

Requirements Document

SMS Reporting of CHW Supply Chain Data Elements

Kenneth Børtveit, Intern, MSH

March 13, 2014

Contents

1	Background	2
1.1	Current System	2
1.2	Problem to be solved	2
2	Proposed Solution	4
2.1	Use Cases	4
2.1.1	Notifications	4
2.1.2	Reminders	5
2.1.3	Feedback	6
2.1.4	Reporting	7
3	Test Environment	10
3.1	Local Testing with Windows	10
3.1.1	Setting environment variables	10
3.1.2	Create test user	10
3.1.3	Create data elements	10
3.1.4	Create data set	10
3.1.5	Assign data set to organization unit	10
3.1.6	Assign user to organization unit	10
3.1.7	Create SMS command	10
3.1.8	Test with integrated 'testSMS.action'	10

Chapter 1

Background

1.1 Current System

The users in focus for this document is the community health workers (CHW's) at a village level in Rwandas administrative division. It is essential for the CHW's to have access to essential drugs and supplies in order to provide uninterrupted care.

1.2 Problem to be solved

At this time the HMIS does not have access to data at a village level on essential drugs. The HMIS would like to have access to this data and be able to provide the following services.

#1 Send SMS and email notifications based on rules.

#2 Send SMS and email reminder if a report is more than 4 days delayed.

#3 If user data does not map correctly user feedback should be provided.

#4 A functional SMS based reporting system.

Community Health Worker medicines/supply chain

1 of 1

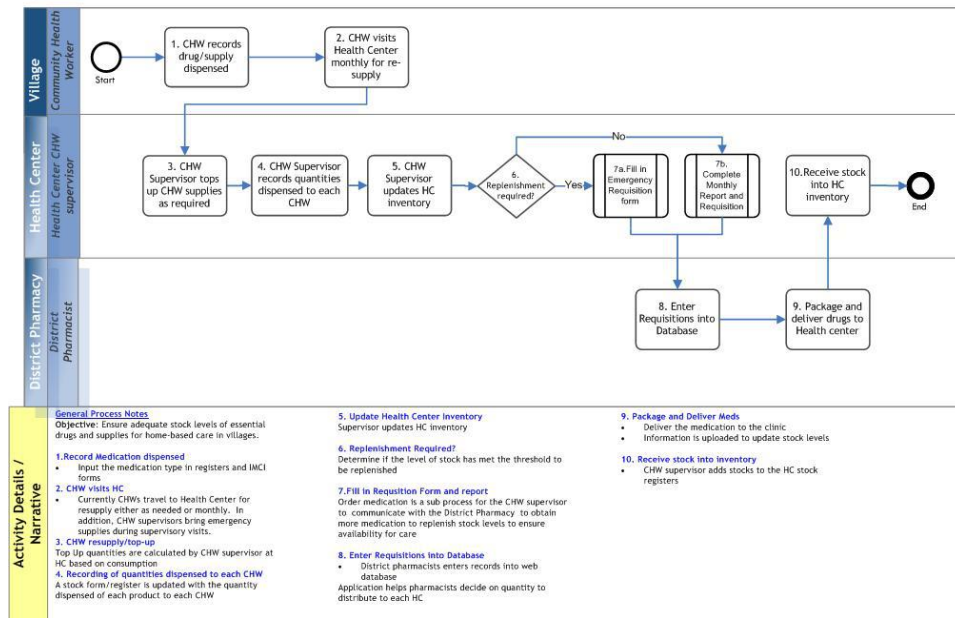


Figure 1.1: Community Health Worker Supply Chain

Chapter 2

Proposed Solution

2.1 Use Cases

2.1.1 Notifications

Based on collected data and the prediction algorithm, 'Cell CHW Supervisor', 'HC CHW Supervisor' and 'District Pharmacist' will be notified of how much of the essential drugs is needed at the level below their own in the administrative hierarchy for a given period.

Send SMS and Email Notifications	
Goal:	Create orders
Primary Actor:	System
Secondary Actor:	Cell CHW Supervisor HC CHW Supervisor District Pharmacist
Main Success Scenario:	1. CHW reports distributed and stock values. 2. System processes report. 3. System calculates essential drugs needed for each level. 4. System sends orders to cell, sector and district.
Extensions:	

Table 2.1: Textual Use Case: Send SMS and Email Notifications

2.1.2 Reminders

If a 'CHW' report is more than 5 days late the 'System' should send a reminder to the 'CHW' responsible. If the report is more than 10 days late, the 'System' will send a reminder to the 'Cell CHW Supervisor' responsible for the same village.

Send SMS and Email Reminders	
Goal:	Send reminder
Primary Actor:	System
Secondary Actor:	CHW Cell CHW Supervisor
Main Success Scenario:	<ol style="list-style-type: none">1. CHW misses report deadline.2. 5 days goes by.3. System sends reminder by email and SMS.4. Another 5 days goes by.5. System sends reminder by email and SMS.
Extensions:	

Table 2.2: Textual Use Case: Send SMS and Email Reminders

2.1.3 Feedback

Given that a 'CHW' has reported data that does not map correctly, a message containing what went wrong and the necessary steps in order to correct the report will be sent back to the 'CHW'.

Send Report Feedback	
Goal:	Process SMS message
Primary Actor:	System
Secondary Actor:	Community Health Worker
Main Success Scenario:	<ol style="list-style-type: none">1. CHW reports data incorrectly by SMS.2. System receives SMS.3. SMS triggers feedback message.4. CHW corrects message and re-sends report.5. System processes SMS.6. System updates database.
Extensions:	

Table 2.3: Textual Use Case: Send Report Feedback

2.1.4 Reporting

A 'CHW' will be able to report by SMS, stock and distributed values of essential drugs at a village level in the administrative hierarchy.

Report Using SMS	
Goal:	Update Database
Primary Actor:	Community Health Worker
Secondary Actor:	System
Main Success Scenario:	<ol style="list-style-type: none">1. CHW reports stock and distributed values of essential drugs.2. System receives SMS.3. System processes SMS.4. System updates database.5. System sends confirmation SMS to CHW.
Extensions:	

Table 2.4: Textual Use Case: Report Using SMS

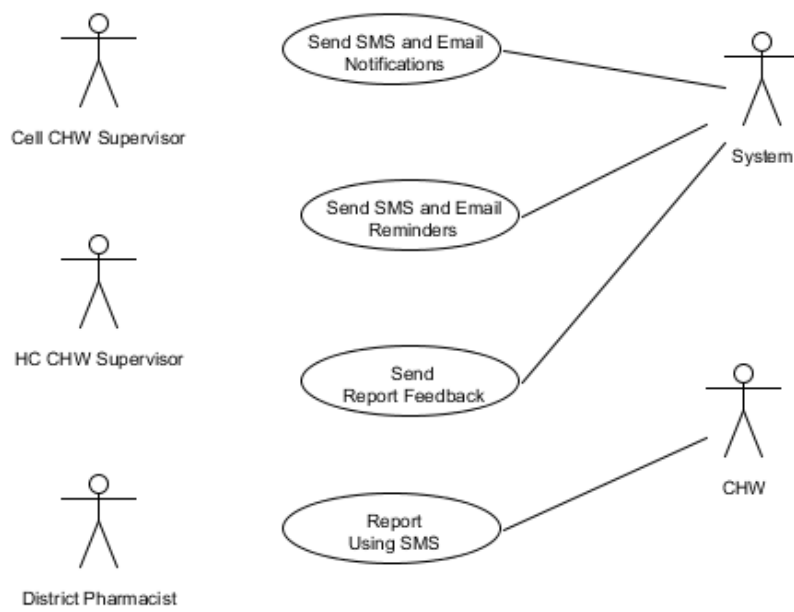


Figure 2.1: Use Case Diagram

Community Health Worker medicines/supply chain

1 of 1

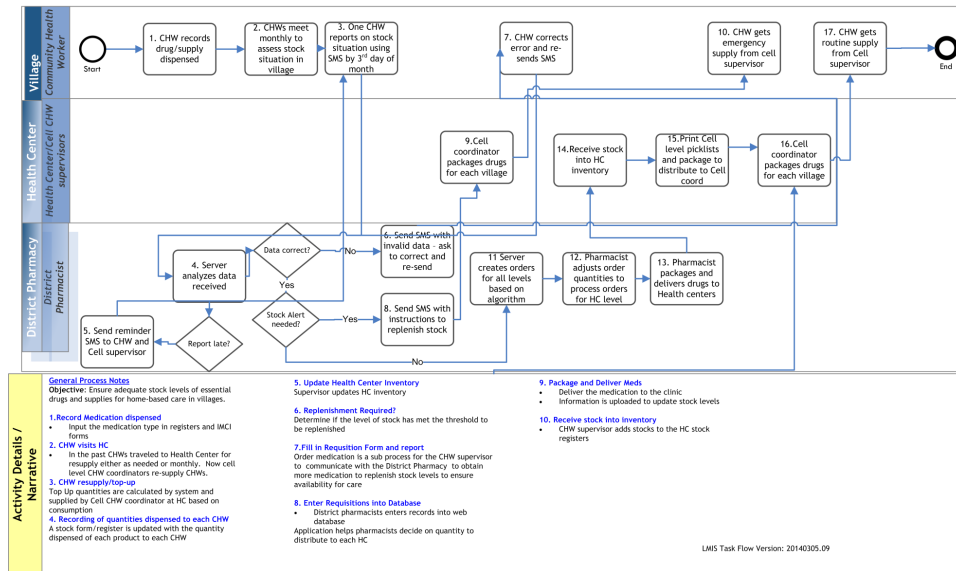


Figure 2.2: Community Health Worker Supply Chain

Chapter 3

Test Environment

3.1 Local Testing with Windows

3.1.1 Setting environment variables

Windows requires some of the environments variables to be set.

3.1.2 Launch DHIS2 with Tomcat

3.1.3 Create test user

3.1.4 Create data elements

3.1.5 Create data set

3.1.6 Assign data set to organization unit

3.1.7 Assign user to organization unit

3.1.8 Create SMS command

3.1.9 Test with integrated 'testSMS.action'

Operating System:	Windows 7 Professional Service Pack 1
Processor:	Intel(R) Core(TM) i7-2630QM CPU @ 2.00GHz
RAM:	4.00GB
System type:	64bit
Web Server:	Apache Tomcat Version 8.0.3
Database:	PostgreSQL 9.2.4
Software:	DHIS2 2.14

Table 3.1: System Description

Environment Variables	
PATH:	C:\Program Files\Java\jdk1.7.0_25\bin; C:\Program Files\Apache Software Foundation\apache-maven-3.1.0\bin; C:\Program Files\PostgreSQL\9.2\bin;
DHIS2_HOME:	C:\Program Files\Apache Software Foundation\apache-tomcat-8.0.3\conf
JAVA_HOME:	C:\Program Files\Java\jdk1.7.0_25
JAVA_OPTS:	-Xms512m -Xmx1024m -XX:MaxPermSize=256M
M2:	C:\Program Files\Apache Software Foundation\apache-maven-3.1.0\bin
M2_HOME:	C:\Program Files\Apache Software Foundation\apache-maven-3.1.0
MAVEN_OPTS	-Xms512m -Xmx1024m -XX:MaxPermSize=256M

Table 3.2: Example: Environment Variables