

Supply-Side Workflow and Plan

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Scope and Purpose

As an organization focused on behavior change for increased immunizations coverage, we rely on the national, state, and local vaccine supply chain to be able to achieve our goal. Vaccine supply can be quite variable, particularly in the North West region of Nigeria. Our mandate does not currently include significant interventions on the supply-side and we do not want supply to be a significant reason behind the difference in immunization coverage as assessed by the Randomized Control Trial. However, our ability to immunize infants on-time gets compromised in the absence of vaccines, which makes a steady vaccine supply mission critical. Keeping this in mind, the goal of the Supply-Side Workflows is to mitigate vaccine and Child Health Card Stockouts and Runouts.

Our focus is to ensure uninterrupted supply of these key vaccines: BCG, PENTA, PCV, OPV, Measles, and Yellow Fever (YF) to our 98 clinics in the 3 states. In keeping with the considerations introduced above, a majority of our action will be taken at the level of the country, state, zonal and local governments to ensure adequate supply to all clinics, including control clinics. Since our teams visit the clinics on immunization days and have relationships and processes leading to greater accountability that might not be present in others, there is a chance that our clinics might have more consistent supply, but this is expected to be marginally different from control sites especially with the consideration that our clinics are often serving greater volumes without additional resources, subjecting it to a greater risk of stockouts and runouts.

A **Stockout** is defined by a vaccine or Child Health Card (CHC) not being available at all at the beginning of an immunization day at a clinic. A **Runout** (or ranout if used as past tense) is defined as a vaccine or CHC that was

available at the beginning of an immunization day but that was no longer available before the end of the immunization session; possibly exhausted or if the nurse refused to open a new vial for example. The unit of measurement in both cases is at the level of vaccine or CHC and at the level of each immunization day. This means that if two clinics in a particular LGA did not get any vial of Measles vaccine and that day in one of the clinics, PENTA vaccine was administered during the start but finished after 20 infants (2 vials) with some eligible infants left unvaccinated in that clinic, we would communicate this as 2 stockouts of Measles vaccine and 1 runout of PENTA vaccine. For simplicity of communication and measurement, we consider this to be 2 stockouts and 1 runout across the two clinics.

Roles and Responsibilities

Increasing vaccine availability is done through diligence in understanding the partners and agencies managing the supply-chain and by advocating through stakeholders. The Government Relations (GR) team managed these relationships and this is one of the key benefits we expect from the support we provide stakeholders and the system. For that reason, the responsibility of maintaining strong vaccine availability falls on the Government Relations team in the current structure.

The field operations team bears the responsibility of diligently and promptly communicating stockouts, runouts, and helpful information so that we can work more effectively as a team. Our field operations team is sometimes closest to some of these stakeholders and cases, which is why there is an expectation for the operations team to support where needed. However, time invested by the Field Operations Team should be minimized and it is expected that proactive, not reactive, measures are taken to ensure minimum disruption of planned activities on the field. This implies that request to field team should be minimized and ideally be made at least 24 hours in advance.

Key Responsibilities

Field Staff

- Accountable to FM
- Accurate reporting of information on stockouts, runouts, VVMs, vaccine utilization, and infants not served through Clinic Daily
- Assessment and reporting of cause of issue through effective probing
- Prompt communication and escalation of any supply issues to Field Manager, alongwith with same day submission of Clinic Daily
- Communicating expected supply requirements, when this information is made available by the organization
- When requested, interfacing with clinic staff to confirm vaccine and CHC supply availability

Government Relations Team and Supply Console

- Accountable to SSM
- Design and implement proactive measures to mitigate the possibility of stockouts
- Diligent and prompt follow up for all cases of stockouts and ranouts with the goal of avoiding supply issues at NI-ABAE clinics
- Maintaining and strengthening relationships with stakeholders at all levels (including National, Zonal, State, and Local) and active participation in Technical Working Groups that help increase influence
- Ascertain and minimize risks by maintaining an updated understanding of supply channels, future planning, and likelihood of funding issues
- Update and disseminate information of supply to affected managers proactively

Field Managers

- Accountable to SFM

- Follow up on immunization days with team members to confirm vaccine status
- First responder to resolvable supply issues and filing for escalation to GR team when issues
- Maintain compliance of timely reporting of stockouts, runouts, VVMs, vaccine utilization, and infants not served by team members
- Liaise with clinic staff or LGA to understand and reduce stockout, when requested by GR team and/or line managers
- Review updated vaccine information and assist in resolution during periods of serious supply issues

Senior Field Managers

- Accountable to COO
- Liaise with state to understand and reduce stockout, when requested by GR team or COO
- Decision-making authority on actions needing to be taken by field teams in respective states, this could include GR team members (dotted line to Mahmoud and Zaharadeen, based on state)
- Maintaining an understanding of stockouts and runouts

Senior Stakeholders Manager (SSM)

- Accountable to COO
- Decision-making authority on proactive and ad hoc mitigation measures to increase continuous supply availability
- Decision-making authority on engagement with stakeholders and funding decisions related to supply as per guidance from COO. All funding provisions should be documented along with dates
- Address issues with NPHCDA if the source of issues is at the National level or if interface at that level can help resolve key issues
- Updates to research team on supply

Data Analytics Team

- Accountable to COO
- Maintain direct line of feedback and communication through James
- Resolve bugs, issues, and add relevant features to help achieve supply goals and objectives
- Ensure data is reliable, consistent, and is being updated as regularly as possible
- Monitor usage and proactively recommend on ways to improve workflow
- Dir. of Data Analytics will have decision-making authority on changes to ensure the systems are running and ad-hoc measures that don't significantly change the system from agreed-upon scope

COO:

- Accountable to the CEO
- Decision-making authority on larger mitigation measures that significantly impact operations or require funding above related guidance, as proposed by SSM
- Decision-making on major tenants and processes related to supply-side protocols, including Data Analytics and systems development
- Strategic management of supply-side activities and related roles and responsibilities

CEO:

- Accountable to the Board
- Manages the COO including on vaccine supply-side
- Provides updates to the Board and donors on supply

Current Supply-Side Context and Activities

Below are some of the problems that we are hoping to solve through the approach in this document:

- [Supply-Side Dashboard](#) that needs to be improved and geared towards the Stakeholder team that is currently working on this
- Inefficient and “reactive” ways to manage stockouts and other issues when they occur
- Lack of visibility from Clinic Daily and Console Reviews and consolidated actionable information

Until March 2019, supply-side interventions were managed by both the field operations team and Government Relations Team without clear responsibilities. With increasing issues in vaccine supply causing widespread stockouts, and an increase in the GR Team members under the SSM’s leadership, this responsibility was transferred to the GR Team due to greater suitability. Previously, there were cases of key successes like the FD and SFMs influencing stakeholders as high as the Zonal CCO but these were largely temporary fixes to larger unresolved issues. Part of this change process and conversation was led by SPEA in April.

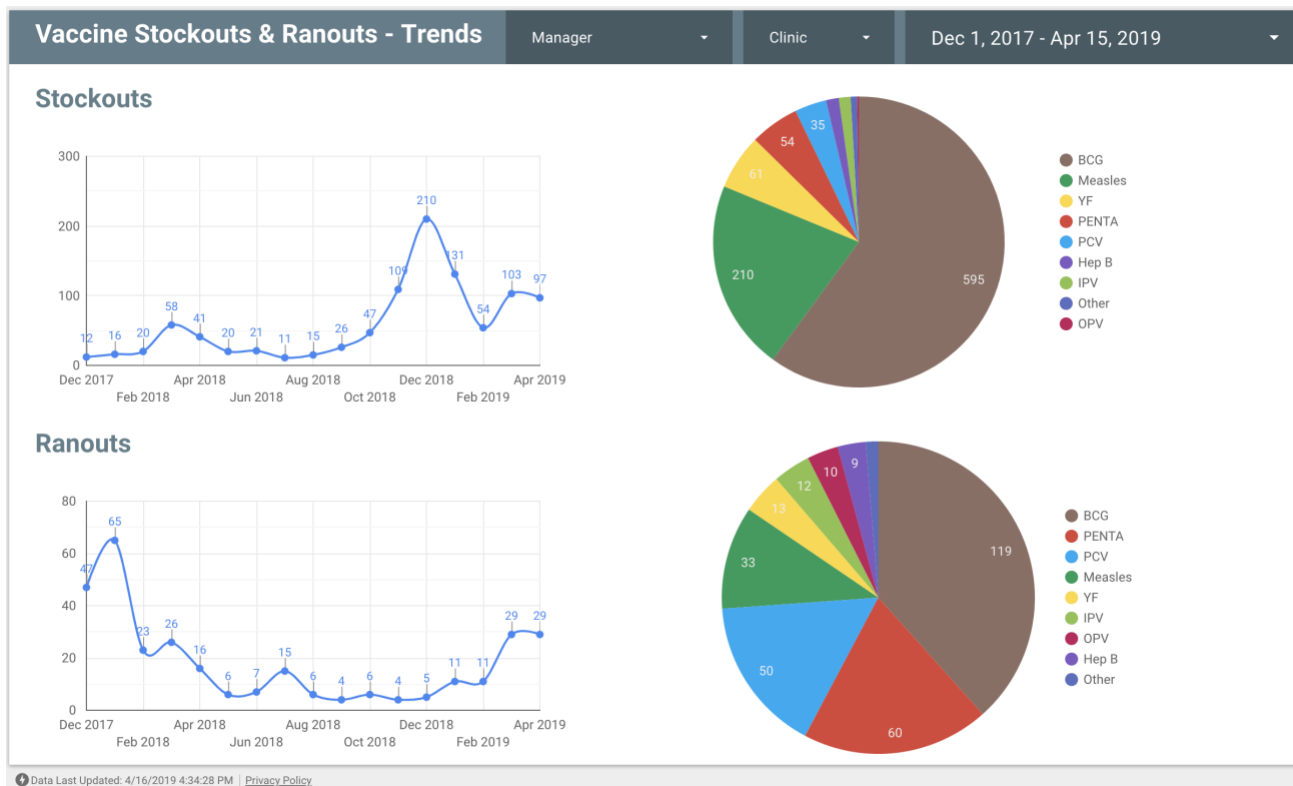
Past Process:

- FA/FV Morning calls to clinic staff: this is where the FA/FV gets an idea of the number of available vaccines at the clinic (sometimes they only get to find out when at the clinic because the correct figure was not communicated to them by the RI staff) they then inform the FM of a possible issue.
- FM: Make calls to the incharge to confirm and understand the issue better then proceed to call the Ward focal persons in some cases to alert him and request if they can provide top-ups for the clinic from the neighboring clinics and also calls the LCCO to request more vaccines to be supplied to the clinic. There were cases where this did not resolve the issue due to a lack of willingness to spend funds on transportation. These cases are noted in the FM Daily Check-ins.
- SFM: In cases where the vaccines are available at LGA but no transport the SFM speaks with DPHC, which often helped vaccines get delivered after the intervention of DPHC/LIO.
- In cases where there is stockout at the LGA, the SFM calls the SLO or SCCO to confirm availability at the state and when the next push will happen while notifying the SERICC during a morning meeting of current stockout at particular LGAs. When the stockout is at the state level SFM informs Nura for continuous follow up.
- Large issues affecting supply at State and Zonal level was often resolved by leveraging stakeholder relationships nurtured by the Government Relations team and SFMs.
- Nasir Sani, the Security Console, also probed for supply issues at the LGA level to help identify cases of potential stockouts.
- A Supply-Side Dashboard was maintained with aggregated metrics that was not reviewed and was not found to be actionable and thus recently archived.
- Clinic Daily Reviews was one source for the FMs to review if there was a stockout, however, majority of such cases are communicated during the morning FM Daily Check-ins.

There were some differences in execution among the different states based on the SFM’s leadership and the structure of the government stakeholders as well as the vaccine supply system.

In October and December last year, there were National and Zonal level barriers on supply that affected our clinics and operations.

Below is a table that summarizes the frequency of reported stockouts at our clinics.



Goals and Objectives

Below are goals of the Supply-Side Unit (as managed by the GR Team):

- Take proactive measures to ensure steady supply at National, Zonal, State, LGA, and clinic levels
- Gain understanding of stock and supply flow at all levels and measure against expected supply needs
- Review and revise processes and workflow as circumstances and context changes
- Plan and communicate effectively and avoid need for urgent responses from field and GR teams
- Maintain less than 20 stockouts per month
- Maintain less than 20 runouts per month

Components of Supply-Side Workflow

The Supply-Side Workflow will be based on the following components:

1. Case Logs: Action and Resolution
2. Reports and Dashboards
3. Proactive Measures and Resource Management

Case Logs: Active Resolution of Stockouts

All issues identified by the following sources should be added to a Case Log, which will become the operational console for the Vaccine Supply Console to actively work on.

These are the fields that should be used to trigger a case log to be opened (one case per stockout or runout):

- Any vaccine expiring within 1 month (Source: Clinic Daily Review)
- Stockouts and Runouts (Source: Clinic Daily)
- Vial Not Opened (Source: Clinic Daily)

- Infants Not Served (Source: Clinic Daily)
- Manual submission: by FM, SFM, Vaccine Console, or GR Team members

Once reported, each Case Log will be added for review and resolution by the Supply Console. As soon as the Supply Console has started working on the Case, the status should be modified to “In-Progress” in the Case Management App (mobile app). Resolution should be prioritized based on reducing the chances of another stockout (e.g. if the next expected immunization day for the clinic if the issue is at the clinic level, or the next clinic in the LGA if the cause is at the LGA level and so on).

The app will have at least the following fields:

Case_ID

CATEGORY - A broad category to indicate the source of the task

SUB_CATEGORY - Classification of the task

CLINIC_CODE

VISIT_TYPE - This states 'Clinic' day or 'Outreach' day. There is value to this info.

DESCRIPTION - A detailed description to about the incident. In case of Children not served, it gives the explanation provided etc.,

INCIDENT_DATE - Date of clinic daily report

QUEUE_DATE - Date the task was created in queue (Please confirm if queueing can be instant on identification?)

ASSIGN_DATE - Up on task created this is the same as QUEUE DATE, App will update this field upon reassignments

DUE_DATE - This should be replaced with NEXT IMMUNIZATION DAY for the particular clinic, and it should include the next Outreach Date based on Clinic Daily submission

ACTION_TAKEN - What has been done or is being done, what action was taken?

OUTCOME - What was the result of the action taken, or notes

STATUS - Defaults to 'Assigned' as the task is initially assigned to the manager. --> PA: Options should be Assigned, In-Progress, Resolved, Delegated, Reviewed, False/Unverified

PRIORITY - High, Medium, Low

ASSIGNEE

One or multiple reports will be created based on requirements by SSM and added to the Supply-Side Dashboard to enable managerial review and for query by the GR and Field Operations Teams. App-level visibility of logging-in and reviewing this information is desirable, especially for field teams, but not necessary if the Supply Console is available for questions.

Reporting and Communication

A Supply-Side Dashboard should be created and maintained for the following objectives:

- Report for review: high-level overview of stockout and runout trends
- Action identification: detailed view of stockouts and runout cases with information on Date and Clinic with filters for LGA, State, and Date Range
- Action identification: list of expired vaccines with dates and clinics information as well as list of vaccines that will be expiring within the next 30 days
- Action identification: list of VVMs that were at or close to point of discard (Stage 3 and 4)
- Report for review: comparison view of stockouts and runouts to ensure data is being recorded diligently and follow up on a bi-weekly basis for cases where data recording may not be complete by field staff
- Report for review: report on number of cases identified and number resolved and period of resolution, with filters for LGA, clinic, state, and date range

- Report for review: clinic level report, detailing information about the clinic and the stockouts and runouts experienced and necessary clinic information (e.g. LGA, State) for holistic understanding and action, with ability to clinic on any clinic and come to this particular report with clinic selected
- Report for action: table of LGA, and filter for State, Date Range, Vaccine, to assess latest vaccine supply stock against expected usage. Columns will be needed for Clinic, Source, Date Reported, Stock, Monthly Usage, Vaccine, and Runway (period of time vaccine is expected to last until)
- Managerial access to Raw Data from Supply Side App

Email Notifications:

- Daily automated report of stockouts, triggered if there is a stockout on the previous day to GR Team, Vaccine Console, and relevant SFM and FM (e.g., if a particular clinic in Katsina is affected, SFM Katsina and FM for clinic should be part of those notified). This should contain the following information:
 - Number of cases identified yesterday and today
 - Clinic affected for each case, cause, date and resolution status
 - Link to more information or report details
 - Email should be sent each day at 5am Nigeria time
- Weekly report on stockouts to GR Team, Ops team managers, COO, and anybody who would like to subscribe for this notification. This should contain the following information:
 - Number of cases identified in the past week
 - Clinic affected for each case, cause, date and resolution status
 - Runway, if less than 1 month
 - Link to more information or report details
 - Email should be sent on Friday at noon Nigeria time

Prevention of Stockouts and Runouts

Prevention is expected to happen at all levels and through the following processes:

- Current Stock Report at all levels: Collection of report on stock as it flows from National to Zonal and Zonal to State and State to LGA, with details on date, quantity transferred of each vaccine and total quantity reported in-stock at different levels
 - VAN weekly report from the SCCO by FD
 - Vaccine supply and utilization data Data from ZCCO by FD
 - Vaccine supply and utilization data from NLWG by SSM
- Fortnightly call with SCCO and LCCO: Call and ask questions to SCCOs and LCCOs regarding their stock and expiration. [Current Log](#), to be converted for Appsheet input through computer in the future.
 - Calls by Vaccine Console Manager
- Runway (stock adequacy based on historical data) calculations and dissemination of this information for stakeholder review and possible SERICC and NPHCDA discussions
 - Runway = number of weeks supply is expected to last (Expected weekly or monthly consumption / total stock of vaccine available for that week or month)
 - Runway calculations will work at State, LGA, and Apex levels
 - Calculations should be done at the weekly level at Apex, and at monthly levels at State and LGA
- Clinic expectations: inform clinics in advance about likely requirements based on expected number of infants for BCG, PENTA, PCV, YF, and Measles
 - This could be useful but lower priority. Hold. First confirm the main source of the issue. If clinics are the source of the issue or we are seeing runouts, then this should be considered. One benefit is that this could be our contribution to the clinic RI officer.

- Wastage Assessment
 - TBD

Supply-Side Console Responsibilities

- The Supply-Side Console (SSC) is responsible for reviewing each case of stockout or runout and take necessary action to understand the cause and resolve the issue so that it does not recur at other clinics in the LGA and the next immunization day at that clinic. This person sits as the primary liaison responsible for coordinating case resolutions among teams and is the primary responder to whom all cases are delegated.
- There are 5 phases of engagement by the SSC
 - a. Review: Understand issue, assess extent, and identify cause and primary stakeholders
 - b. Enquire: If needed, enquire from field team to get more information
 - c. Action: Take necessary next steps to resolve issue. Some are quick and resolved like requesting for vaccines to be pushed out while others might need call or email to Zaharadeen or Mahmoud depending on state or escalation to Nura
 - d. Follow-up: Calls to get follow-up on what happened and get update
 - e. Reporting: Ensure documentation of issues and communication to relevant teams. Currently, between 4-5pm a report is created and all interested stakeholders are copied
- The goal will to replicate the above process through the app. Assess feasibility, including email notification/trigger. There should be managerial access to the submitted data to review the status report and ongoing effort by team members to aid managerial duties, including:
 - a. what is ongoing and what is resolved,
 - b. which stage of the 5 stages is each case at and similar reporting
 - c. who is accountable for each pending case
 - d. what was the history and the escalation
- Make fortnightly calls to LCCOs and SCCOs to get information on stock and anticipate stockouts. Currently, the [Fortnightly call with SCCO and LCCO Log](#) is used
 - a. Critical note for Case Management -- some issues are handled at “case level” and others at LGA level, can we distinguish between the two or should that be done through dashboards?
 - b. Manual logging of cases will be required in addition to automatic ones and maybe should get higher priority or a “confirmed” tag with fewer steps before action can be taken
- [Supply-side Action Protocol \(The IFTIA FC Document\)](#)
 - a. Process log for handling each issue
 - b. Responsible person for handling each issue
 - c. Daily and weekly reporting the process.

Proposed Timeline of Activities

- April 25: Draft completed by Prat, reviewed and understood by James. Shared with Obinna and Nigel.
- April 29: In parallel, feasibility review by DA team, and doc updated based on that and shared with FMs and SFMs. Get feedback from Adakwu/Patience
- April 30: Feedback received from SFMs, edits recommended to Obinna and Prat based on responsibilities. Need information about Apex clinics and physical count and have alignment meeting with Ops team
- May 3: Based on feasibility review of different requests, priorities for development are discussed and decided by Obinna and James with requirements and proposed timelines submitted to Data Analytics Team
- May 7: Data Analytics team commits to feasible timeline and adds to development queue. James to manage communication, testing/QA, training, deployment and ongoing feedback

Annex and Resources (DA Access Only)

Supply-Side Dashboard and related requests ([#167](#) and [#168](#))

[Supply-Side Case Management App #169](#)

[Log of Fortnightly Calls #170](#)

[Current Case Logs](#)