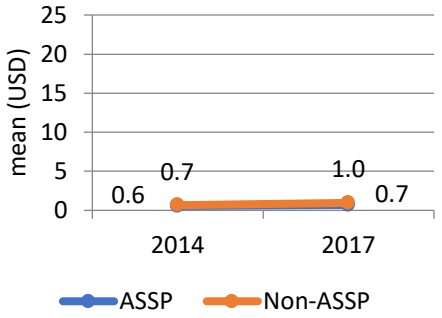
- **More programmatic emphasis on the supervision of local health officers and health workers and on improving the collection, availability and use of routine data, beyond the data that is available in the DHIS2.** This recommendation is based on findings from the qualitative research component of the study that indicated that limited supervision of health workers may have played a role in constraining the use of ASSP-supported interventions, and findings from an operations research study on the project's community-based financing strategy that indicated problems in the quality and use of programmatic data that was reported to the Kinshasa-based ASSP management team.

Table A1. Summary of impact evaluation results for maternal health indicators, and an assessment of the consistency of the results with other indicators and other sources of data

		At least 4 ANC visits	At least 3 ANC visits
Absolute change in outcome			
Project impact on outcome		Decreased	No impact
Wealth quintile	Low; Low-middle	No impact	No impact
	Middle; High-middle; High	Decreased	No impact
Sampling domain	Nord/Sud Ubangi	No impact	No impact
	Maniema/Tshopo	Decreased	No impact
Consistency with related indicators		ASSP had limited impact on antenatal care overall.	ASSP had limited impact on antenatal care overall.
Consistency with other data sources (DHIS2 & SPA)		Not consistent with DHIS2 data where reports indicate a large proportion of pregnant women (>60%), throughout Maniema, Nord Ubangi & Tshopo, attending at least 4 ANC visits in early 2017, with general improvements across all sampling domains, with each successive quarter. DHIS2 data from 2014 was not available. However, baseline survey point estimates align with 2013/14 DHS estimates (i.e. among women who had a live birth in the last five years prior to the survey, 48% at least completed the four recommended visits).	Not consistent with DHIS2 data where reports indicate a large proportion of pregnant women (>70%), throughout Maniema, Nord Ubangi & Tshopo, attending at least 3 ANC visits in early 2017, with general improvements across all sampling domains, with each successive quarter. DHIS2 data from 2014 were not available.

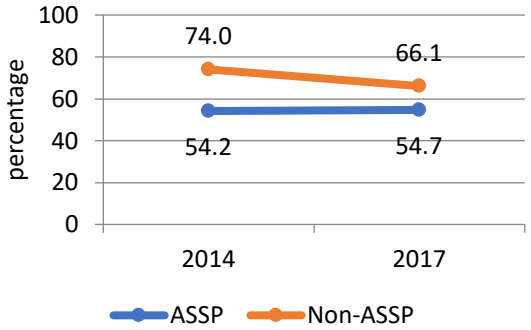
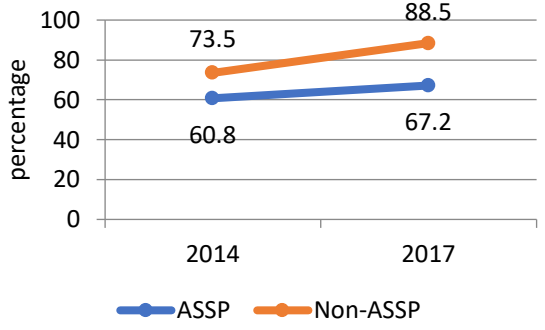
Relevant qualitative findings	Consistent with qualitative findings which note that efforts to improve access to and uptake of maternal health services were constrained by drug and supply shortages. Further, an insufficient number of trained and female community health workers (CHWs) assigned to maternal health paired with limited outreach activities of CHWs, particularly to women living in remote locations, likely restricted health service utilization. Mothers who were interviewed also complained about the time involved in traveling to the health centers and participating in ANC, with some claiming that there is often a long waiting period and that participation in ANC consultations generally consumes an entire day.	Consistent with qualitative findings which note that efforts to improve access to and uptake of maternal health services were constrained by drug and supply shortages. Further, an insufficient number of trained and female community health workers (CHWs) assigned to maternal health paired with limited outreach activities of CHWs, particularly to women living in remote locations, likely restricted health service utilization. Mothers who were interviewed also complained about the time involved in traveling to the health centers and participating in ANC, with some claiming that there is often a long waiting period and that participation in ANC consultations generally consumes an entire day.

Table A1. Summary of impact evaluation results for maternal health indicators, and an assessment of the consistency of the results with other indicators and other sources of data (con't)

		First ANC visit within the 1st trimester of pregnancy	Mean expenditure per ANC visit (USD)
Absolute change in outcome			
Project impact on outcome		No impact	No impact
Wealth quintile	Low; Low-middle	No impact	No impact
	Middle; High-middle; High	No impact	No impact
Sampling domain	Nord/Sud Ubangi	No impact	No impact
	Maniema/Tshopo	Decreased	No impact
Consistency with related indicators		ASSP had limited impact on antenatal care overall.	ASSP had limited impact on antenatal care overall.
Consistency with other data sources (DHIS2 & SPA)		DHIS2 data suggest modest declines across quarterly periods, in the proportion of women initiating their first ANC visit within the first trimester throughout Maniema, Nord Ubangi & Tshopo. However, the absolute proportion of women initiating ANC consultations in their first trimester (>30%) is still larger than estimates from endline survey analyses. DHIS2 data from 2014 were not available. However, baseline survey point estimates align with 2013/14 DHS estimates (i.e. 17% of women made their first visit before the fourth month of pregnancy).	No comparative data on ANC expenditure available.

Relevant qualitative findings	Consistent with qualitative findings, where reports – from health care workers, key informants and mothers – consistently informed of challenges with motivating women to attend ANC consultations early in their pregnancy, noting both cultural taboos and reluctance of women to share a new pregnancy (especially within the first three months) with male health workers. During qualitative interviews with mothers, less than 1/5 of women reported starting ANC consultations during the first trimester as is officially recommended.	The observation of no change in mean expenditure per ANC visit is consistent with qualitative findings, which inform that a minimal registration fee – reported to be set at around 500 francs – was required for ANC consultations, with women generally paying between 500 – 1000 francs.

Table A1. Summary of impact evaluation results for maternal health indicators, and an assessment of the consistency of the results with other indicators and other sources of data (con't)

		Pregnant women who used an ITN last night	Households with at least one ITN
Absolute change in outcome			
Project impact on outcome**		No impact	No impact
Wealth quintile	Low; Low-middle	No impact	No impact
	Middle; High-middle; High	No impact	No impact
Sampling domain	Nord/Sud Ubangi	No impact	Decreased
	Maniema/Tshopo	No impact	No impact
Consistency with related indicators		The ASSP program had no impact on ITN indicators overall.	The ASSP program had no impact on ITN indicators overall.
Consistency with other data sources (DHIS2 & SPA)		Logframe data were only available for Kasai Central, Kasai and Maniema, with the indicator focused on the number/percentage of pregnant women *and* children under-one year provided with ITNs; thus no effective comparisons were possible. However, baseline point estimates align with 2013/14 DHS estimates (i.e. 60% of pregnant women slept under an ITN in 2013).	Logframe data were only available for Kasai Central, Kasai and Maniema, with the indicator focused on the number/percentage of pregnant women *and* children under-one year provided with ITNs; thus no effective comparisons were possible. However, baseline point estimates align with 2013/14 DHS estimates (i.e. 70% of households own at least one ITN).
Relevant qualitative findings		Consistent with qualitative data collected for the child health study component, with caregivers of malnourished children in Maniema claiming that	Consistent with qualitative data collected for the child health study component, with caregivers of malnourished children in Maniema claiming that

	they had not received mosquito nets since the time that Merlin was the implementing NGO in the health zone.	they had not received mosquito nets since the time that Merlin was the implementing NGO in the health zone.

*The program scope is important to note here, however, as data from quarterly reports suggest that ASSP was not responsible for purchasing mosquito nets in either mass or routine campaigns. ASSP's quarterly reports also mention that throughout years 1 through 4 of the ASSP project, program support for malaria interventions targeted 19 health zones – the majority of which were in Kasai and thus excluded from analyses – with organizational challenges also potentially disrupting the availability of malaria commodities.

Table A1. Summary of impact evaluation results for maternal health indicators, and an assessment of the consistency of the results with other indicators and other sources of data (con't)

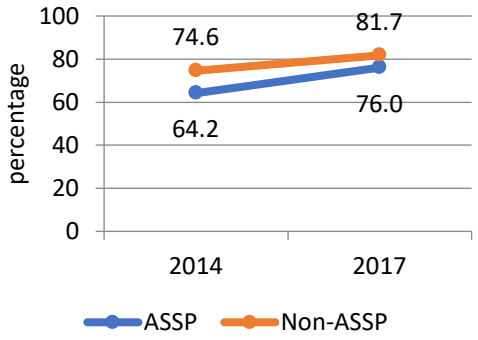
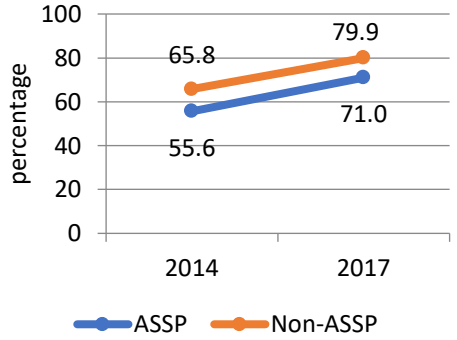
		Delivery within a health facility	Facility delivery in the presence of a skilled birth attendant
Absolute change in outcome			
Project impact on outcome		Increased	No impact
Wealth quintile	Low; Low-middle	Increased	No impact
	Middle; High-middle; High	No impact	No impact
Sampling domain	Nord/Sud Ubangi	No impact	No impact
	Maniema/Tshopo	No impact	No impact
Consistency with related indicators		Not consistent with decrease in 3 & 4 ANC visits, nor with unchanged expenditure. Consistent with impact on equipment and cleanliness.	Consistent with other delivery care indicators which indicated limited program impact overall.
Consistency with other data sources (DHIS2 & SPA)		Consistent with DHIS2 reports of increases in facility-based delivery, although survey point estimates are lower. Survey point estimates are also lower than 2013/14 DHS estimates.	Consistent with DHIS2 reports of increases in the proportion of facility-based deliveries conducted in the presence of a skilled birth attendant, although survey point estimates are lower. Baseline survey point estimates are also lower than 2013/14 DHS estimates.
Relevant qualitative findings		Mostly consistent, although women in Nord Ubangi expressed resistance to delivering in facilities.	Mostly consistent, although women in Nord Ubangi expressed resistance to delivering in facilities.

Table A1. Summary of impact evaluation results for maternal health indicators, and an assessment of the consistency of the results with other indicators and other sources of data (con't)

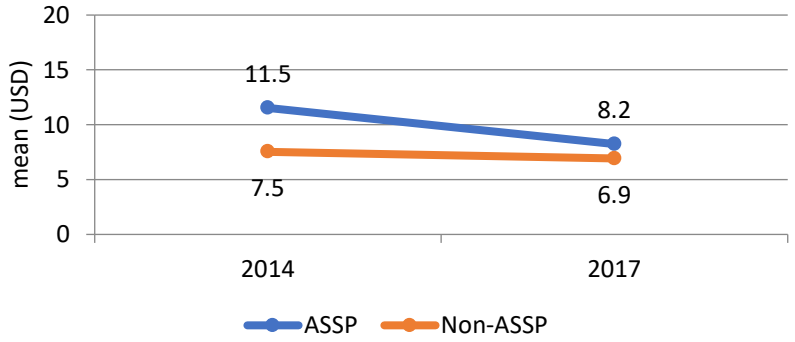
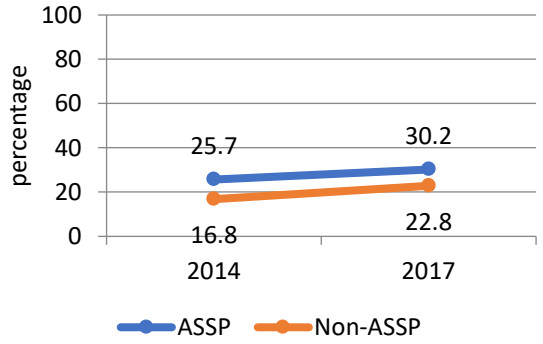
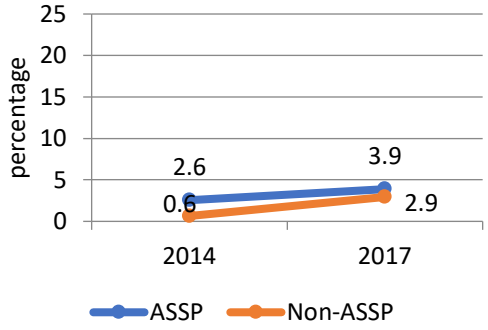
		Mean expenditure on delivery (USD)
Absolute change in outcome		
Project impact on outcome		No impact
Wealth quintile	Low; Low-middle	No impact
	Middle; High-middle; High	No impact
Sampling domain	Nord/Sud Ubangi	No impact
	Maniema/Tshopo	No impact
Consistency with related indicators		Consistent with other delivery care indicators which indicated limited program impact overall.
Consistency with other data sources (DHIS2 & SPA)		No comparative data on delivery expenditure available.
Relevant qualitative findings		The observation of no change in mean expenditure on delivery is consistent with qualitative findings, which inform that normal facility-based delivery fees were fixed at 1000 Cf. Notably, among women interviewed, the majority reported paying more than the fixed 1,000 francs rate, with fees paid ranging from 3,600 to 30,000 francs.

Table A1. Summary of impact evaluation results for maternal health indicators, and an assessment of the consistency of the results with other indicators and other sources of data (con't)

		At least 1 postpartum care visit for the mother in the 2 days following delivery	At least 1 postnatal care visit for the baby in the 2 days following delivery
Absolute change in outcome			
Project impact on outcome		No impact	Decreased
Wealth quintile	Low; Low-middle	No impact	No impact
	Middle; High-middle; High	No impact	Decreased
Sampling domain	Nord/Sud Ubangi	No impact	No impact
	Maniema/Tshopo	No impact	No impact
Consistency with related indicators		Consistent with other delivery care indicators which indicated limited program impact overall.	Consistent with other delivery care indicators which indicated limited program impact overall.
Consistency with other data sources (DHIS2 & SPA)		Not consistent with DHIS data where a large and increasing proportion of women, across quarterly periods in 2017, are noted to have received a post-partum care visit either within 6 hours of birth or within 6 days of birth. Baseline survey point estimates are also lower than 2013/14 DHS estimates which indicate that 48% of women received postnatal care.	DHIS data on post-natal care for the baby not available.
Relevant qualitative findings		Consistent with qualitative findings where health worker and key informant interviewees noted that the post-natal consultations often did not take place, with providers generally refusing to offer the service because they did not have the necessary materials (e.g. vitamin A, folic acid, iron) with which	

	to care for women who might attend. Respondents also informed of cultural practices that challenged uptake of these services, including Buakelé in Nord Ubangi, where a woman stays home for a year after birth to first protect and then celebrate the preservation of her life and that of her baby. Mothers who were interviewed similarly affirmed that they had not attended any post-natal consultations.

Table A1. Summary of impact evaluation results for maternal health indicators, and an assessment of the consistency of the results with other indicators and other sources of data (con't)

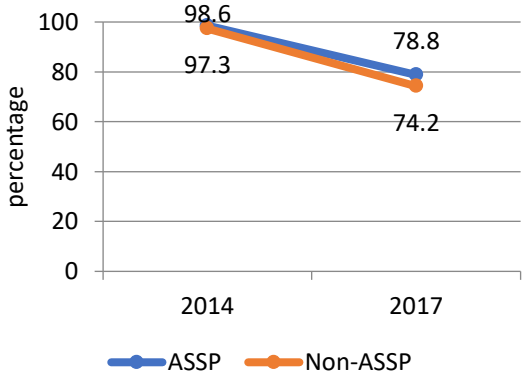
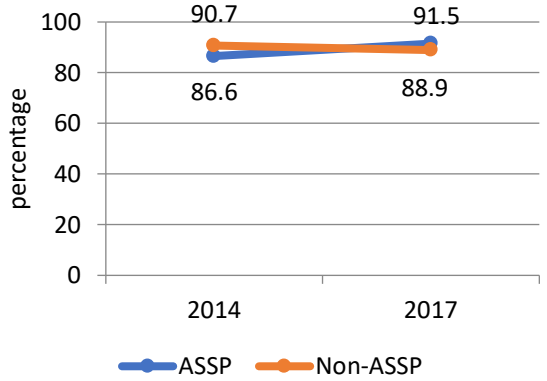
		Adequate competence of person assisting delivery	Adequate availability of equipment
Absolute change in outcome			
Project impact on outcome		No impact	Increased
Wealth quintile	No impact	No impact	No impact
	Middle; High-middle; High	No impact	Increased
Sampling domain	Nord/Sud Ubangi	No impact	No impact
	Maniema/Tshopo	No impact	Increased
Consistency with related indicators		Indicators regarding perceptions of quality suggested mixed program impact.	Indicators regarding perceptions of quality suggested mixed program impact.
Consistency with other data sources (DHIS2 & SPA)		Data on perceptions of quality during delivery not available.	Data on perceptions of quality during delivery not available.
Relevant qualitative findings		Qualitative data was not collected on the perceived ability of the person assisting childbirth to provide delivery care.	Some respondents expressed appreciation for improvements in delivery infrastructure and availability of quality equipment needed for maternal services, while others reported that some equipment provided proved to be inadequate or inappropriate.

Table A1. Summary of impact evaluation results for maternal health indicators, and an assessment of the consistency of the results with other indicators and other sources of data (con't)

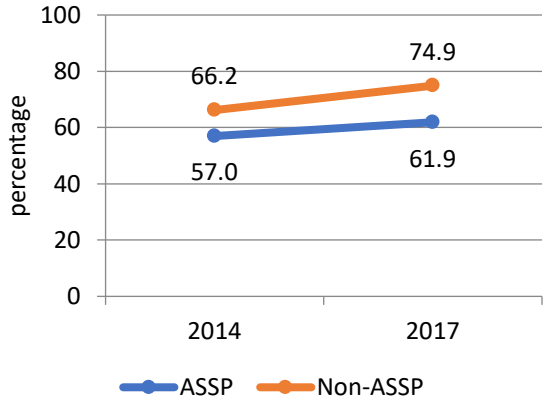
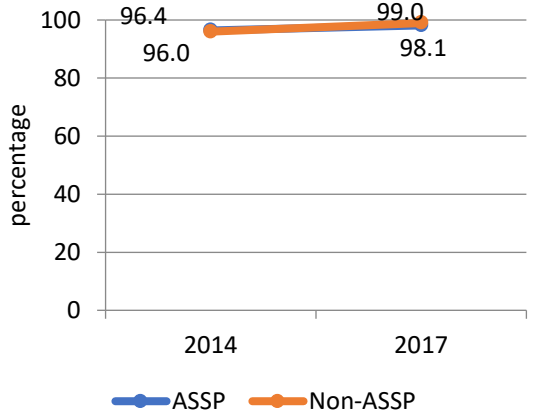
		Adequate availability of drug supplies	Adequate manner in which health situation explained
Absolute change in outcome			
Project impact on outcome		No impact	No impact
Wealth quintile	No impact	No impact	No impact
	Middle; High-middle; High	No impact	No impact
Sampling domain	Nord/Sud Ubangi	No impact	No impact
	Maniema/Tshopo	No impact	Increased
Consistency with related indicators		Indicators regarding perceptions of quality suggested mixed program impact.	Indicators regarding perceptions of quality suggested mixed program impact.
Consistency with other data sources (DHIS2 & SPA)		Data on perceptions of quality during delivery not available.	Data on perceptions of quality during delivery not available.
Relevant qualitative findings		Consistent with qualitative findings noting that frequent shortages of supplies and drugs often influenced capacity for quality care.	Not consistent with qualitative reports among mother respondents who all noted appreciation for the interpersonal approach used by the health providers during childbirth, stating that providers were respectful and friendly.

Table A1. Summary of impact evaluation results for maternal health indicators, and an assessment of the consistency of the results with other indicators and other sources of data (con't)

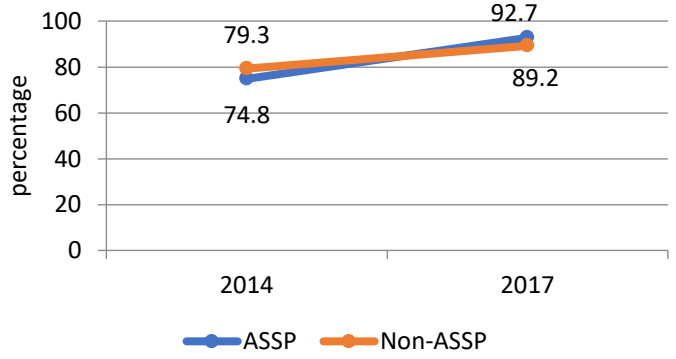
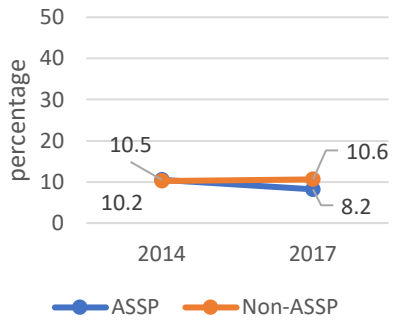
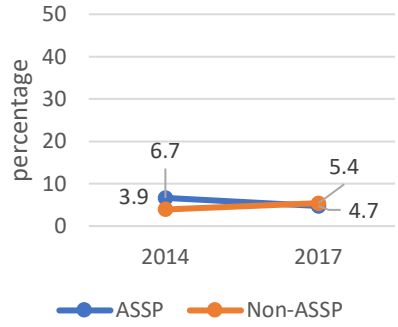
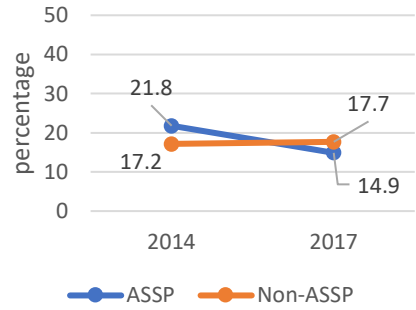
		Adequate cleanliness of health facility
Absolute change in outcome		
Project impact on outcome		Increased
Wealth quintile	No impact	No impact
	Middle; High-middle; High	No impact
Sampling domain	Nord/Sud Ubangi	No impact
	Maniema/Tshopo	No impact
Consistency with related indicators		Indicators regarding perceptions of quality suggested mixed program impact.
Consistency with other data sources (DHIS2 & SPA)		Data on perceptions of quality during delivery not available.
Relevant qualitative findings		Somewhat inconsistent with qualitative findings where many mother-respondents expressed reservations about cleanliness.

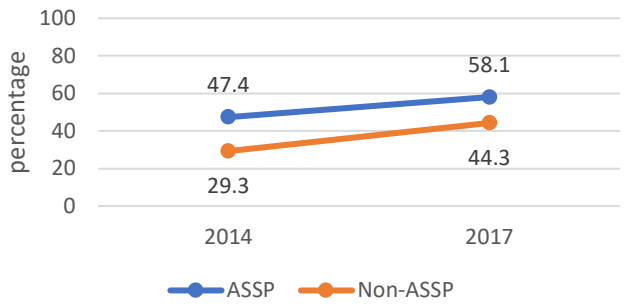
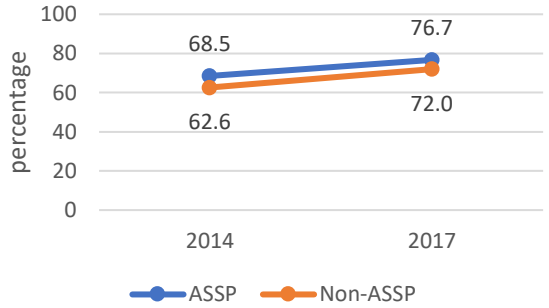
Table A2. Summary of impact evaluation results for child health indicators, and an assessment of the consistency of the results with other indicators and other sources of data

		Diarrhea	Symptoms of ARI	Fever
Absolute change in outcome				
Project impact on outcome		No impact	Decreased	Decreased
Sex	Female	No impact	No impact	No impact
	Male	No impact	Decreased	No impact
Wealth quintile	Low; Low-middle	No impact	No impact	No impact
	Middle; High-middle; High	No impact	Decreased	Decreased
Sampling domain	Nord/Sud Ubangi	No impact	No impact	No impact
	Maniema/Tshopo	No impact	Decreased	No impact
Consistency with related indicators		Not consistent with results showing improvements in WASH outcomes, such as improved sources of household drinking water and improved sanitation.	Consistent with decline in fever prevalence. Not consistent, however, with the decline in the number of children 12-23 months receiving all basic vaccinations.	Consistent with decline in prevalence of symptoms of ARI. Not consistent however with the decline in the number of children 12-23 months receiving all basic vaccinations or the increase in malaria parasite prevalence among children aged 6-59 months.
Consistency with other data sources (DHIS2 & SPA)		Not consistent with DHIS2 data which indicate a higher absolute burden of childhood diarrhea in 2017, with rates as high as 28% in	Not consistent with DHIS2 data which indicate a higher absolute burden of suspected childhood pneumonia in 2017, ranging from 25% in Tshopo to	DHIS2 data on fever prevalence among children under-five were not available.

	Nord Ubangi. DHIS2 data also suggest modest fluctuations between Quarter 1 2016 and Quarter 4 2017 with a trend toward increasing prevalence of diarrhea over time. DHIS2 data for 2014 were not available. However, baseline survey point estimates are somewhat comparable with 2013/14 DHS estimates (i.e. 17% prevalence of diarrhea in the 2 weeks prior to the survey, among children under 5 years of age).	31% in Nord Ubangi and 32% in Maniema. Furthermore, DHIS2 data between Quarter 1 2016 and Quarter 4 2017 suggest a trend toward increasing prevalence of suspected pneumonia over time. DHIS2 data for 2014 were not available. However, baseline survey point estimates align with 2013/14 DHS estimates (i.e. 7% prevalence of symptoms of ARI in the 2 weeks prior to the survey, among children under 5 years of age).	However, baseline survey point estimates align with 2013/14 DHS estimates (i.e. 30% prevalence of fever in the 2 weeks prior to the survey, among children under 5 years of age).
Consistency with qualitative findings	Consistent with qualitative findings which note that BCC activities were informal and limited, and that home visits were seldom.	On the one hand, qualitative findings note that BCC activities were informal and limited, and that home visits were seldom. However, qualitative results also inform that supervisory visits focused on EPI records, the number of vaccines stored and the way vaccines were refrigerated, allowing for additional training, increased knowledge, and motivation to improve quality of work. **	On the one hand, qualitative findings note that BCC activities were informal and limited, and that home visits were seldom. However, qualitative results also inform that supervisory visits focused on EPI records, the number of vaccines stored and the way vaccines were refrigerated, allowing for additional training, increased knowledge, and motivation to improve quality of work.

** Accordingly, the project's commitment to improving cold chain maintenance via supportive supervision (in addition to provision of solar technology and refrigerators), could have supported improved quality of vaccines, boosting vaccine effectiveness and thereby contributing to reduced disease prevalence, in spite of lower than anticipated vaccination coverage rates.

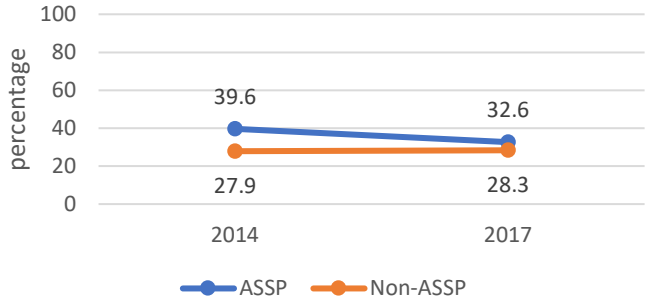
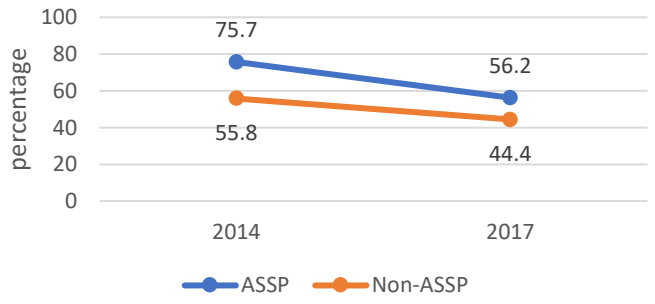
Table A2. Summary of impact evaluation results for child health indicators, and an assessment of the consistency of the results with other indicators and other sources of data (con't)

		Malaria	Anaemia
Absolute change in outcome			
Project impact on outcome**		No impact	No impact
Wealth quintile	Low; Low-middle	No impact	No impact
	Middle; High-middle; High	No impact	No impact
Sampling domain	Nord/Sud Ubangi	Decreased	Decreased
	Maniema/Tshopo	No impact	Increased
Consistency with related indicators		Consistent with increase in anaemia prevalence; though not consistent with observed decline in two-week point prevalence rates of fever.	Increase in anaemia prevalence consistent with increase in malaria parasite prevalence.
Consistency with other data sources (DHIS2 & SPA)		Somewhat consistent with DHIS2 data, which indicate a high burden of malaria among children that generally increased between 2016 and 2017, ultimately ranging from 61% in Maniema to 74% in Tshopo to 120% in Nord Ubangi. DHIS2 data for 2014 were not available. However, baseline survey point estimates are somewhat comparable with 2013/14 DHS estimates (i.e. 31% children tested positive for the malaria rapid diagnostic test).	DHIS2 data on anaemia prevalence among children aged 6-59 months were not available. However, baseline survey point estimates align with 2013/14 DHS estimates (i.e. 60% prevalence of anaemia, among children aged 6-59 months).

Consistency with qualitative findings	Consistent with qualitative findings where caregivers of malnourished children in Maniema claimed that they had not received mosquito nets since the time that Merlin was the implementing NGO in the health zone.	Consistent with qualitative findings where caregivers of malnourished children in Maniema claimed that they had not received mosquito nets since the time that Merlin was the implementing NGO in the health zone.

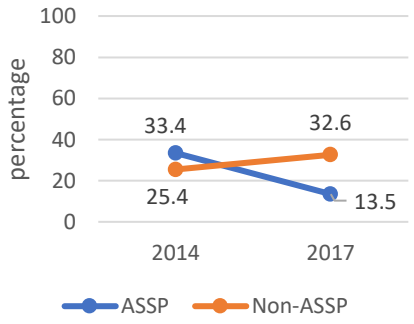
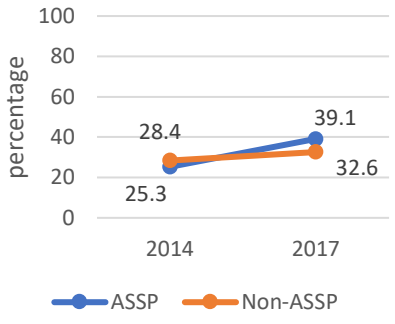
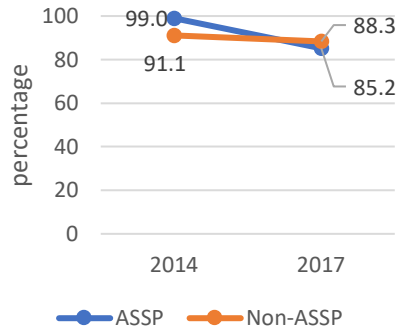
[**]The program scope is important to note here, however, as data from quarterly reports suggest that ASSP was not responsible for purchasing mosquito nets in either mass or routine campaigns. ASSP's quarterly reports also mention that throughout years 1 through 4 of the ASSP project, program support for malaria interventions targeted 19 health zones – the majority of which were in Kasai and thus excluded from analyses – with organizational challenges also potentially disrupting the availability of malaria commodities.

Table A2. Summary of impact evaluation results for child health indicators, and an assessment of the consistency of the results with other indicators and other sources of data

		Received either ORS or RHF	Received either ORS or RHF or increased fluids
Absolute change in outcome			
Project impact on outcome		No impact	No impact
Sex	Female	Increased	No impact
	Male	No impact	No impact
Wealth quintile	Low; Low-middle	No impact	No impact
	Middle; High-middle; High	Increased	No impact
Sampling domain	Nord/Sud Ubangi	No impact	Decreased
	Maniema/Tshopo	No impact	No impact
Consistency with related indicators		Consistent with other treatment of childhood illnesses indicators where no program impact was generally observed.	Consistent with other treatment of childhood illnesses indicators where no program impact was generally observed.
Consistency with other data sources (DHIS2 & SPA)		Not consistent with DHIS2 data which indicate a higher absolute proportion of children receiving ORS or RHF for diarrhea (86% - 96%), despite modest declines between 2016-2017 in all sampling domains except Tshopo (where improvements were observed). DHIS2 data for 2014 were not available. However, baseline survey point estimates align with 2013/14 DHS estimates (i.e. 42% of children who had diarrhea received ORS packets or recommended home solution).	DHIS2 data on the proportion of children receiving ORS or RHF or increased fluids for diarrhea were not available. However, baseline survey point estimates align with 2013/14 DHS estimates (i.e. ~75% of children who had diarrhea received ORS packets or recommended home solution or increased fluids).

Consistency with qualitative findings	Consistent with qualitative findings from in-depth interviews and focus group discussions which indicate that lack of formal behavior change strategies limited the effectiveness of communication efforts to sensitize parents and caregivers about the importance of curative health service use for child illnesses. Qualitative data further suggest that willingness to access facility-based services was affected by drug stock-outs, perceived unavailability and cost of medications, failure of health centers to adhere to listed user fees, long distances to the hospital and challenges navigating hard-to-travel routes, as well as cultural practices which favored traditional remedies and/or religious healing. Another deterrent to health-care seeking, which emerged from the qualitative findings, was the quality of care received at some health centers, with facilities reported to be crowded, unclean, and lacking privacy while providers were often described as lacking politesse and compassion. Furthermore, participants across all sites reported not being aware of community care sites, which plausibly limited their seeking care at these facilities.

Table A2. Summary of impact evaluation results for child health indicators, and an assessment of the consistency of the results with other indicators and other sources of data

		Received antibiotics for symptoms of ARI	Received antimalarials for fever	Treatment for ARI and/or fever sought at a health facility or from a health provider
Absolute change in outcome				
Project impact on outcome		No impact	No impact	Decreased
Sex	Female	No impact	No impact	No impact
	Male	No impact	No impact	No impact
Wealth quintile	Low; Low-middle	No impact	Decreased	No impact
	Middle; High-middle; High	No impact	Increased	No impact
Sampling domain	Nord/Sud Ubangi	No impact	No impact	No impact
	Maniema/Tshopo	No impact	Increased	No impact
Consistency with related indicators		Consistent with other treatment of childhood illnesses indicators where no program impact was generally observed.	Consistent with other treatment of childhood illnesses indicators where no program impact was generally observed.	Consistent with other treatment of childhood illnesses indicators where no program impact was generally observed.
Consistency with other data sources (DHIS2 & SPA)		Not consistent with DHIS2 data which indicate a higher absolute proportion of children receiving antibiotics for suspected pneumonia (90% - 99%), with modest declines between 2016-2017 except within	Not consistent with DHIS2 data which indicate a higher absolute proportion of children receiving antimalarials for fever (96% - 98%), with minimal changes between 2016-2017. DHIS2 data from 2014	DHIS2 data on the proportion of children with fever and/or symptoms of ARI, for whom treatment was sought at a health facility or from a health provider, were not available. However,

	the Tshopo region where improvements were observed. DHIS2 data from 2014 were not available.	were not available. However, baseline survey point estimates align with 2013/14 DHS estimates (i.e. 29% of children who had fever treated with antimalarials).	baseline survey point estimates align with 2013/14 DHS estimates (i.e. advice or treatment sought from an establishment or healthcare provider for 42% of children with symptoms of ARI and 40% for cases of fever).
Consistency with qualitative findings	Consistent with qualitative findings from in-depth interviews and focus group discussions which indicate that lack of formal behavior change strategies limited the effectiveness of communication efforts to sensitize parents and caregivers about the importance of curative health service use for child illnesses. Qualitative data further suggest that willingness to access facility-based services was affected by drug stock-outs, perceived unavailability and cost of medications, failure of health centers to adhere to listed user fees, long distances to the hospital and challenges navigating hard-to-travel routes, as well as cultural practices which favored traditional remedies and/or religious healing. Another deterrent to health-care seeking, which emerged from the qualitative findings, was the quality of care received at some health centers, with facilities reported to be crowded, unclean, and lacking privacy while providers were often described as lacking politesse and compassion. Furthermore, participants across all sites reported not being aware of community care sites which plausibly limited their seeking care at these facilities.		

Table A2. Summary of impact evaluation results for child health indicators, and an assessment of the consistency of the results with other indicators and other sources of data

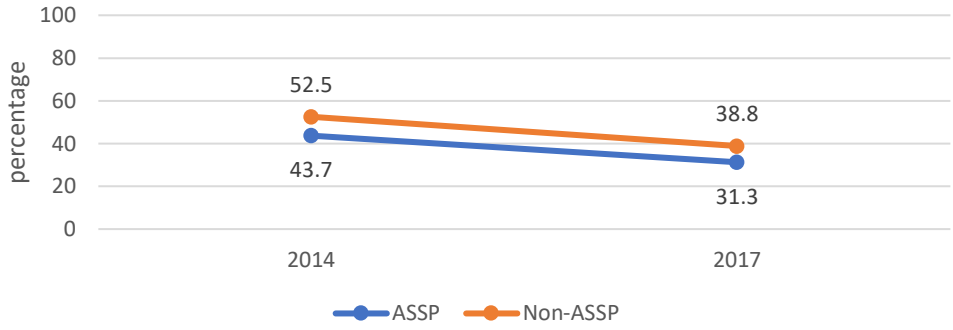
		Children 12-23 months who received all basic immunizations
Absolute change in outcome		
Project impact on outcome		No impact
Sex	Female	No impact
	Male	No impact
Wealth quintile	Low; Low-middle	No impact
	Middle; High-middle; High	Increased
Sampling domain	Nord/Sud Ubangi	No impact
	Maniema/Tshopo	Increased
Consistency with related indicators		Consistent with other treatment of childhood illnesses indicators where no program impact was generally observed.
Consistency with other data sources (DHIS2 & SPA)		DHIS2 data examines the percentage of 1-year old children vaccinated against measles, so the relationship with survey data is unclear. However, baseline point estimates align with 2013/14 DHS estimates (i.e. 45% of children aged 12-23 months received all specified vaccines at any time before the survey).
Consistency with qualitative findings		Consistent with qualitative findings which note that home visits to promote uptake of child health services were infrequent, while shortages of essential supplies such as vaccines and syringes were regular, and limited availability and/or sharing of solar power or refrigerators necessitated reliance on other centers for vaccines. Qualitative data also informed of challenges in Nord Ubangi, with respondents noting that lack of formal BBC strategies limited communication effectiveness and resulted in great resistance from community members to make use of health services in general.

Table A3. Summary of impact evaluation results for child nutrition indicators, and an assessment of the consistency of the results with other indicators and other sources of data

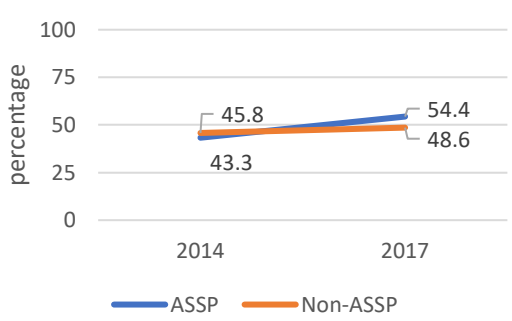
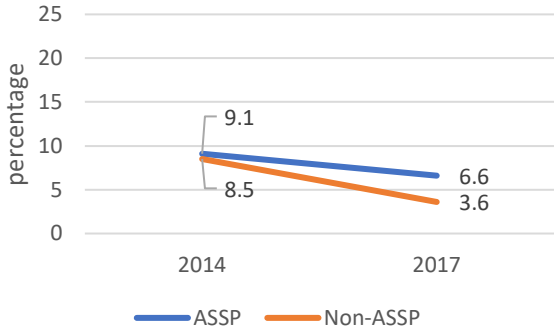
Topic		Stunting (Table 6.8)	Wasting (Table 6.16)
Absolute change in outcome			
Project impact on outcome		Increased	No impact
Sex	Female	Increased	No impact
	Male	Increased	Increased
Wealth quintile	Low; Low-middle	No impact	Increased
	Middle; High-middle; High	No impact	No impact
Sampling domain	Nord/Sud Ubangi	No impact	No impact
	Maniema/Tshopo	Increased	No impact
Consistency with related indicators		ASSP did not impact child feeding indicators overall.	ASSP did not impact child feeding indicators overall.
Consistency with other data sources (DHIS2 and DHS)		Consistent/unknown. Baseline point estimate aligns with 2013/14 DHS estimates. Unit of analysis in DHIS2 is screenings, not children, so the consistency with the evaluation results is unclear.	Mixed. Baseline point estimate aligns with 2013/14 DHS estimates with the exception of wasting in Maniema/Tshopo, which is likely an anomaly in the DHS data. Unit of analysis in DHIS2 is screenings, not children, so the consistency with the evaluation is unclear.
Relevant qualitative findings		Qualitative findings indicated that ASSP did not improve malnutrition but the possibility that ASSP caused stunting rates to increase was not explored in the interviews.	Qualitative findings indicated that ASSP did not improve malnutrition.

Table A3. Summary of impact evaluation results for child nutrition indicators, and an assessment of the consistency of the results with other indicators and other sources of data (con't)

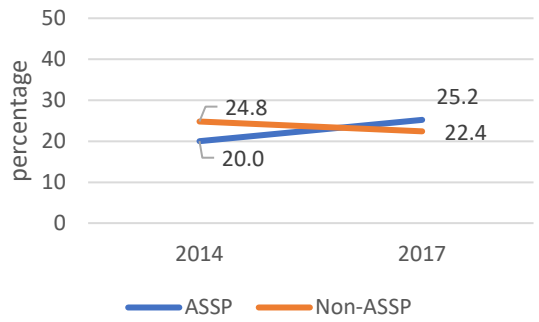
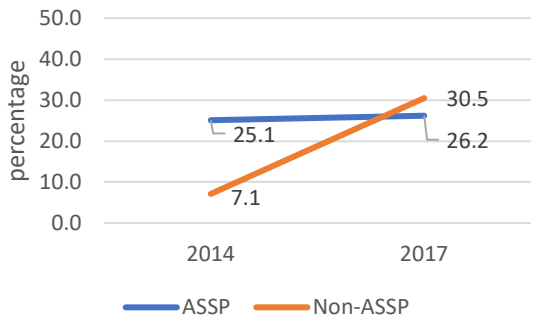
		Underweight (Table 6.24)	Minimum dietary diversity (Table 6.32)
Absolute change in outcome			
Project impact on outcome		No impact	No impact
Sex	Female	No impact	No impact
	Male	No impact	No impact
Wealth quintile	Low; Low-middle	No impact	No impact
	Middle; High-middle; High	No impact	No impact
Sampling domain	Nord/Sud Ubangi	No impact	No impact
	Maniema/Tshopo	Increased	No impact
Consistency with related indicators		ASSP did not impact child feeding indicators overall.	ASSP did not improve rates of malnutrition.
Consistency with other data sources (DHIS2 and DHS)		Consistent/unknown. Baseline point estimate aligns with 2013/14 DHS estimates. Unit of analysis in DHIS2 is screenings, not children, so the relationship with survey data is unclear.	Unknown. No comparable data on child feeding practices available.
Relevant qualitative findings		Qualitative findings indicated that ASSP did not improve malnutrition.	Qualitative findings indicated that home gardens fell short of their potential and that the approach required that caregivers of small children make changes to child feeding practices which would likely not be successful without support from a strong behavioral change framework based on formative research in the local context.

Table A3. Summary of impact evaluation results for child nutrition indicators, and an assessment of the consistency of the results with other indicators and other sources of data (con't)

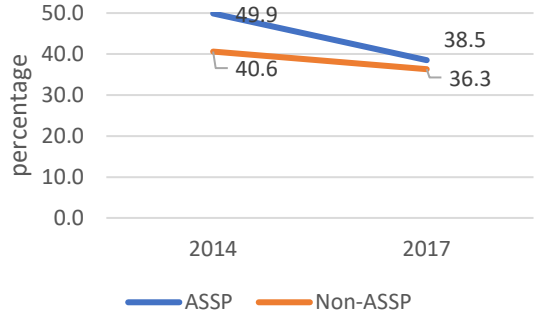
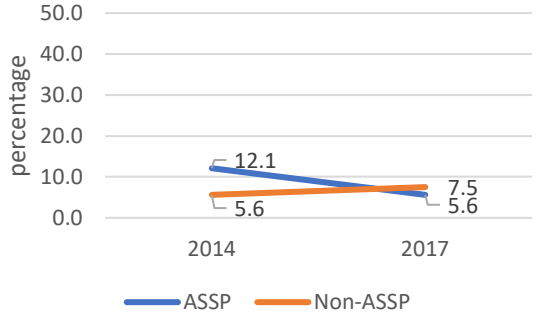
		Minimum meal frequency (Table 6.40)	Minimum acceptable diet (Table 6.48)
Absolute change in outcome			
Project impact on outcome		No impact	No impact
Sex	Female	No impact	No impact
	Male	No impact	No impact
Wealth quintile	Low; Low-middle	No impact	No impact
	Middle; High-middle; High	No impact	No impact
Sampling domain	Nord/Sud Ubangi	No impact	Increased
	Maniema/Tshopo	No impact	Decreased
Consistency with related indicators		ASSP did not improve rates of malnutrition.	ASSP did not improve rates of malnutrition.
Consistency with other data sources (DHIS2 and DHS)		Unknown. No comparable data on child feeding practices available.	
Relevant qualitative findings		Qualitative findings indicated that home gardens fell short of their potential and that the approach required that caregivers of small children make changes to child feeding practices which would likely not be successful without support from a strong behavioral change framework based on formative research in the local context.	

Table A4. Summary of impact evaluation results for a family planning indicator, and an assessment of the consistency of the results with other indicators and other sources of data

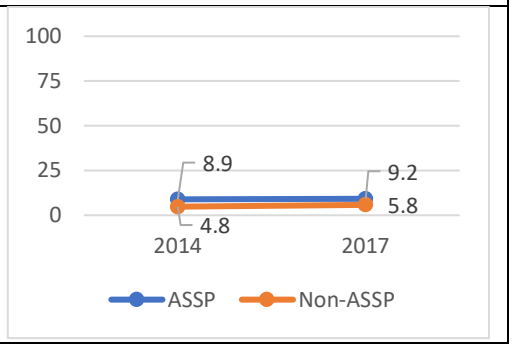
Topic		**Modern contraceptive use (Table 7.8)**
Absolute change in outcome		
Project impact on outcome		No impact
Wealth quintile	Low; Low-middle	No impact
	Middle; High-middle; High	No impact
Sampling domain	Nord/Sud Ubangi	Increased
	Maniema/Tshopo	Decreased
Consistency with related indicators		Consistent with drug supply, which was unchanged overall but improved in Nord Ubangi.
Consistency with other data sources (DHS)		Consistent
Consistency with qualitative findings		Qualitative data was not collected on this topic.

Table A5. Summary of impact evaluation results for service utilization indicators, and an assessment of the consistency of the results with other indicators and other sources of data

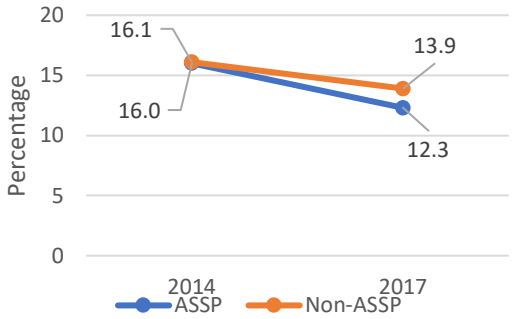
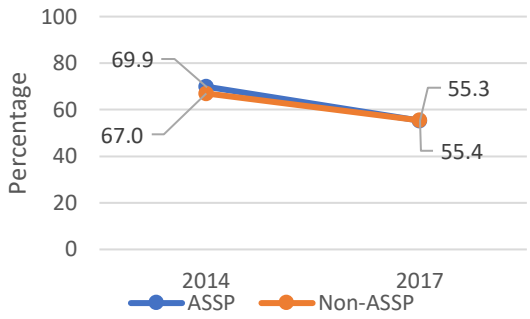
Topic		Illness or injury in past 4 weeks (Table 8.8)	Use of outpatient care (Table 8.16)
Absolute change in outcome			
Project impact on outcome		No impact	No impact
Sex	Female	No impact	No impact
	Male	No impact	No impact
Wealth quintile	Low; Low-middle	No impact	No impact
	Middle; High-middle; High	No impact	No impact
Sampling domain	Nord/Sud Ubangi	No impact	No impact
	Maniema/Tshopo	No impact	No impact
Consistency with related indicators		Not consistent with finding that ASSP was found to have a significant impact on childhood illnesses, but consistent with declines in childhood illnesses in ASSP areas.	Not consistent with findings that ASSP was found to have had a significant impact on financial protection and some measures of service quality.
Consistency with other data sources (DHIS2 and DHS)		Unknown: DHIS2 does not include population-based indicators of illness and injury.	Consistent: Utilization rates in the 2014 ASSP baseline household survey are consistent with utilization rates found in the 2014 DHS.
Relevant qualitative findings		Not applicable	Not applicable

Table A5. Summary of impact evaluation results for service utilization indicators, and an assessment of the consistency of the results with other indicators and other sources of data (con't)

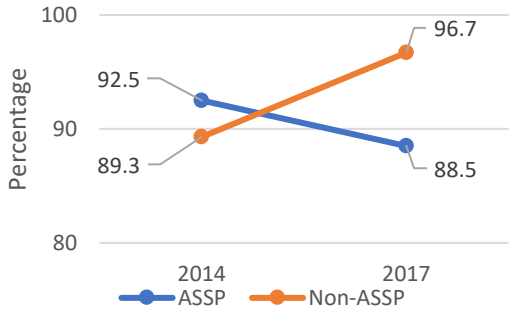
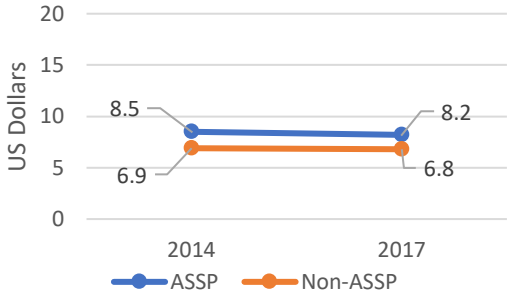
Topic		Paid anything for health services (Table 8.24)	Out of pocket expenditure for health services (Table 8.40)
Absolute change in outcome			
Project impact on outcome		Decreased	Increased
Sex	Female	No impact	Increased
	Male	No impact	Increased
Wealth quintile	Low; Low-middle	No impact	No impact
	Middle; High-middle; High	Decreased	Increased
Sampling domain	Nord/Sud Ubangi	Decreased	No impact
	Maniema/Tshopo	No impact	Increased
Consistency with related indicators		Inconsistent with finding that ASSP had an insignificant impact on maternal health care services.	
Consistency with other data sources (DHIS2 and DHS)		Unknown: DHIS2 and DHS do not include data on out-of-pocket health spending.	Unknown: DHIS2 and DHS do not include data on out-of-pocket health spending.
Relevant qualitative findings		Not applicable	Not applicable

Table A5. Summary of impact evaluation results for service utilization indicators, and an assessment of the consistency of the results with other indicators and other sources of data (con't)

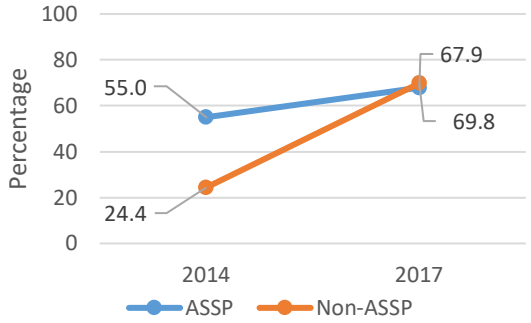
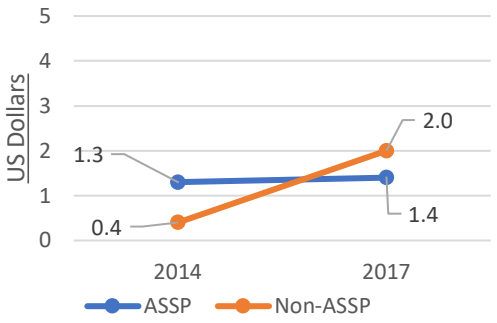
Topic		Paid anything for consultations (Table 8.32)	Out of pocket expenditure for consultation (Table 8.48)
Absolute change in outcome			
Project impact on outcome		Decreased	Decreased
Sex	Female	Decreased	No impact
	Male	Decreased	No impact
Wealth quintile	Low; Low-middle	No impact	No impact
	Middle; High-middle; High	Decreased	No impact
Sampling domain	Nord/Sud Ubangi	Decreased	Decreased
	Maniema/Tshopo	Decreased	No impact
Consistency with related indicators		Inconsistent with finding that ASSP had an insignificant impact on maternal health care services.	Inconsistent with finding that ASSP had an insignificant impact on maternal health care services.
Consistency with other data sources (DHIS2 and DHS)		Unknown: DHIS2 and DHS do not include data on out-of-pocket health spending.	Unknown: DHIS2 and DHS do not include data on out-of-pocket health spending.
Relevant qualitative findings		Not applicable	Not applicable

Table A6. Summary of impact evaluation results for service quality indicators, and an assessment of the consistency of the results with other indicators and other sources of data

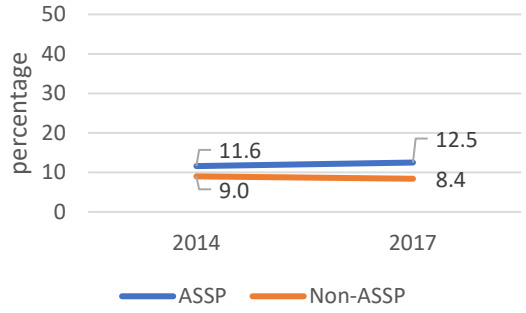
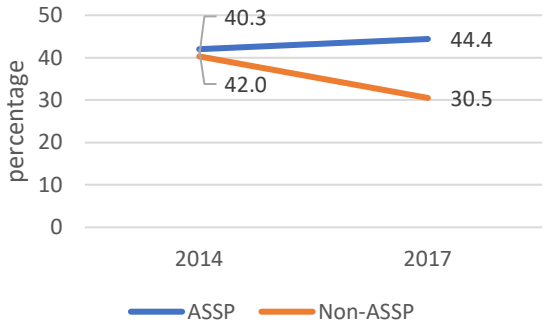
Topic		Equipment (Table 9.4)	Drugs (Table 9.8)
Absolute change in outcome			
Project impact on outcome		No impact	No impact
Sampling domain	Nord/Sud Ubangi	No impact	Increased
	Maniema/Tshopo	No impact	No impact
Consistency with related indicators		Not consistent. There was significant impact on patients' perceptions of availability of equipment for maternal health.	Consistent. There was also no significant impact on patients' perceptions of availability of drugs for maternal health, although absolute values increased. Modern contraceptive use increased significantly, which may reflect increases in availability of those commodities.
Consistency with other data sources (Operations research studies)		Not applicable.	Not applicable.
Relevant qualitative findings		The OR study found that the availability of equipment in health facilities was generally not improving in facilities that participated in the simplified community scorecard approach.	The OR study found that the availability of equipment in health facilities was generally not improving in facilities that participated in the simplified community scorecard approach, although there were some exceptions.

Table A6. Summary of impact evaluation results for service quality indicators, and an assessment of the consistency of the results with other indicators and other sources of data (con't)

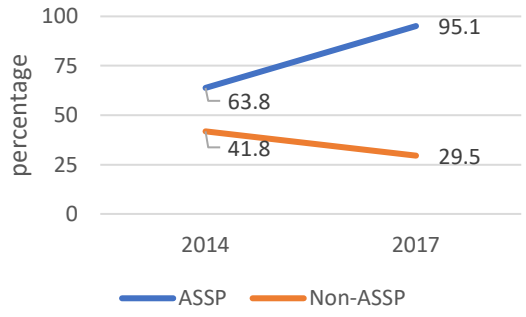
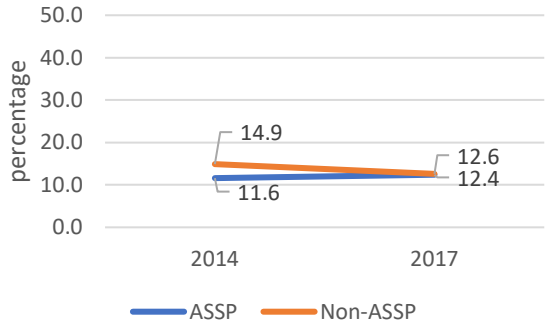
Topic		Preventive services (Table 9.12)	Curative services (Table 9.16)
Absolute change in outcome			
Project impact on outcome		Increased	No impact
Sampling domain	Nord/Sud Ubangi	Increased	No impact
	Maniema/Tshopo	No impact	No impact
Consistency with related indicators		Consistent with change in malaria diagnosis capability, but not with prevalence of curative services.	Not consistent with change in prevalence of preventive services.
Consistency with other data sources (Operations research studies)		Not applicable	Not applicable.
Relevant qualitative findings		Qualitative data on this topic was not collected.	Qualitative data on this topic was not collected.

Table A6. Summary of impact evaluation results for service quality indicators, and an assessment of the consistency of the results with other indicators and other sources of data (con't)

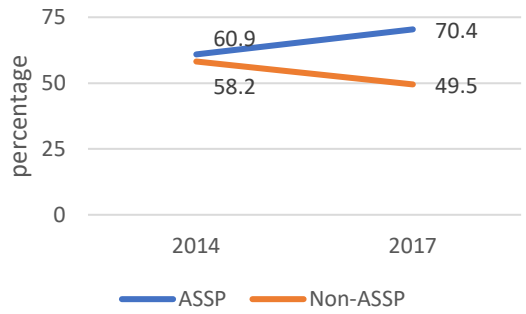
Topic		**Malaria diagnosis capability (Table 9.20)**
Absolute change in outcome		
Project impact on outcome		Increased
Sampling domain	Nord/Sud Ubangi	No impact
	Maniema/Tshopo	No impact
Consistency with related indicators		Inconsistent. Increases in malaria diagnosis capability did not correspond to malaria parasite prevalence in children under five.
Consistency with other data sources (Operations research studies)		Not applicable
Relevant qualitative findings		Qualitative data on this topic was not collected.

Table A6. Summary of impact evaluation results for service quality indicators, and an assessment of the consistency of the results with other indicators and other sources of data (con't)

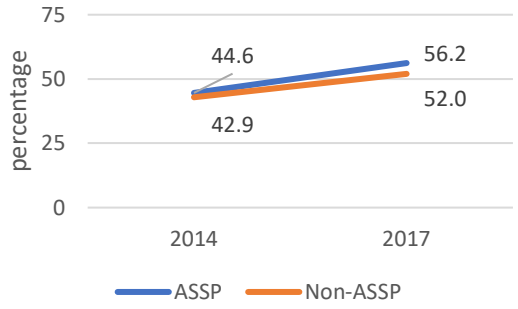
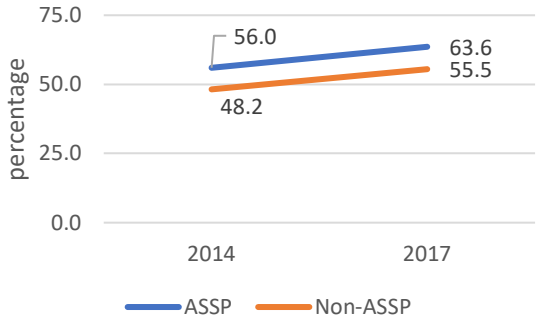
Topic		Informed about health services (Table 9.26)	Satisfaction with participation (Table 9.32)
Absolute change in outcome			
Project impact on outcome		No impact	No impact
Sex	Female	No impact	No impact
	Male	No impact	No impact
Sampling domain	Nord/Sud Ubangi	No impact	Decreased
	Maniema/Tshopo	No impact	Increased
Consistency with related indicators		Not applicable	Not applicable
Consistency with other data sources (Operations research studies)		Consistent with OR study that did not find an impact of the simplified community scorecard on this outcome.	Consistent with OR study that did not find an impact of the simplified community scorecard on this outcome.
Relevant qualitative findings		Qualitative data on this topic was not collected.	The OR study found that satisfaction with participation in health services improved in communities that participated in the simplified community scorecard approach.

Table A6. Summary of impact evaluation results for service quality indicators, and an assessment of the consistency of the results with other indicators and other sources of data (con't)

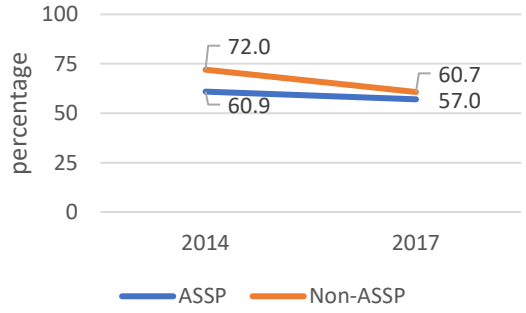
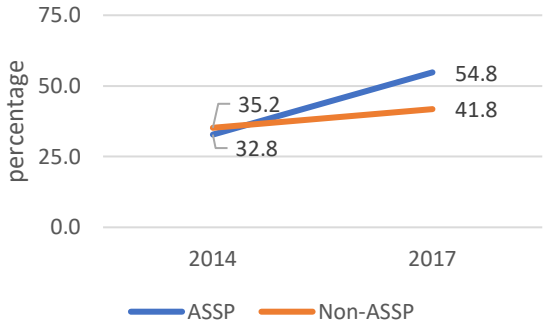
Topic		Overall job satisfaction (Table 9.36)	Up-to-date salary (Table 9.40)
Absolute change in outcome			
Project impact on outcome		No impact	No impact
Sampling domain	Nord/Sud Ubangi	Increased	No impact
	Maniema/Tshopo	No impact	No impact
Consistency with related indicators		Not consistent. Overall job satisfaction did not correspond with increase in timeliness of salaries.	Not consistent. Overall job satisfaction did not correspond with increase in timeliness of salaries.
Consistency with other data sources (Operations research studies)		Not applicable.	Not applicable.
Relevant qualitative findings		The OR study on health workers' motivation found that satisfaction decreased after the project removed performance-based financing payments.	Qualitative data on this topic was not collected.

Table A7. Summary of impact evaluation results for environmental health indicators, and an assessment of the consistency of the results with other indicators and other sources of data

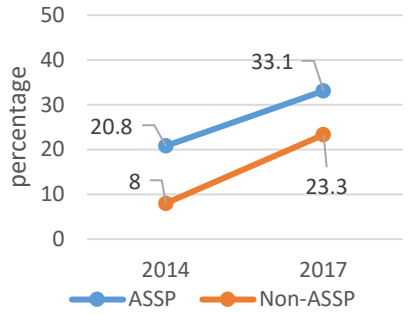
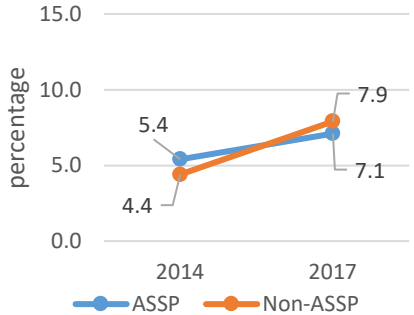
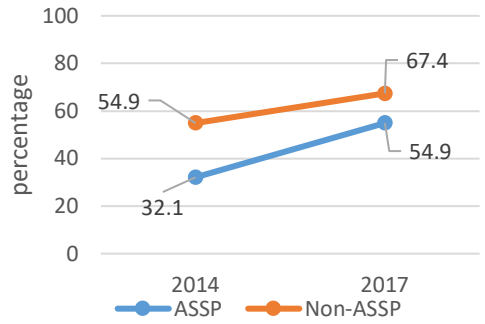
		Access to improved water source (Table 10.6)	Access to improved sanitation facility (Table 10.12)
Absolute change in outcome			
Project impact on outcome		Increased	Increased
Sampling domain	Nord/Sud Ubangi	No impact	Increased
	Maniema/Tshopo	Increased	Increased
Wealth quintile	Low; Low-middle	Increased	No impact
	Middle; High-middle; High	Increased	Increased
Consistency with related indicators		Consistent. ASSP increased use of improved water sources.	Consistent. ASSP had a positive impact on use of improved sanitation facilities.
Consistency with other data sources		Not applicable	Not applicable.
Consistency with qualitative findings		Qualitative data on this topic was not collected.	Qualitative data on this topic was not collected.

Table A7. Summary of impact evaluation results for environmental health indicators, and an assessment of the consistency of the results with other indicators and other sources of data

		Reported handwashing after using toilet (Table 10.18)
Absolute change in outcome		
Project impact on outcome		No Impact
Sampling domain	Nord/Sud Ubangi	No impact
	Maniema/Tshopo	No impact
Wealth quintile	Low; Low-middle	No impact
	Middle; High-middle; High	No impact
Consistency with related indicators		Not applicable.
Consistency with other data sources		Not applicable.
Consistency with qualitative findings		Qualitative data on this topic was not collected.