

Trip Report: Technical Assistance for Rwanda Performance Based Financing Project

Randy Wilson

September 29, 2006

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Rwanda HIV Performance Based Financing (PBF) Project
USAID Contract/Task order No GHS-I-00-03-00030-00

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Technical Assistance for Rwanda Performance Based Financing Project: Trip Report

Randy Wilson, Chief Information Officer, Management Sciences for Health

Visit dates: September 8 - September 16, 2006

Objectives:

The Rwanda HIV Performance Based Financing (PBF) Project is developing a database for use at the national level, to track the results of performance indicators throughout the country. Technical assistance from MSH to develop this database has been requested from the CAAC – a governmental department within the Ministry of Health that is also supported by the Belgian Technical Cooperation (CTB). This database will be managed by Rigobert Mpendwanzi, a Government employee with support from an MSH staff member. Rigobert, who is in charge at the CAAC of data collection, has an advanced understanding of database management. An MSH local hire staff member with the required profile will be recruited shortly.

Gyuri Frische, the project's health financing advisor, has set the groundwork for the system by establishing a consensus about a limited set of output and quality of care indicators, developing templates for each of the reporting and analysis formats, and defining the procedures for establishing contracts with each of the health facilities participating in the program.

Given the volume of data – and recently established guidelines from USAID that individual contracts need to be established yearly with each health facility (not simply each health district) – it has become clear that a database is required to manage the program effectively. Rather than developing software from scratch, MSH has decided to adapt a database developed for a similar project in the Philippines (LEAD).

The purpose of this visit was to adapt the database to local requirements through the development of a Microsoft Access prototype and to plan the conversion of key elements of the system to a web platform later this year that will enable users in each health district to enter the data remotely using Rwanda's recently enhanced 3G wireless internet network. The detailed scope of work for this visit is included in Annex 1.

Key Accomplishments:

1. Adaptation of PBF Database:

- a. Converted key elements of Philippines LEAD database – using similar indicator definitions and table structure – and translated the interface into French.
- b. Met with key stakeholders to discuss system requirements and demonstrate the evolving prototype software. These included:
 - i. Staff from the MSH project: Dr. Gyuri Frische, Health financing specialist, and Dr. Ousmane Faye COP.
 - ii. Staff from the Belgian Cooperation – who are also participating in funding the PBF in additional districts and have similar information system needs. Rigobert Mpendwanzi, Dr Louis Rusa; Dr Werner Vandenbulcke and Georges Ntabashwa
 - iii. Dr. Emelien – Ministry of Health manager who is responsible for the national health information system (SIS) – shared with us the health facility list from the SIS and his concern about the multiplication of parallel reporting systems.

- c. Gathered data for the creation of standard reference tables required by the system including:
 - i. Health facility codes and attributes
 - ii. District names and population
 - iii. National level estimates for projecting population figures and calculating key health service target populations
- d. Added new functions to the database prototype:
 - i. Quality of service measurements to validate service outputs and adjust reimbursements accordingly
 - ii. Design of a procedure to prepare quarterly payment documents by health facility and district. This also produces a list of payments to be made by bank account.
 - iii. Linkage of service data with population statistics from the 2002 census for calculating key coverage indicators.
 - iv. A set of analysis tools to enable users to present and interpret the data using tables and charts prepared in both Access and Excel (using linked Pivot-tables).
- e. Imported CAAC data from 2004-2006.
- f. Created a draft user's manual in English.

2. Preparation for development of Web interface:

- a. Developed overview of web site contents – map
- b. Prepared workplan for implementation of system.
- c. Finalized Scope of Work and identified consultant to provide technical support for the conversion.
- d. Downloaded, installed and tested MySQL shareware database for use as the backend for the data.
- e. Met with TracNet and Terracom to determine arrangements for web application hosting through co-location.
 - i. Shaban – Technical manager of the TracNet database developed by CDC for tracking HIV/AIDS and ARV data. He shared with us the arrangements they have with Terracom to have their web server collocated at Terracom's data center.
 - ii. Staff from Terracom – we met with one of their marketing team and spoke with a technician over the phone. They are able to accommodate any server we would like to collocate. Most of their equipment is HP at this time, but they have Linux and Windows server that they support. Equipment can be either rack mounted or stand-alone.

3. Office network troubleshooting:

Helped to resolve issues with the project's file server that has been out of commission for 2 weeks. During this process I worked with Claude, the project's IT manager, and MSH staff from Cambridge, Ma dialing in remotely to reinstall the operating system, reconfigure the domain, create users and recover key data. The project needs to repair the UPS that currently only provides 3 minutes of back-up time for the server and install the PowerChute software that will shut it down in an orderly manner should a power outage continue for more than 10 minutes. I believe this was the root cause of the problem that caused the server to fail in the first place.

Follow-up tasks:

- a. Complete additional reports based upon design templates prepared by Gyuri.
- b. Develop new modules to:
 - Analyze trends in population coverage indicators by District
 - Project PBF budgets by health facility based upon past performance and other key variables.

- Create and store annual PBF contracts with each participating health facility.
- c. Work remotely with Sarah Tomas to develop the web interface and procure required hardware and software.
- d. Plan for visit to Rwanda in early November.
- e. Monitor progress of Access prototype testing by CAAC and MSH project staff, providing ad hoc remote support to correct bugs and incorporate enhancements desired by users.

Specifications for Rwanda Web server:

| Part no. | Description | Qty | Unit price | Discount | Total |
|---|---|-----|-------------------------|----------|-------------------------|
| | HP ProLiant ML350 G4p 3.20GHz/2M SCSI - Tower Array Server - Smart Buy | 1 | \$1,526.00 ^p | \$0.00 | \$1,526.00 ^p |
| 470063-946 | HP ProLiant ML350 G4p SCSI - Tower Array Server Intel® Xeon™ 3.20GHz/800MHz, 2M Processor 2GB REG PC2-3200 (2x1024MB) memory Smart Array 641 Controller HP 725W Hot plug redundant power supply Redundant fan kit 6 x 1" Hot Pluggable Hard Drive Bays 1.44MB Floppy Disk Drive Embedded NC7761 PCI 10/100/1000T Gigabit network adapter DVD-ROM Drive SmartStart & Insight Manager 3 years parts, labor and onsite service (3/3/3) standard warranty. Certain restrictions and exclusions apply. | | | | |
| 347708-B22 | HP 146.8GB Pluggable Ultra320 SCSI 15,000 rpm (1") Universal Hard Drive | 3 | \$599.00 | \$197.67 | \$1,599.33 |
| | HP T2200xr HV UPS | 1 | \$0.00 | \$0.00 | \$0.00 |
| 384956-B21 | Red Hat Ent Linux 4 AS Prm 24X7 1yr SW | 1 | \$643.08 | \$0.00 | \$643.08 |
| *Subtotal | | | | | \$3,768.41 |
| *Est. Shipping | | | | | \$5.15 |
| *Est. Tax | | | | | \$0.00 |
| *Total | | | | | \$3,773.56 |
| * Actual tax will be calculated when your order is placed. | | | | | |
| p Products marked with p beside the price are Promotional Items not eligible for Price Book or Big Deal discounts, E-coupons or other promotional offers. | | | | | |

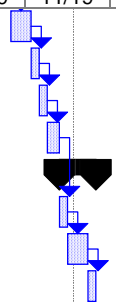
Add additional items:

| | |
|--|--------|
| HP DAT 72 (36 gig) internal tape drive | \$1000 |
| HP DAT-72 Storage Media Kit (14 data cartridges, 1 cleaning cartridge, 1 media case, colored labels and tape backup guide) | \$281 |

| ID | Activite | Duree | Start | July 01 | | | August 21 | | October 11 | | December | |
|----|--|-------------------|---------------------|---------|-------|-------|-----------|-------|------------|-------|----------|-------|
| | | | | 06/25 | 07/16 | 08/06 | 08/27 | 09/17 | 10/08 | 10/29 | 11/19 | 12/10 |
| 1 | Systems Analysis | 14 days | Tue 08/01/06 | | | | | | | | | |
| 2 | Develop data collection forms | 5 days | Tue 08/01/06 | | | | | | | | | |
| 3 | Gather data for reference tables | 3 days | Mon 08/14/06 | | | | | | | | | |
| 4 | Meet with stakeholders to agree upon key functionality | 2 days | Thu 08/17/06 | | | | | | | | | |
| 5 | Prototype development | 30 days | Mon 08/21/06 | | | | | | | | | |
| 6 | Adapt LEAD database as MS Access prototype | 5 days | Mon 08/21/06 | | | | | | | | | |
| 7 | User testing of core modules | 30 days | Mon 08/21/06 | | | | | | | | | |
| 8 | Prepare SOW for Web enabled components | 0.5 days | Mon 08/28/06 | | | | | | | | | |
| 9 | Write user's manual | 2 days | Mon 08/28/06 | | | | | | | | | |
| 10 | Import historical data from CAAC Access application | 2 days | Wed 08/30/06 | | | | | | | | | |
| 11 | Client server application development | 7.5 days | Mon 11/06/06 | | | | | | | | | |
| 12 | Migrate data from Access to MySQL | 0.5 days | Mon 11/06/06 | | | | | | | | | |
| 13 | Develop additional analytical reports & charts | 2 days | Mon 11/06/06 | | | | | | | | | |
| 14 | Develop service projection module | 2 days | Wed 11/08/06 | | | | | | | | | |
| 15 | Develop contracting module | 3 days | Fri 11/10/06 | | | | | | | | | |
| 16 | Evaluate web hosting options | 2.25 days | Thu 08/24/06 | | | | | | | | | |
| 17 | Visit TracNet | 0.25 days | Thu 08/24/06 | | | | | | | | | |
| 18 | Visit Terracom | 0.25 days | Fri 08/25/06 | | | | | | | | | |
| 19 | Obtain hosting quote | 1 day | Fri 08/25/06 | | | | | | | | | |
| 20 | Order web server and software | 30.5 days | Mon 08/28/06 | | | | | | | | | |
| 21 | software selection | 0.25 days | Mon 08/28/06 | | | | | | | | | |
| 22 | hardware specification | 0.25 days | Mon 08/28/06 | | | | | | | | | |
| 23 | Perpare RFQ and select vendor | 15 days | Tue 08/29/06 | | | | | | | | | |
| 24 | Configure server in Cambridge | 5 days | Tue 09/19/06 | | | | | | | | | |
| 25 | Ship to Kigali | 10 days | Tue 09/26/06 | | | | | | | | | |
| 26 | Develop Web components | 15.75 days | Mon 11/06/06 | | | | | | | | | |
| 27 | Prepare detailed wire-frames | 2 days | Mon 11/06/06 | | | | | | | | | |
| 28 | Configure Apache web server | 0.25 days | Thu 11/09/06 | | | | | | | | | |
| 29 | Install CMS software | 0.25 days | Thu 11/09/06 | | | | | | | | | |
| 30 | Install MySQL | 0.25 days | Thu 11/09/06 | | | | | | | | | |
| 31 | Design security system | 1 day | Thu 11/09/06 | | | | | | | | | |
| 32 | Develop data entry modules | 3 days | Fri 11/10/06 | | | | | | | | | |

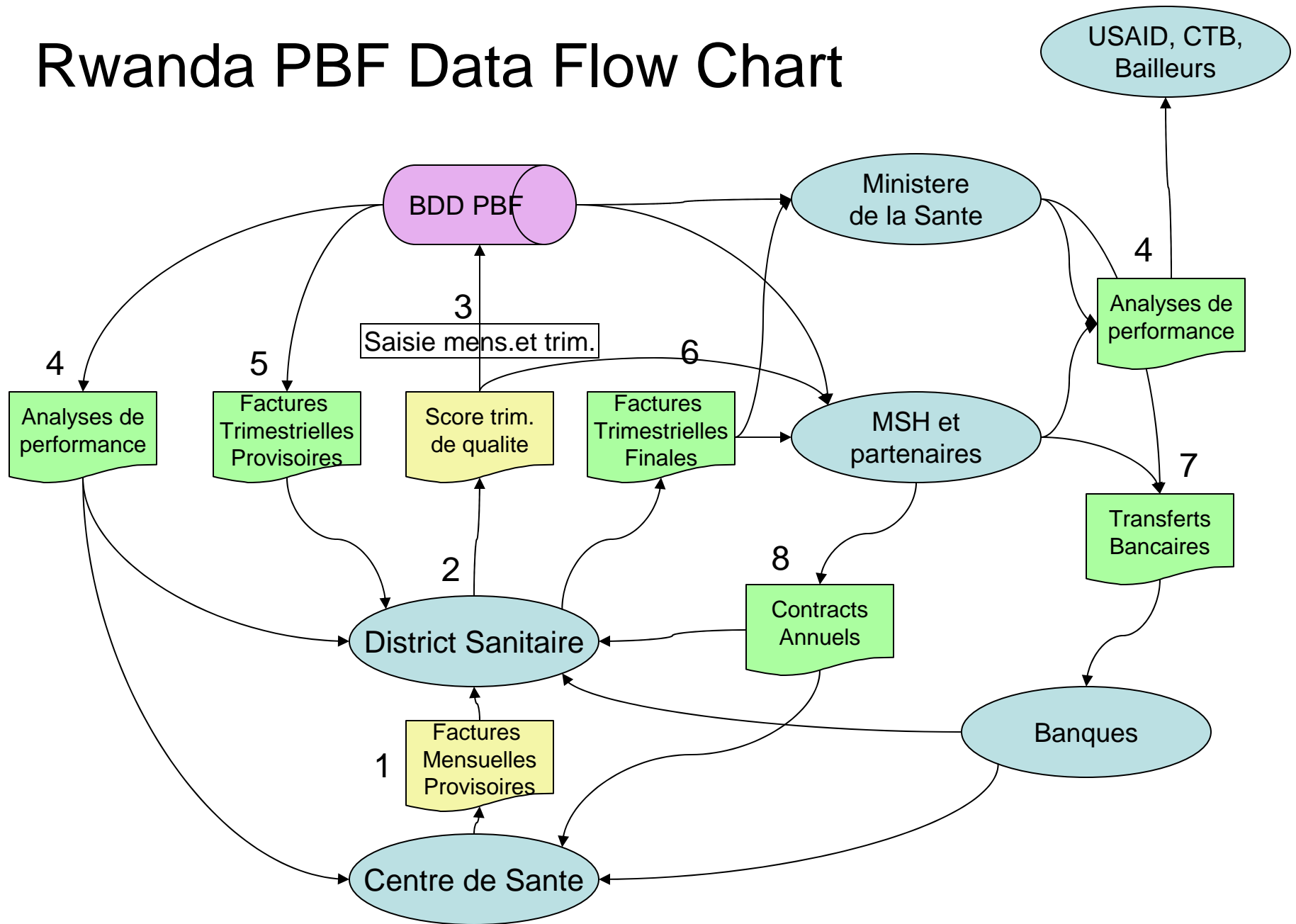
| | | | | | | |
|---|----------|--|-----------------|--|--------------------|--|
| Project: PBFDatabaseDevelopment.m Date: Fri 09/29/06 | Task | | Milestone | | External Tasks | |
| | Split | | Summary | | External Milestone | |
| | Progress | | Project Summary | | Deadline | |

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|----|---|---------------|---------------------|---------|-------|-------|-----------|-------|------------|-------|----------|-------|
| | | | | 06/25 | 07/16 | 08/06 | 08/27 | 09/17 | 10/08 | 10/29 | 11/19 | 12/10 |
| 33 | Design web portal | 3 days | Wed 11/15/06 | | | | | | | | | |
| 34 | Develop tabular report generator | 2 days | Mon 11/20/06 | | | | | | | | | |
| 35 | Develop interactive graphs | 2 days | Wed 11/22/06 | | | | | | | | | |
| 36 | Determine mechanism to synchronize web data with client-serve | 1 day | Fri 11/24/06 | | | | | | | | | |
| 37 | Training | 7 days | Mon 11/27/06 | | | | | | | | | |
| 38 | Prepare training guide | 2 days | Mon 11/27/06 | | | | | | | | | |
| 39 | Train central level staff in database management tasks | 3 days | Wed 11/29/06 | | | | | | | | | |
| 40 | Train Health district staff in use of Web application | 2 days | Mon 12/04/06 | | | | | | | | | |



| | | | | | | |
|---|----------|--|-----------------|--|--------------------|--|
| Project: PBFDatabaseDevelopment.m Date: Fri 09/29/06 | Task | | Milestone | | External Tasks | |
| | Split | | Summary | | External Milestone | |
| | Progress | | Project Summary | | Deadline | |

Rwanda PBF Data Flow Chart





Les nouvelles

Les nouvelles sur l'Approche Contractuelle:

A la fin du mois de juin 2006, 145 formations sanitaires faisaient partie de l'approche contractuelles (plus qu'un tiers des formations sanitaire dans le pays).

Une analyse récente a compare la performance d'une échantillon des formations sanitaires participants avec des non-participants a remarque une amélioration nette de performance dans ce premier group sur plusieurs dimensions.

etc.....

Saisie données

- Facture PMA
- Facture VIH
- Score Qualité

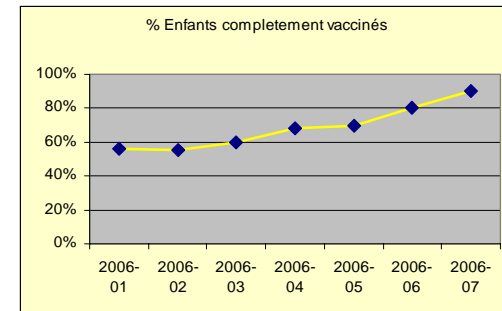
Tableaux d'analyse

Graphiques

Discussions/Suggestions

Calendrier

Courbe du Mois:



La couverture vaccinale pour les enfants <2 ans suit une bonne allure. La journée nationale de vaccination du 4 juin a contribuer a cette tendance.....



Ministère de la Santé : Rwanda

Base de Données de l'Approche Contractuelle (BDDPBF)

Les nouvelles

Saisie des Factures Mensuelles PMA:

Formation Sanitaire: **Biruyi/RUTSIRO (CS)** Mois: **4**

Type de document: **Facture PMA MSH** Date Saisie: **09/13/2006** Année: **2006**

Saisie Indicateurs Remarques

| Indicateur | Quantité | Barème Unitaire | Montant |
|--|----------|-----------------|---------------|
| 1 CPC : Nouveaux cas | 23 | 100 | 2,300 |
| 2 CPN : Nouveaux cas | 0 | 50 | 0 |
| 3 CPN : Femmes avec 4 visites | 33 | 200 | 6,600 |
| 4 CPN : VAT 2 - 5 | 3 | 250 | 750 |
| 5 CPN : 2ème prise de Sulfadoxine | 44 | 250 | 11,000 |
| 6 CPN : Grossesses à risque Referees avant le Sieme mois | 0 | 1,000 | 0 |
| 7 Suivi de la croissance : enfant de 11 a 59 mois consultés (CS) | 0 | 100 | 0 |
| 8 Suivi de la croissance : enfant de 11 a 59 mois consultés (PNBC) | 0 | 100 | 0 |
| 9 Malnutris : Hospitalise sortant guéri ou réfère | 0 | 2,000 | 0 |
| 10 PF : Nouvelle utilisatrice | 0 | 1,000 | 0 |
| 11 PF : Utilisatrice en fin du mois | 0 | 100 | 0 |
| 12 Vaccination : Enfant complètement Vaccine | 0 | 500 | 0 |
| 13 Accouchement assiste au CS | 0 | 2,500 | 0 |
| 14 Accouchement : référence d'urgence pour accouchement | 0 | 2,500 | 0 |
| 15 Référénces d'urgence | 0 | 1,000 | 0 |
| Montant Total: | | | 20,650 |

Saisie données

- Facture PMA
- Facture VIH
- Score Qualité

Tableaux d'analyse

Graphiques

Discussions/Suggestions

Calendrier





Ministère de la Santé : Rwanda

Base de Données de l'Approche Contractuelle (BDDPBF)

[Les nouvelles](#)

Saisie Rapport de Qualité de Service:

[Saisie données](#)

- Facture PMA
- Facture VIH
- Score Qualité

[Tableaux d'analyse](#)

[Graphiques](#)

[Discussions/Suggestions](#)

[Calendrier](#)

Formation Sanitaire: Trimestre:
 Type de document: Date Saisie: Année:

Saisie Indicateurs

Rapport Qualite Detail

| Indicateur | Points Disponibles | Points Attribués | Ecart | % |
|---|--------------------|------------------|-------|------------|
| 1 Organisation générale et Participation Communautaire | 14 | 10 | -4 | 71% |
| 2 Hygiène du Centre de Santé | 10 | 7 | -3 | 70% |
| 3 Consultation Externe | 26 | 22 | -4 | 85% |
| 4 Hospitalisation | 16 | 16 | 0 | 100% |
| 5 Accouchement | 20 | 12 | -8 | 60% |
| 6 Consultation Périnatale | 21 | 0 | -21 | 0% |
| 7 Laboratoire | 12 | 0 | -12 | 0% |
| 8 Vaccination | 24 | 0 | -24 | 0% |
| 9 Planification Familiale | 17 | 0 | -17 | 0% |
| 10 Tuberculose | 26 | 0 | -26 | 0% |
| 11 Gestion Médicaments Essentiels | 32 | 0 | -32 | 0% |
| 12 Gestion Financière | 27 | 0 | -27 | 0% |
| 13 Surveillance de la croissance et Réhabilitation Nutritionnelle | 26 | 0 | -26 | 0% |
| Total | 86 | 67 | | 78% |

