

Every Child Counts – The Gambia Quarterly Progress Report

April – June 2021



1. General Information

Organisation name	Insamlingsstiftelsen Shifo Foundation
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Project title	Every Child Counts – The Gambia
Reporting period	2021-04-01 to 2021-06-30

2. Abbreviation list

AAITG - ActionAid International The Gambia

AAUK - ActionAid United Kingdom

CHN (VHS) - Community Health Nurse (Village Health Service)

CRR - Central River Region

CQI - Continuous Quality Improvement

CSR - Corporate Social Responsibility

DHIS2 – District Health Information Software 2; a health management data platform

DHS - Demographic and Health Surveys

DPI (DOP) - Directorate of Planning & Information

DQR - Data Quality Review

EOI - Expression of Interest

EPI – Expanded Programme for Immunization

GF - GlobalFund

HF - Health Facility

HMIS – Health Management Information System

HSDP - Health Service Delivery Points

HSS - Health System Strengthening

HW - Health Worker

ICT - Information, Communication and Technology

ISP - Internet Service Provider

IWC - Infant Welfare Card

LRR - Lower River Region

MCS - MyChild Server

MoH – Ministry of Health (The Gambia)

MRC – Medical Research Council

M&E - Monitoring and Evaluation

NaNA - National Nutrition Agency

NBER - North Bank East Region

NBWR - North Bank West Region

PHO - Public Health Officer

PURA - Public Utilities Regulatory Authority

RBF - Results Based Financing

RHD - Regional Health Directorate

ROO - Regional Operations Officers

RPPHO - Regional Principal Public Health Officer

SAP - SmartActions platform

SMT - Stock Management Tool

SOP – Standard Operating Procedure

SPT – Smart Paper Technology

TOR - Terms of Reference

URR - Upper River Region

VPD - Vaccine-preventable disease

VVS - Vaccine Visibility System

WR - Western Region

3. Project Implementation

The goal of the project is to adjust the MyChild system and stock management solution to the national requirements of The Gambia and pilot and scale up the solution to ensure that every child is registered and is followed up to receive life-saving vaccines and preventive health services they are entitled to, and to eliminate under-stocking and over-stocking of vaccines and supplies at the health centres.

We believe that it is possible to increase rates of fully immunised children and achieve a day when no child dies or suffers from preventable diseases by implementing data collection and data use innovations. Therefore the solution should meet the following criteria:

1. Can be used in 100% of health service delivery points despite infrastructure limitations
2. 100% of work processes to operate the solution can be transferred to existing health system structure
3. Reduce the administration time of health workers by a minimum of 60%
4. Digitise individual health records and produce data that is above 99% accurate, timely, consistent and complete
5. Automatically digitise vaccine and supply stock books and accurately forecast all supply needs of service delivery points;
6. Improve data use culture to a level where above 95% of service delivery points drive continuous improvement actions based on quality data and where governments and key actors direct resources to reach targets of quality of care indicators

The project objectives are:

- To reduce administrative workload at facility level and strengthen data quality at the beneficiary level with the Smart Paper Technology Solution
- To continuously improve immunisation timeliness and rate of fully immunised children with data use based interventions
- To acquire and share evidence with key people to support uptake of the Smart Paper Technology Solution
- To accomplish project activities and have progress and financial reports approved

4. Summary of key progress and results

Objective 1: Smart Paper Technology Solution has reduced administrative workload at facility level and data quality has been strengthened at all levels

- MyChild has been implemented nationally at all EPI service-providing HSDPs from 01st January 2021. Staff of 419 public and privately owned HSDPs (98 static and 321 outreach sites) were trained on SPT by the end of 2020. With the beginning of 2021 the number of HSDPs was updated resulting in 80 static HSDPs (public and private) and 339 outreach sites using SPT.

	WR1	WR2	CRR	URR	NBE	NBW	LRR	SUM
static HSDPs (#)	29	10	9	10	7	7	8	80
outreach sites (#)	14	51	82	72	33	42	43	339

- Between the 29th April 2021 and 06th May 2021, the 5 regions that started to use SPT from January 2021 were supplied with noticeboards to plot their KPIs. 41 health facilities were each supplied with one board and 5 RHDs were supplied with 2 boards each to accommodate the ROO and RPPHO. 7 additional notice boards were stored at the AAITG office to serve as back-up of which 2 were eventually provided to Tujereng (07.04.2020) and Pirang (04.08.2020) that were newly established HFs in WR2.
- After 6 months of national MyChild implementation the number of registered children has increased to **305.720**. 26.6 % (81.338 since January 2021) of these children have been registered in the 5 regions that newly implemented SPT. **173.372** of all children that were registered have been followed up with SMS, whereby a total of **423.461** SMS reminders were sent. As a result there are evidently **88.432** children in The Gambia that are fully vaccinated in accordance with the national program.

	WR1	WR2	CRR	URR	NBE	NBW	LRR	NATIONAL
total registrations*	154.003	70.379	23.597	23.974	11.754	13.133	8.880	305.720
sms sent*	278.529	104.595	11.310	11.711	6.849	5.560	4.907	423.461
children followed up with sms*	104.568	42.093	7.595	7.434	4.377	4.269	3.036	173.372
fully vaccinated children*	53.070	22.475	3.711	3.902	1.953	1.941	1.380	88.432
fully vaccinated children < 1*	45.091	18.740	2.834	2.964	1.582	1.694	1.107	74.012
total visits (Apr-Jun)	55071	30824	23265	23907	11.068	12.324	8.132	164.591

* since beginning of the project

MOBILE APP "MY SHIFO APP"

On 31st May 2021 the test version of the new MobileApp, which is going to replace the existing one, was published. The new App will not only be available for android users but also for iOS users. An important addition includes the need to sign the confidentiality agreement before login in for the first time. This process has previously been handled manually and has thus been lengthy, difficult to keep track and tedious to handle (scan and save pdfs and keep storage of the physical documents). This new function further allows users to enter the system not only through the dashboard (computer, laptop), but the MobileApp, which naturally is more easy to do and increases the proportion of HWs making use of the system and the extend of MyChild usage since mobile phones are better accessible based on the close location to their owners' bodies.

HWs will further indicate by themselves with which health facility they are affiliated during the registration process. Hence, it is their responsibility and decision. Upon completion of the registration, HWs are manually provided with a password to actually login and use the app. This process allows to verify the provided information before access is granted. Once transferred to MOH could this be a mechanisms by which RHDs or HF supervisors (desk clerks) can save time (they don't have to enter all staff information as each HW is able to do that individually), but maintain control by verifying the information. The new MyShifo App will further visualise KPI graphs, which allows HWs to check on KPI performance for their health facility any time and possibly make the sending of SMS KPIs redundant in the long run. The availability of digital KPIs makes it also easier to update and keep track of values in cases that SPT forms were submitted late (after SMS KPIs have already been sent).

As of March 2021 there are 250 HWs affiliated with 71 different HFs nationally (in all 7 regions) that are actively using the published version of MyShifo App. 7 HWs had their accounts previously deactivated because they are iOS users (once the new app has passed the test stage, they can be reactivated). The number of active users is increasing and will be updated with the following quarterly report.

Region	WR1	WR2	CRR	URR	NBE	NBW	LRR	SUM
registered users (#)	56	39	37	46	24	29	26	257
active users (#)	56	39	35	44	24	28	24	250
HFs covered (#)	20	10	9	10	7	7	8	71

There has been no progress in the engagements with PURA and GSM companies to provide free mobile data to HW to use MyShifo App and other web-services provided through MOH during this quarter.

Objective 2: → Continuous improvements in immunisation timeliness and rate of fully immunised children is being driven by data use based interventions

The [D4A workshop](#) was held between 14th June to 06th July 2021. As it was mentioned in the preceding report has the D4A workshop been implemented as an extension to the CQI and to bridge the time required to build SAP. Purpose of the D4A workshop is to institutionalise the culture of data use. The provided meeting notes give more detailed information, but during the D4A workshop HWs have been educated on KPIs and how they are calculated and what the expected targets for each indicator are. Providing HWs with this information and visualising their data shall empower them to take action on how to improve below-target indicators. This D4A workshop has been the first of its kind and covered data generated between January to April 2021. The D4A workshops are to be organised every quarter and will so far be continued on-site. Important documents that are generated and are accessible to HF staff and their supervisors in "view only" option are the "health facility issue identifier", an excel file for all HFs and regions and the "planned action" document, where actions that HFs decided/agreed to carry out are recorded.

It is planned to integrate the D4A workshop in the supportive supervision and provide fuel as conditional incentive. However, more far reaching plans with SmartActions platform still seek to limit the number of physical visits necessary by providing regions with all evidence necessary to remotely evaluate well- and underperforming HFs. In this way, only underperforming HFs require a follow-up (which can be done via the free CUG lines) and/or if necessary targeted physical visits can be organised to the respective HFs, where fuel can be provided for. Importantly, it will require a considerable amount of time to capture all agenda items of supportive supervision under SAP.

One of the building blocks in the D4A workshops comprises encouragement of regional officers to make use of the dashboard more often and regularly. So far they are very dependent on support from AAITG in reminding them to log in and e.g. check sessions. The goal is to have them pro-actively and autonomously handle these kind of activities since the process has already been transferred to them.

The D4A workshop provided also a perfect opportunity for general discussions with delegates and HWs from all levels (central, regional, health facility) and it was found that there is a high fluctuation of HWs as they are moving in and out of regions/health facilities and new graduates from university frequently enter into the health system. As a result there are only very few HWs in different regions for whom it is necessary but difficult to organise a training. Hence, the idea to organise bi-monthly zoom meetings to generally train on SPT arose. More far-reaching ideas circle around the inclusion of SPT training in the college curriculum. A third option is subject to testing in Uganda, which is a video tutorial that has recently been developed. It will be included in the MyShifo App, so that HWs can easily access it at any time.

Objective 3: → Evidence to support uptake has been acquired and shared with key people

- A meeting was held on 26th May 2021 to update EPI, ICT and HMIS about the project's progress and to discuss challenges and plans. A detailed presentation of the planned D4A workshop was provided to receive feedback and approval to schedule a date: [Progress Update Meeting 26th May 2021](#)
- On 28th May 2021 a follow-up meeting to the progress update meeting from 26th May 2021 was held to take up the discussion regarding the defaulter list that was brought up and make a decision regarding its definition

SPT FOR COVID VACCINATIONS

There haven't been any engagements with MOH in relation to the COVID vaccinations. The initially planned meeting with the DPI (ref. quarterly report Jan-Mar 2021) could not be held and is postponed indefinitely. Moreover, MOH has received a new batch of vaccines with more than 100.000 doses without reaching out to Shifo. Hence, it can be stated in good believe that Shifo will not support COVID vaccinations in The Gambia.

DISTRIBUTION OF SPT FORMS

The distribution process is currently in the process of transfer to EPI through the vaccine supply chain. Engagements have led to the understanding that distribution of SPT forms will be embedded in the existing infrastructure which provides vaccines on a quarterly basis to the regions. It remains to transfer the whole process from the request of forms, to the printing and finally the supply to facilities. It is currently foreseen to provide sufficient forms to regions on annual basis (it would be possible to timely adapt the forms to changes), though it might be advisable to have a half-yearly frequency of supply once the benefits to use the one or the other option have been evaluated. Based on the vaccine supply, a minimum frequency of a quarter is possible without spending additional resources.

COLLABORATION WITH ICT UNIT

In line with contract deliverable No.4 (Capability to independently manage data storage) agreed in the contract between Shifo and ICT for the transfer of processes a confirmation letter on the server decision and the to be implementing ICT team made was signed by the DPI on 17th May 2021 ([Confirmation letter for server decision and nomination of 3 ICT staff](#)). Since then Baboucarr Ceesay, Musa Sosu and Modue Nije (who is also EPI focal

person), who were nominated to constitute the "server migration team", have worked collaboratively with Shifo IT team.

Following reception of the confirmation letter a meeting between Shifo IT and the ICT "server migration team" was organised on 21st May 2021 to discuss the capacity building plan and associated processes including the payment responsibility, the strategy of transfer and steps thereof.

Shifo IT procured a Hetzner server and prepared it for provision to GMB ICT and upon provision of login credentials to the server migration team they were able to successfully log into the Hetzner server management console on 24th May 2021. In accordance to the capacity building plan, the server migration team independently prepared for the proxmox installation by reading the provided manuals and independently started to familiarise themselves with the processes required to be carried out. An informed decision by the server migration team was made to use the KVM method to deploy proxmox. However, proxmox installation was postponed due to poor internet connectivity. A meeting on 02nd June 2021 eventually allowed successful installation of proxmox and completion of additional tasks (server booted into rescue mode, installation of debian buster 109, configuration of disk partitions, sever hostname setting). The next step in the process would constitute the transfer of the Gambian SPT system to the new server to be maintained by ICT with access authorisation given to the 3 ICT staff that comprise the server migration team. To this end, Shifo IT separated and deployed the infrastructure platform and server components. During the process some serious program bugs of the separated MCS-server appeared and required investment of additional work and testing. As soon as these bugs are fixed Shifo IT will provide access instructions to the Gambian team. It should be noted that during the meeting on 21st May 2021 it was also informed and agreed to create a back-up for the Gambian MCS-server to prepare for any issues that may compromise access or availability of the data during the migration and learning phase.

EXPANSION & NEW PROJECT OPPORTUNITIES

- In the preceding report it was informed about a meeting on 23rd April 2021 with RBF and NaNA to demonstrate the developed MVP ([23rd April 2021 - Meeting with RBF & NaNA](#)). By the end of this quarter the "RBF data validation" report is published on the dashboard and RBF staff has received their credentials to login and make use of it. An orientation workshop will be provided to RBF and NaNA during the following quarter. Afterwards further engagements to expand SPT to cover the whole nutrition area will be facilitated.
- Following the proposal submission to the Trinity Challenge on 14th April 2021 (ref. quarterly report Jan-Mar 2021) a choice was made where SPT was not selected. However the chosen team reached out to Shifo and ActionAid to propose a collaboration, which was rejected since the competition had resulted in a negative outcome.

Objective 4: → Project activities are accomplished and progress and financial reports are approved

- A meeting with GAVI was held on 14th June 2021 to update on the most recent developments in relation to the national scale-up and to discuss the request to extend the project end and to postpone the final evaluation. It was agreed to extend the project until December 2022 to allow for qualitative and sustainable transfer of processes to MOH and to use remaining funds efficiently for that purpose. It was further agreed to postpone the final evaluation in order to evaluate MyChild and its accessory products on a national scale in The Gambia. In summary, all supporting partners, IKARE, AfJochnick and GAVI support the extension as they see the benefit for the project outcome and thus signed (GAVI will sign) respective amendments. Following the meeting, presentation slides of SmartActions platform were shared with Gavi and it was offered a demonstration once other engagements allow to make time for it. Additional action points that resulted from that meeting and remain to be completed are therefore:
 - for Shifo to share the TOR for the final evaluation for review and feedback
 - for GAVI to draft the amendment to extend the project until December 2022
- All project milestones have been achieved and remaining project activities as outlined in the workplan are continuous. While all continuous activities are in progress, is there a need and will be a focus in the current

project year to build awareness of the project's success, especially the national scale-up during the preceding project year, amongst the public through the use of different media.

Objective 1: Smart Paper Technology Solution has reduced administrative workload at facility level and data quality has been strengthened at all levels

Activity/process indicators

Indicator Name	Target for the year	Cumulative progress
	<i>April 21-March 22</i>	
AI 1.1 - Proportion of scanning centres established and operational	100 %	100 %
AI 1.2 - Proportion of health workers and health management team members trained on data collection and data quality assurance processes with MyChild Solution	80 %	100 %

Comments

AI 1.1 - AI 1.1 - All eight scanning stations planned to be deployed have successfully been set up by the end of December 2020 in line with the national scale-up reaching thus 100% of the target for this indicator.

AI 1.2 - Even though 100% have already been reached for this indicator, there are continuous training activities on different topics carried out throughout the project. These can include general SPT training for new staff, specialised FC training, refresher training for Master trainers, training on accessory products (SAP, MyShifo app..) etc. During the current quarter 35 RHD staff and 161 HWs have specifically been trained on data use during the D4A workshop with the goal to drive continuous quality improvement interventions that will lead to improvement of KPIs. Each region was trained on-site in a 2-day workshop with the exception of WR1 receiving 4 days of training.

Intermediate results/output indicators

Indicator Name	Target for the year	Cumulative progress								
	April 21-March 22									
RI 1.1 - Proportion of fixed and outreach health service delivery points (HSDP) where Smart Paper Forms are used	80 %	100 %								
RI 1.2 - Incidence of data recording errors		national	WR1	WR2	CRR	URR	NBWR	NBER	LRR	
1. Multiple BCG vaccinations		0.15%	0.14%	0.15%	0.28%	0.18%	0.09%	0.05%	0.04%	
2. Two doses of same vaccine	1 %	0.2%	0.3%	0.3%	0.3%	0.3%	0.2%	0.2%	0.3%	
3. Incorrect IDs		2.2%	2.7%	2.5%	1.8%	1.6%	1.8%	1.8%	1.8%	
RI 1.3 - Proportion of children with lost Home Based Records for whom information could not be retrieved from electronic register	28 %	22.3 %								

Comments

RI 1.1 - SPT was scaled up nationally by the end of December 2020 to cover all EPI service-providing HSDPs across the country, including private and public HFs. SPT has also been implemented at MRCs (though they are not constituent of the indicator). The number of HSDPs and respective outreaches highly varies over time due to different reasons with the consequence that the actual denominator may have changed. Local partner AAITG continuously receives updates of the situation and arranges for capacity building if required. It can thus be assumed that 100% can be sustained.

RI 1.2 - Data recording errors measure the proportion of data entered incorrectly by HWs. This rate reflects inconsistencies in the data that are most likely due to a mistake made while filling in SPT forms rather than a medical error made during the service delivery.

1. Multiple BCG vaccination: Percentage of cases where BCG was recorded twice for the same child during two different visits on SPT form.
2. Two doses of same vaccine: Percentage of cases where the same vaccine from different groups (e.g. OPV1 and OPV2) is marked for the same child during the same visit on SPT form.
3. Incorrect IDs: Percentage of incorrectly written IDs automatically detected on SPT forms by data recognition software

As it was described in the annual report for 2020/2021 might there still be some bias regarding the 5 regions that only implemented SPT in January 2021. All 7 regions show values of below 1% (annual target) for "multiple BCG vaccinations" and "two doses of same vaccine" with some variation between regions. The proportion of incorrect IDs reported is higher in WR1 (2.7%) and WR2 (2.5%) compared to the other regions, which are all below 2%. A possible explanation has also already been given in the annual 2020/2021 report.

RI 1.3 - During Apr - Jun 2021, a total of **164.591** immunisation visits were recorded in all the facilities using SPT in 7 regions. There were **94** documented cases of visits without Infant Welfare Card (~0,06% of all visits). Information was retrieved from electronic immunisation register for **71** children who had been previously registered. Information could not be retrieved for **21** children. It is possible that these children had not been registered yet or that they may have previously attended another facility, probably in one of the 5 regions that just had started to use SPT from January 2021. In comparison to the previous quarter the number of reported cases of visits without Infant Welfare slightly increased from 82 to 94 cases. When looking at the ID retrieval success rate (86.6% last quarter vs. 78.7% this quarter) from the electronic immunisation register a decrease is noticed. The majority of requests came from private health facilities (53.2 %). It should be noted though that there are 20 private HFs in WR1. There haven't been many requests made by the HFs in the 5 new regions as it is expected since they have been well-trained to use MyShifo App from the start. Private health facilities did not have access to MyShifo App yet, since there was an initial focus on the public HFs. As a consequence they are used to send their requests to the whatsapp group.

Outcome indicators

Indicator Name	Target for the year <i>April 21-March 22</i>	Cumulative progress
OI 1.1 - Proportion of system generated electronic reports available to key actors on a timely basis (data timeliness)	99 %	100 %

Comments

OI 1.1 - HMIS reports and stock requisition note for immunisation and supplementation for all 80 public and privately owned fixed HSDPs from all 7 regions (WR1, WR2, CRR, URR, NBWR, NBER, LRR) were sent to stakeholders on agreed due date for April, May and June 2021.

However, reports for all 3 months have been incomplete due to various reasons. For example, in June export confirmation could not be completed on time due to some technical issues including the delayed supply of data bundles from the ISPs to the regions with a 3-day power disruption due to a windstorm.

Indicator Name	Target for the year	Cumulative progress
	April 21-March 22	
OI 1.2. Proportion of fixed sessions performed that are captured in the electronic reports (fixed session data completeness)	99 %	99.7 %
OI 1.3. Proportion of outreach sessions performed that are captured in the electronic reports (outreach session data completeness)	99 %	100 %
OI 1.4 - Proportion of child immunization records that accurately reflect the right child and the right vaccines received in Electronic Immunization Register (data accuracy)	99 %	-
OI 1.5 - Proportion of immunization records collected on Smart Paper Forms digitized correctly (internal data consistency)	99 %	99.9%
OI 1.6 - Proportion of health facilities reporting data without outliers (internal data consistency)	99 %	92 %
OI 1.7 - Proportion of work processes at health center and scanning centre integrated/transferred into existing health system structure	100 %	100 %
OI 1.8 - Proportion of work processes of data quality assurance centre integrated/transferred into existing health system structure	100 %	100 %
OI 1.9 - Reduction of time spent on data collection, aggregation and reporting by front-line health workers	30 %	-

Comments

OI 1.2 and OI 1.3 - During the period from Apr to Jun 2021 there were a total of 1058 fixed and 1113 outreach sessions that were planned held. Missing sessions are investigated at the end of each month and counted if no explanation can be found. Thus, sessions that were canceled or postponed due to various reasons are not counted as missing. Sessions that were considered missing, because of delayed form submission or processing are re-assigned as not-missing when they could be added retrospectively.

The follow-up on missed sessions could not be completed on time for the current quarter, so that several sessions are still under investigation. So far it is known of 3 static sessions in WR1 that have been proven to be in fact missing, 8 static and 15 outreach sessions are under investigation. The investigation revealed that many sessions, which are to a majority outreach sessions, in the new regions (i.e. URR, NBW, NBE, CRR and LRR) were postponed and held on other dates than those that were planned. It might be worthwhile to closer monitor if this is a general habit and possibly plan an intervention. Unreliable schedules may compromise provision of EPI service provision as it negatively impacts clients if not well informed beforehand, which in turn decreases compliance with the vaccination schedule and eventually KPI performance. It was further noted that Polyclinic in WR1 was at times closed and cancelled some session due to COVID-19 vaccine provision.

OI 1.4 – This indicator was investigated during the external evaluation published in September 2019 ([External Evaluation 2019](#)) and reported with 99% (exceeding the target of 98%) in the annual report for 2019-2020. This indicator will be part of the final evaluation, where it is expected to again reach 99%, but on a national scale that would include all 7 regions in the country.

OI 1.5 – This evaluation investigates internal consistency between scanned forms and digitised data. A visual comparison of two data sources was done using the data recognition software. The immunisation data, captured in SPT Health records forms, in a random sample of scanned Smart Paper Forms covering 4059 visits equally distributed across all 7 regions within the specified time period (Apr-Jun 2021) was compared to digitised immunisation data. Vaccines recorded were consistent between scanned forms and electronic data in 4054 of 4059 visits.

OI 1.6 – The WHO Data Quality Review Framework recommends the modified z-score method for detecting outliers in immunisation data. According to the DQR, a health facility with two or more z-scores with an absolute value over 3.5 are considered as reporting data with outliers. The modified z-scores for monthly number of Penta 3 antigens administered in all facilities was analysed.

All health facilities (100%) in CRR, URR and NBW report data without outliers and also more than 90% of HFs in WR1 and WR2 demonstrate an internal data consistency. In LRR and specifically in NBE the internal data consistency is low (75% and 57.1%, respectively). (Data for individual regions are not shown in the report) An explanation could be that the number of DPT3 counts on a weekly basis for HFs or a particular HF in NBE (4 of 7 HFs) and LRR (6 of 8 HFs) is so low that statistics are not yet well adjusted. With more data outliers are more reliable identified. However, these assumptions have not further been followed to be confirmed and might not be applicable.

OI 1.7; 1.8 – Achievement of final milestone 10 by the end of December 2020 has marked completion of the [Gradual transition of work processes into existing health system structure](#) in all 7 regions at health facility and regional level, i.e. scanning centers and quality assurance centers. With regard to implementation of new tools and indicators and scale-up to all the regions, the linked document would still require to be revised and if agreed to possibly updated to adapt to the new situation and context. Competing priorities have further delayed to draft a respective document.

Objective 2: Continuous improvements in immunisation timeliness and rate of fully immunised children is being driven by data use based interventions

Activity/process indicators

Indicator Name	Target for the year <i>April 21-March 22</i>	Cumulative progress
AI 2.1 - Number of health workers and health management team members trained on Data for Action indicators	125	98
AI 2.2 Number of relevant stakeholders receiving Data for Action indicators on a monthly basis	125	80
AI 2.3 Accuracy of demand forecast for vaccines and supplies	99 %	95 %

Comments

AI 2.1; AI 2.2 – Data for Action indicators covering all 16 KPIs (data quality, access, quality of care and process related indicators) have been sent from March 2019 to all facilities using the solution. Both indicators are reported as number of facilities where health workers have been trained on Data for Action indicators. With the end of the preceding project year national scale-up was completed reaching 98 HSDPs that were trained on data for action indicators (AI 2.1). Following the capacity building credentials were created for the HFs and HW's phone numbers were collected to receive Data for Action indicators on a monthly basis. SMS KPIs have been sent nationally since February 2021 (data from January 2021).

The number of SMS KPI recipients is lower than the number of trained staff and both values are below the set target for the project year. Those numbers actually reflect on the rapidly changing number of facilities within the country (98 HFs from end January 2020 to 80 HFs by the end of March 2021 and 125 HFs by the time the target was defined in the performance framework years ago). There might be a need to update the set targets accordingly.

AI 2.3 - In order to report on this indicator an algorithm was built and evaluated in an analysis, that was shared within the Q4 2019 quarterly report ([Analysis Q4 2019: Stock forecast](#)). The second analysis will be carried out before the end of the current project year for the new target defined in the performance framework.

Intermediate results/output indicators

Indicator Name	Target for the year April 21- March 22	Cumulative progress							
		national	WR1	WR2	CRR	URR	NBWR	NBER	LRR
RI 2.1 - Proportion of below-target key performance indicators for which improvement action has been taken (self-reported)	80 %	14.5%	20.3%	8.7%	6.5%	2.6%	1.7%	4.3%	4.4%
RI 2.2 - Proportion of key performance indicators that show progress towards the target or have met the target	90 %	76.6%	81.2%	68.8%	68.8%	75.0%	75.0%	81.2%	56.2%
RI 2.3 - Penta wastage rate	10 %	-4.6%	-1.3%	-3.0%	0.4%	-8.4%	-16.5%	-22.5%	7.4%
RI 2.4 - PCV wastage rate	5 %	-13.4%	-7.9%	-14.7%	-6.5%	-32.7%	-18.5%	-22.1%	-17.2%
RI 2.5 - Rota wastage rate	5 %	-5.3%	-0.8%	-4.5%	-5.9%	-1.5%	-17.6%	-2.6%	32.2%
RI 2.6 - Proportion of sessions without stockout (vaccine availability)	99 %	Reported							
		97.2%	96 %	96.5%	95.3%	99.4%	98.7%	96.8%	99.7%
		Predicted							
		93.7%	96.1%	95.1%	85.6%	87 %	99.6%	93.7%	99.3%

Comments

RI 2.1 - RI 2.2 – The new target of 80% for RI 2.1 for the project year has not been reached during the quarter. Since the D4A workshop was carried out during the quarter HFs reported improvement actions in the provided "planned action" document and would thus presumably refrain from repeating documentation of these actions in the D4A section of the monthly return. One can appreciate that reporting in WR1 (and WR2) is proportionally

higher than in the remaining 5 regions, who are possibly not yet equally familiar with the process. In addition, WR1 comprises 29 HFs, which can all contribute by reporting in their D4A section, whilst all other regions have no more than 10 HFs that are able to provide information that would reflect in the indicator. However, calculation of the indicator is taking this into account, thus showing real differences of performance between regions. The national value gives a rated average of the performance for all regions taking the size of each region into account.

Also the target of 90% for RI 2.2 has not yet met, but all regions demonstrate more than 50% of KPIs are showing progress towards the target or have met the target. Some regions are even close to reaching 90% resulting overall in a national value of 76.6%.

RI 2.3-2.5 - The problem of reporting negative and incorrect wastages persists further in all regions. Reasons and possible solutions have excessively discussed in preceding reports (e.g. Quarterly report Jan-Mar 2021, Annual report 2020-2021). During the current quarter no actions have been taken to work on the issue. It remains to be evaluated with regard to project priorities and resources if focus can be put on development of further interventions to support the correct reporting of wastages. Initial activities concerning vaccine stock management that also included indicators AI 2.3 and RI 2.6 have been carried out (some mentioned in previous reports), but it remains to prepare further analysis and proper presentation to MOH to determine acceptance and adoption of new methods and development of additional supporting tools and functionalities.

RI 2.6 - This indicator was newly implemented during Q2 in accordance with the results and performance framework. In contrast to the traditional vaccine stock planning based on annual targets, is this indicator based on session data generated through MyChild. The analysis was shared as annex in the progress report for Q2 ([Analysis Q2 2020: Stockout](#)). Vaccine availability for the current quarter is close to meet the target (predicted: 93.7%; reported: 97.2%). As already described in the annual report 2020/2021 and visible here are the predicted and reported values very close and demonstrate that the prediction method is reliable and that health workers are compliant with checking the boxes next to the vaccine which is out of stock when filling "MyChild Health Records" forms and that they tick the vaccines that are actually provided to a child. Comparison of the values provided for CRR and URR (prediction vs. reporting) demonstrate that the project which administers PCV according to a different schedule is ongoing (ref. annual report 2020/2021)

Outcome indicators

Indicator Name	Target for the year	Cumulative progress							
		national	WR1	WR2	CRR	URR	NBWR	NBER	LRR
OI 2.1 - Drop out rates: BCG - Measles 1	15 %	33.8%	32.7%	23.5%	42.9%	49.8%	49.9%	41.0%	46.7%
	Aggregate data	12.2%	15.8%	18.2%	11.6%	-1.7%	6.7%	9.3%	9.9%
OI 2.2 - Drop out rates: Penta 1 - Penta 3	9 %	17.9%	18.8%	15.6%	18.9%	19.1%	18.8%	18.3%	22.5%
	Aggregate data	-3.8%	-3.4%	7.0%	-8.8%	-20.1%	3.4%	-2.9%	-8.4%
OI 2.3 - Timeliness for Measles 1	78 %	63.2%	67.2%	58.6%	59.7%	59.8%	66.8%	64.2%	67.9%
OI 2.4 - Missed opportunity for BCG	3 %	3.7%	3.1%	3.2%	3.8%	3.7%	1.8%	4.4%	11.9%

Comments

OI 2.1; OI 2.2 – In line with the Gambian Demographic Health Survey (DHS) that the Results Framework target is based on drop-out indicators are represented as ranged for the respective project period, which is from April to June 2021. All children that have received the first vaccine until the age of 12 months are counted as denominator and those children amongst them that have received the vaccine in question during the reporting period serve as numerator.

In the national formula for calculating drop-out rates aggregate data are used instead of individual-level data. In this formula the total number of receivers of the first vaccine and the number of the receivers of the vaccine in question are taken into account as numerator and cumulative denominator, respectively.

Set targets for both, BCG-MR1 and DPT1-DPT3 dropout rates, are yet to be met by all regions. However, both indicators have continued to be relatively stable for WR1 and WR2 during this quarter in comparison to preceding quarters (previous project year). For BCG-MR1 dropout WR1 and WR2 further continue to have a superior performance compared to the new regions. In contrast, dropout rates for DPT1-DPT3 dropout significantly improved for the 5 new regions and are now on an equal level to the proportions demonstrated by WR1 and WR2.

It was mentioned in the annual report 2020/2021 that both dropout indicators are subject to bias in the new regions since they were only operational for 3 months by that time resulting in insufficient time given to generate data in compliance with the national immunisation schedule. However, now that 6 months have past and DPT3 is given at 4 months or later (2 months minimum between DPT1 to DPT3) values become more realistic. The same effect is not yet presented for BCG-MR1 during the current quarter since MR1 is given at or after 9 months of age (9 months between BCG-MR1).

In addition it can though be seen in the aggregate data for DPT1-DPT3 dropout in all regions (negative values for denominator except WR1) that amongst the children the majority are possibly late first visits (children not registered at birth, but later in life). These children are not included in the individual level data, but in the aggregate data resulting in the following possible two scenarios (ref. [Quarterly report OCT-DEC 2019_Annex 1: Dropout investigation](#)):

- It considers children who did not receive BCG (DPT1) previously and received MR-1 (DPT3). As a consequence, the numerator is lower, sometimes below zero - which leads to underestimation of drop-out rates
- It considers children who received BCG (DPT1) recently and did not have chance to get MR-1 (DPT3), because they are not due yet (numerator is higher) - which leads to overestimation of drop-out rates

OI 2.3 - Timeliness for measles 1 continues to remain within the same range (around 60% +/-) as it used to be for the preceding project year (and even before). This observation not only applies to WR1 and WR2, but also to the new regions (ref. Quarterly report Jan-Mar 2021)

OI 2.4 - Almost all regions display a value close to the target of 3%. NBWR is even significantly above the 3% target with only 1.8% of children missing their opportunity to receive BCG within 24hrs from birth. However, LRR appears to be challenged since there were 11.9% of children that missed their opportunity during the quarter. The issue was brought up in the D4A workshop and HFs have noted various improvement actions. It will be interesting to see in the following quarter if they were successful in implementing them and if they have been effective.

Objective 3: → Evidence to support uptake has been acquired and shared with key people

Intermediate results/output indicators

Indicator Name	Target for the year <i>April 21-March 22</i>	Cumulative progress
RI 3.1 - Number of research papers, analyses and information material produced	20	11

Outcome indicators

Indicator Name	Target for the year <i>April 21-March 22</i>	Cumulative progress
OI 3.1 - Proportion of evidence and other materials to support uptake that has been acquired and shared	100 %	55 %

Comments:

RI 3.1; OI 3.1 – Twenty publications and communications are planned for the project year (note that the targets in the Results Framework are cumulative). Following 8 publications between April 2019 to March 2020, 3 more publications were added to the target within April 2020 to March 2021. For the current project year 9 more publications are expected. It is planned to publicly inform about the success of the national scale-up of SPT for EPI in The Gambia.

The 11 following communications out of 20 were produced and published between April 2019 to June 2021:

1. External evaluation results were shared and disseminated by the External Evaluation team in The Gambia: <https://doc.shifo.org/display/shareit/59016033/EQF44a6ad9cfe854a1e9399130a5dc60c9cAPS>
2. The video materials (including reflections from MoH and families with children) were published: <https://shifo.org/en/progress/gambia/>
3. Social media post about the existing burden of health workers with admin related activities and the importance of technological interventions to decrease the time was published: <https://www.linkedin.com/feed/update/urn:li:activity:6551762859641061376>
4. A video of the Director of Planning at the Ministry of Health explaining his experience working with the expanded programme on immunisation 13 years ago and the changes brought on by SPT was shared on social media: LinkedIn, Facebook and Twitter.
5. Information about trustable data and the importance of data accuracy and completeness in relation to SPT was shared on social media: LinkedIn, Facebook and Twitter. The post includes a video of the former director of health services at the Ministry of Health talking about the importance of Data and SPT.
6. Information regarding the importance of quality supply chain data is shared on social media: LinkedIn, Facebook and Twitter. The post includes a video of an Assistant public health officer speaking about the importance of SPT when it comes to stock forms.
7. The article "**Shifo Foundation's Smart Paper Technology can be a Game Changer for Emerging Countries**" has been published in "Healthcare Executive Magazine", which has about 35.000 subscribers <https://www.healthcareexecutive.in/blog/smart-paper-technology>
8. The article "**Smart Paper Technology adoption at scale in Western Regions, The Gambia**", which summarises the successful completion of scale-up of SPT in WR1 and WR2 has been shared on social media: LinkedIn, Facebook and Twitter. <https://medium.com/shifo-news/smart-paper-technology-adoption-at-scale-in-western-regions-the-gambia-29f603c2a86f>
9. A manuscript with the title "[An assessment of the quality of vaccination data produced through smart paper technology in The Gambia](#)" was submitted to the journal Vaccine, which is published by Elsevier. The manuscript which refers to the external evaluation carried out in 2019 is authored by the evaluators, Alieu Sowe and Maria Isabella Gariboldi. It got published on 29th September 2020.
10. [An assessment of the quality of vaccination data produced through Smart Paper Technology in The Gambia](#) (which refers to the publication of the above manuscript) was shared via LinkedIn, Facebook and Twitter within the third quarter of the 4th project year
11. [Shifo progress - The Gambia](#) was shared via LinkedIn, Facebook and Twitter within the third quarter of the 4th project year.

Objective 4: → Project activities are accomplished and progress and financial reports are approved

Activity/process indicators

Indicator Name	Target for the year <i>April 20-March 21</i>	Cumulative progress
AI 4.1 Proportion of project progress and financial reports produced and shared timely with project partners	100 %	20 %

Comments

AI 4.1 – This is the first out of a total of five reports scheduled for the project year that has been produced and shared timely. The denominator consists of four quarterly progress reports for the period April 2021 to March 2022 and one annual progress report and financial report for period April 2020 to March 2022. Following the agreed extension of the project until December 2022, there might be an update to the number of reports and/or reporting deadlines and/or reporting time frame once the respective amendment has been put together, shared and agreed with between Shifo and Gavi

Outcome indicators

Indicator Name	Target for the year <i>April 19-March 20</i>	Cumulative progress
OI 4.1 - Proportion of accomplished activities and resources utilised	100 %	100 %

Comments

As most activities are set to be completed in several years' time, accomplished activities are defined here as activities detailed in the Results Framework that are in progress (or completed) during the reporting period. The denominator is defined as all activities that are scheduled to be in progress (or completed) during the reporting period.

In compliance to agreed action points with GAVI is the process to draft the TOR for the activity "final evaluation" ongoing. It is planned to share the draft TOR in September 2021 to be reviewed by partners.

Further activities that are in focus of the following quarter include completion of the MyChild server transfer to MOH and engagement of the RBF unit to enter into closer collaboration.

Annex - Session Completeness

Annex: Session Completeness

In the previously submitted annual report for the period April 2020 to March 2021 a more comprehensive analysis to evaluate session completeness was made. Whilst routine reporting has been in part manual, especially when following up sessions that weren't held, this analysis seeks to discover any discrepancy of available information and its reflection in the digital data, the extent to which provided tools are used and to what extent the required processes are carried out and which areas for improvement are present.

Health facilities usually provide information regarding their fixed and outreach sessions on annual basis. The schedules are determined by the respective RHD and the HF in consultation with the community or communities concerned.

EPI organises an annual meeting called micro-planning to discuss and plan for the upcoming year. Within the micro-plan not only schedules are determined, but also vaccine targets and other goals are set.

Schedules are designed on both, the need and the availability of resources. The provision of staff is in control of the Directorate of Public Health and the Regional Health Directorate (RHD) through the Regional Principal Public Health Officer (RPPHO). The Directorate of Public Health posts HWs to the regions and the Regional Health Directorate (through the RPPHO) posts the health workers to health facilities in the region.



Figure 1: Dashboard

In Fig.1. the dashboard for the month of December 2020 for WR1 is shown. On the left of the display is the list of health facilities within the region and a calendar layout showing information about their sessions. The schedule is entered into the user management system which confers the information to the dashboard. The colour code identifies “held sessions as planned/on time” (green), “held sessions that weren't planned/unexpected” (yellow), “cancelled sessions in the system/cancelled” (dark grey), “sessions that didn't take place though planned and not cancelled/missed” (red) and “held sessions at health facilities with an irregular schedule/irregular schedule” (light grey).

The system then automatically counts the sessions planned per month vs. the sessions that have taken place (independent from them being planned or not) and thus provides the proportion of sessions held, which consequently can be above 100% due to the possible presence of unexpected sessions that took place.

Cancelled sessions in dark grey have been reported by health facilities on the “monthly return - vaccine management and data for action” SPT form. The “cancelled sessions report” (Fig.2) is available from the dashboard and shows a list of health facilities within the selected region that have provided information for the respective month. Information about the date, the type (static/outreach) and the reason can be collected and is shown in the cancelled sessions report.

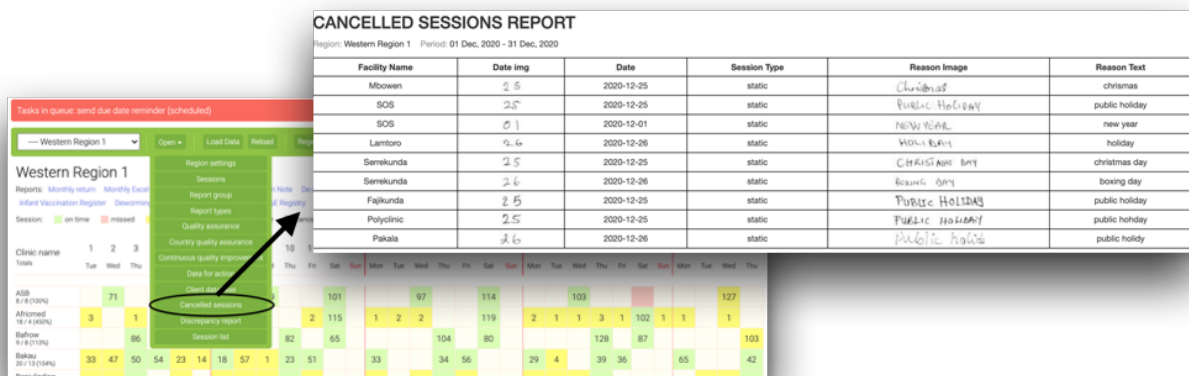


Figure 2: Cancelled session report

For a comparative analysis the following relationships were studied and evaluated under indicators OI 1.2 and OI 1.3:

- (1) Total held sessions (proportion of all sessions that were held, both planned and unplanned)
- (2) Session completeness (proportion of sessions held that were planned according to schedule)
- (3) Cancelled sessions (proportion of missed sessions that were officially cancelled in the dashboard amongst all sessions that were not held)
- (4) Unplanned sessions (proportion of sessions amongst the held sessions that were not planned, but held in addition to the planned sessions)

Table 1: OI 1.2. Proportion of fixed sessions performed that are captured in the electronic reports (fixed session data completeness)

	Cumulative progress							
	April 20-March 21							
	national	WR1	WR2	CRR	URR	NBWR	NBER	LRR
Total held sessions (1)	5442 / 3588 (151.7%)	3851 / 2807 (137.2%)	1003 / 508 (197.4%)	85 / 63 (134.9%)	167 / 72 (231.9%)	69 / 54 (127.8%)	94 / 45 (208.9%)	173 / 39 (443.6%)
session completeness (2)	96.1%	95.4%	98.6%	100 %	100 %	94.4%	100 %	97.4%
cancelled sessions (3)	71 / 139 (51.1%)	65 / 128 (50.8%)	6 / 7 (85.7%)	0 / 0 (0.0%)	0 / 0 (0.0%)	0 / 3 (0.0%)	0 / 0 (0.0%)	0 / 1 (0.0%)
unplanned sessions (4)	1993 / 5442 (36.6%)	1172 / 3851 (30.4%)	502 / 1003 (50.0%)	22 / 85 (25.9%)	95 / 167 (56.9%)	18 / 69 (26.1%)	49 / 94 (52.1%)	135 / 173 (78.0%)

Sessions that are captured under “total held sessions” (1) include all sessions that took place, which includes unexpected session. As a result of these unexpected sessions the numerator is higher than the denominator. The proportion of fixed unexpected sessions ranges from a minimum of 27.8% to astonishing 343.6% in some regions during the project year. It should thereby be remembered that only WR1 and WR2 comprise 12 months, while all other regions only display 3 months of data.

Interpretation of the results shown by the “total held sessions” though must be interpreted with caution. The presence of cancelled and/or missed sessions can result in less than 100% of planned sessions that were held (e.g., 3588 fixed sessions were nationally planned between Apr2020-Mar2021(=100%), but there were 139 sessions that were missed (= 3.9%)) and therefore lead to the assumption that only the proportion above 100% shown (e.g., 51.7% nationally) constitutes unplanned session though in reality this proportion is actually higher (51.7% + 3.9%).

Moreover, a fixed “total held sessions” of 443.6% as it is shown for LRR should trigger a review of the dashboard to get to the origin and type of this many sessions that were held beyond the given schedule. Most unexpected sessions constitute of sessions with very low visit numbers (mostly between 1 to 10), real sessions have significantly higher visit numbers. Those sessions with low visit numbers originate from the maternity ward within or near the health facility that provides EPI services. Each visit represents a newly born baby receiving HepB and OPV0 within 24hrs after birth. The obviously lower proportion of unplanned outreach sessions (3.8% vs. 36.6% nationally) supports this finding.

Therefore, to get a realistic picture of the situation one must look at the “cancelled sessions” (3) and “unplanned sessions” (4) separately, which eventually results in "session completeness" (2) and eventually consult the dashboard - as exemplarily described above for the national data for fixed sessions.

“Cancelled sessions” (3) can provide even more insight into the situation since here it is distinguished between officially cancelled sessions (dark grey) and sessions that were missed (red).

The table shows that there were 139 planned fixed session nationally that weren't held (according to provided schedules) between April 2020 to March 2021. Of these 139 sessions 71 were officially cancelled by usage of the “monthly return” SPT form. Hence, 51.1% of all sessions that were missed within the project year weren't officially cancelled.

This result is alarming and indicates that there is further needed to strengthen a data use culture and build stronger awareness amongst health workers for the need of documentation diligence. As it is known from the routine reporting of these indicators have there only been 15 fixed (and 9 outreach) sessions been considered as missing for the whole year. Hence, HWs could have reported most of the cancelled sessions as cancelled sessions on the monthly return - except for those sessions that had other reasons why they weren't held, e.g., SPT forms got lost before scanning. The significance of such occasions would require further investigation and if found to be of high prevalence other measures would have to be taken.

This shows the importance of directly following up with health facilities and obviously a need to better train health workers to fill in all information into the monthly return and to make use of the dashboard. Reasons can again be manifold, but since this is no individual case but general habit it can be assumed that underlying local structures at the facilities do not yet support health workers in easily summarizing cancelled sessions and their reasons at the end of each month.

The information given as reason why sessions were cancelled can be very valuable to plan and re-allocate resources and staff. Monthly and/or quarterly follow-ups can result in timely adaptations that can in turn increase compliance of care takers with their children's immunisation schedule. These indicators are thus very useful in the context of SmartActions platform.

There were for example 2 outreach session per month planned at Bafrow health facility that were cancelled due to COVID-19. Since it became a constant cancellation, the schedule was adapted. However, these adjustments are not always immediate, and they have to be evaluated before action is taken. As a result, these 2 session/month do neither show as cancelled or missed anymore, though they have been removed from the initial schedule that was given in the beginning of the year. The manual follow-up and documentation allow to capture the real impact and suggests using both systems complementary.

Finally, the majority of "unplanned sessions" originate from the maternity ward as already mentioned above. In Gambia, it is currently not distinguished between those sessions and the static session at EPI service providing health facilities even though the MyChild system provides a separate dashboard for the maternity ward (as it is used in Uganda). It could be worthwhile to suggest a transfer of unplanned session from the maternity ward, i.e., sessions with administration of HepB and OPV0, to the "maternity" dashboard since their impact is quite significant.

Table 2: OI 1.3. Proportion of outreach sessions performed that are captured in the electronic reports (outreach session data completeness)

	Cumulative progress							
	April 20-March 21							
	national	WR1	WR2	CRR	URR	NBWR	NBER	LRR
Total held sessions (1)	1789 / 1778 (100.6%)	236 / 239 (98.7%)	625 / 634 (98.6%)	273 / 267 (102.2%)	259 / 261 (99.2%)	141 / 132 (106.8%)	103 / 101 (102.0%)	152 / 144 (105.6%)
session completeness (2)	96.8%	92.1%	94.8%	100 %	98.5%	100 %	99.0%	100 %
cancelled sessions (3)	15 / 57 (26.3%)	13 / 19 (68.4%)	2 / 33 (6.1%)	0 / 0 (0.0%)	1 / 4 (25.0%)	0 / 0 (0.0%)	0 / 1 (0.0%)	0 / 0 (0.0%)
unplanned sessions (4)	68 / 1789 (3.8%)	16 / 236 (6.8%)	24 / 625 (3.8%)	6 / 273 (2.2%)	2 / 259 (0.8%)	9 / 141 (6.4%)	3 / 103 (2.9%)	8 / 152 (5.3%)

Thus, subtracting the unplanned sessions and looking at the session completeness allows to conclude that most planned sessions were held for both fixed HSDPs and outreaches (96.1% static and 96.8% outreach). Additionally, the new regions - even though to be considered that they are only operational for 3 months - present all together only 4 static and 5 outreach sessions that were cancelled and only 1 of these sessions was not officially cancelled.

Analysis of HFs' schedules can provide even more information, such as the ratio between static and outreach sessions as shown in table 3. Interestingly, only WR1 has a significant higher proportion of static HSDPS than outreach sites - for all other regions the relationship is the other way round.

Table 3: Ratio of planned static vs. outreach session in all regions

	national	WR1	WR2	CRR	URR	NBWR	NBER	LRR
static	3588	2807	508	63	72	54	45	39
outreach	1778	239	634	267	261	132	101	144
Ratio (static/outreach)	2	11.7	0.8	0.2	0.3	0.4	0.4	0.3

This analysis has shown that the dashboard is a valuable tool to work with to analyze both indicators presented here, OI 1.2 and OI 1.3, and information beyond. To appreciate the information accessible through the dashboard it is essential to make regular use of it. For RHDs this would mean to monthly consult the dashboard to correctly interpret the data presented in the monthly reports and to be able to follow up with HFs in their region and therefore improve KPI performance. RHDs are currently still in need of intensive support from partner AAITG to follow-up on missed sessions. Current efforts have the goal to gradually transfer this routine to the RHDs to be carried out independently.

In addition, this analysis demonstrated that HFs must get a better routine in recording session cancellations. It requires a significant amount of effort, especially requiring significant investment of time, to follow up on all sessions that appear as missing in the dashboard. However, the manual follow up will presumably not become redundant very soon as there is a need to fill that information gap that the digital data do not reveal. With implementation of SmartActions platform a system-inherent mechanism to instantly visualize where is need for action and to record those actions will be provided. In addition, revision of the user management and dashboard before transfer to MOH will further enable a better process, which includes provision of an accountability mechanism and will be especially useful in relation to session completeness.

Finally, one of the most important factors in following up on session completeness is reasoning. Reasons why sessions appear as missing can be many and wouldn't be detrimental when only happening occasionally. However, if the number of missed sessions accumulates and/or a pattern can be observed, there is a need to adapt the schedule to enable efficient management of resources, such as staff and vaccine supply and transport (to outreaches). The goal is to make EPI services accessible and affordable and to remove any other barriers that would prevent children to receive life-saving vaccines. A reliable and sufficient offer of sessions plays a vital role in this regard and efficient planning can save valuable resources and avoid increasing scarcity thereof.