

LESSONS LEARNED

OpenLMIS Malawi UAT
May 2017







Scenario 9 G2

* Instructions had approved equality
which was not applicable for
material program also in S.P

Scenario 10

* The sub zero reject form
status is "initiated" not
"Submitted" not yet start

* Rejection comment not visible

mark also present in the
offline column → also Scenario 9.

No sign of ...

Emergency

Facility: 2A2771 - Toolba
 Operated by: Government of Malawi
 Region: Zomba
 Reporting period: 01/01/2017 - 31/03/2017

Comments: Add comment

No comments added

Full supply products: Not full supply products

14p 28 | Items All changes are saved

Site	Code	Productname	UoF	Open bal	Closed bal	Less Adj	Qty used	100	Qty re	Adj seen	Ord qty
Tablets & Capsules											
01	GP0338	Aryclox 200 mg	Pack of 1			0					
01	A000	Aryclox 400mg	100			0					
01	00005	Adrenaline 1/100, 1ml	Each			0					
01	A0210	Alprazolam 200mg	Each			0					
01	A0568	Azidothiazine 400mg	Each			0					

Done with items Submitted

A woman with long dark hair, wearing a light-colored t-shirt and a patterned skirt, stands to the right of the screen. She is holding a black microphone in her right hand and gesturing with her left hand towards the table on the screen. She appears to be presenting or explaining the data.



A wooden podium or desk in the foreground. On top of it, there is a laptop computer, several water bottles, a glass of pink liquid, and some papers. The scene is dimly lit, with light coming from a window behind the screen.

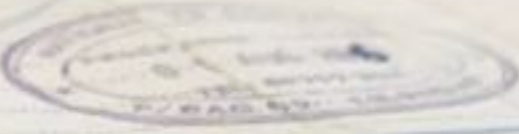
SCENARIO 9: APPROVE A SINGLE (EMERGENCY) LHM FORM

PDF Complete



Facility Name: **ST PETER'S** District: **LIKOMA** Month: **APRIL 2017**

Code No.	Item	Unit of Issue	Closing Balance (Stock on Hand)	Issues	(Inv) Requisition	GRN Submissions	Capacity Used in Month	Stocked (In-Caps)	Inventory Shortfall
(A) TABLETS/CAPSULES									
GF023a	Acylovir 200 mg	Tablet	0	0	0	0	0	425	0
A0008	Acylovir 400mg	Tablet	2000	0	0	0	0	425	0
A0230	Albendazole 200mg	Tablet	92000	0	0	0	0	0	0
A0506	Albendazole 400mg	Tablet	0	0	0	0	0	60	0
A0026	Allopurinol 100mg	Tablet	1000	0	0	0	0	0	0
TBD	Amlodipine 5mg	Tablet	0	0	0	0	0	0	60
TBD	Amlodipine 10mg	Tablet	0	0	0	0	0	0	60
A0028	Aminophylline 100mg	Tablet	17000	0	0	0	0	5000	0
A0034	Amitriptyline 25mg	Tablet	3300	0	0	0	0	200	0
A0059	Amoxicillin 250mg	Tablet/Caps	60000	3000	0	0	2000	24000	0
TBD	Amoxicillin 250mg Dispersible tablets	Tablet	4300	0	0	0	100	100	0
GF0243	Amoxicillin w/ Clavulanic Acid, 500mg/125mg	Tablet/Caps	0	0	0	0	0	0	60
A0046	Aspirin 300mg	Tablet	75000	0	0	0	1000	3000	0
TBD	Atenolol 50mg	Tablet	0	0	0	0	0	0	240
TBD	Atenolol 100mg	Tablet	3000	0	0	0	0	0	60
TBD	Azithromycin 500mg	Tablet	0	0	0	0	0	0	0
TBD	Azithromycin 250mg	Tablet	3048	0	0	0	0	0	240
A0067	Benzhexol 5mg	Tablet	2000	0	0	0	0	0	0
A0069	Bisacodyl 5mg	Tablet	8000	0	0	0	0	0	0
TBD	Captopril 25mg	Tablet	5000	0	0	0	0	0	0



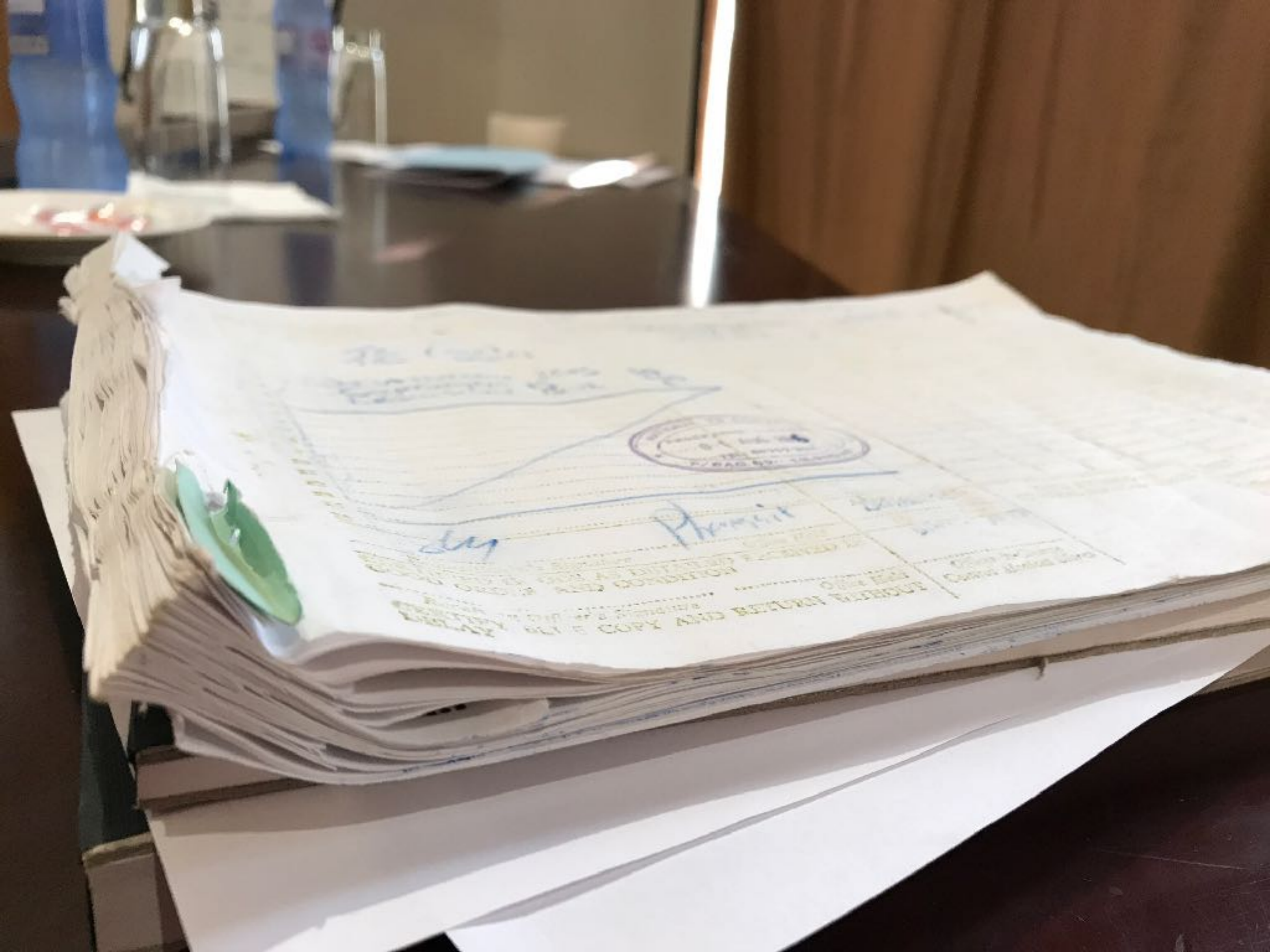
My

Pharmacist

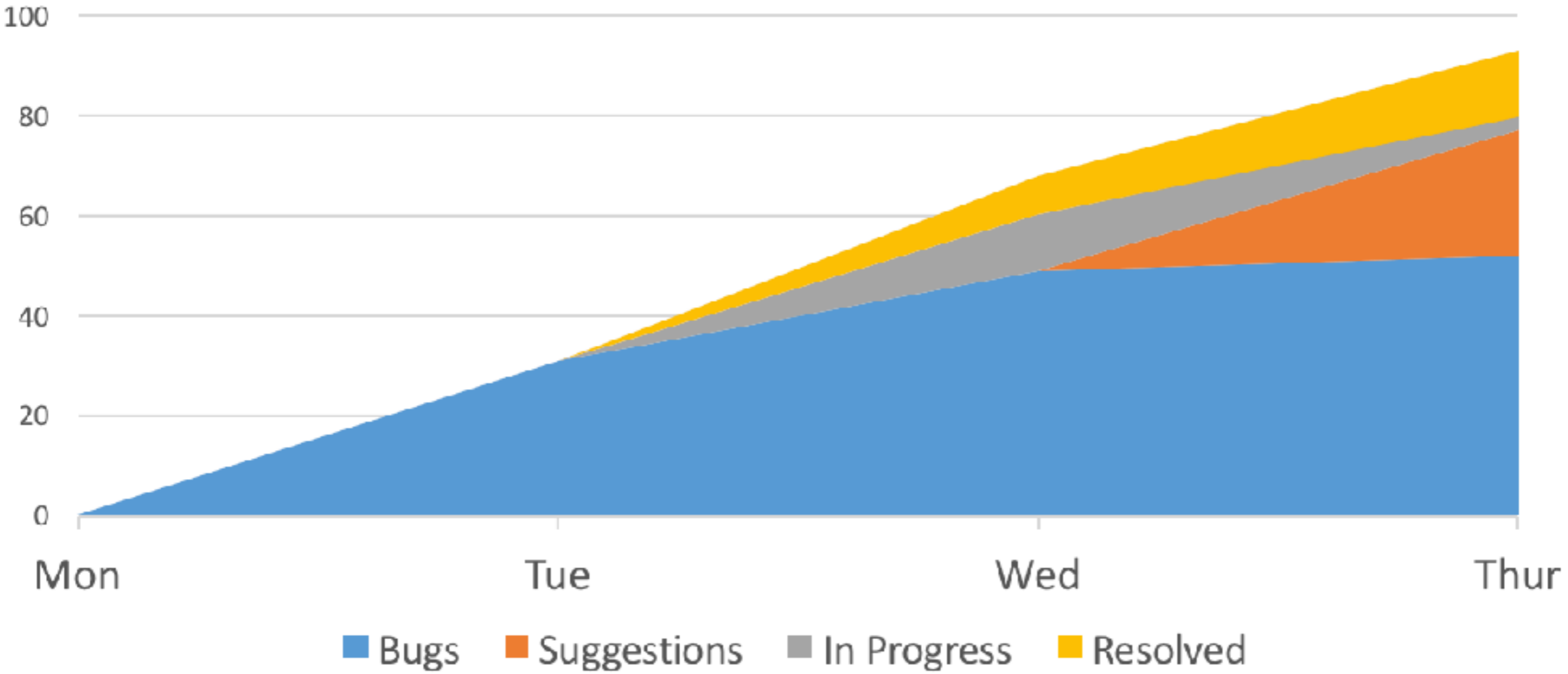
Signature of Pharmacist
Date of Issue
Expiration Date

THIS IS A COPY AND RETURN THROUGH

Office of the State Pharmacist
Current Address



Issues Found



- **different supply lines and fulfillment cycles by program**
EM comes from CMST 3 regional warehouses (north, central, south) using SAGE ERP; programs have 1-month and 3-month pull and push cycles; using LMIS Forms as reporting tool not ordering
- **different approval process by program**
EM goes thru MOH district process with budget rationing monthly; 1-step and 2-step; some go to program managers
- **30 districts**
do data entry monthly of all 5 programs for all facilities



Health Facilities ~800

keep their paper "LMIS Forms":
5 monthly programs
(Essential Meds, HIV, TB, Family
Planning, Malaria)

LESSONS

1. Buggy

2. Brittle

3. Slow

4. Hard to use

1. BUGGY

Initiate LMIS Form

Facility type

- My facility
- Supervised facility

Facility *

Program *

- Type**
- Regular
 - Emergency

Period(s)	Start date	End date	LMIS Form Status	Actions
Jan2012	01/01/2012	31/01/2012	Not yet started	<input type="button" value="Proceed"/>
Feb2012	01/02/2012	29/02/2012	Previous LMIS Form pending	
Mar2012	01/03/2012	31/03/2012	Previous LMIS Form pending	
Apr2012	01/04/2012	30/04/2012	Previous LMIS Form pending	
May2012	01/05/2012	31/05/2012	Previous LMIS Form pending	
Jun2012	01/06/2012	30/06/2012	Previous LMIS Form pending	
Jul2012	01/07/2012	31/07/2012	Previous LMIS Form pending	
Aug2012	01/08/2012	31/08/2012	Previous LMIS Form pending	
Sep2012	01/09/2012	30/09/2012	Previous LMIS Form pending	

Cannot initiate requisition MW-177

Home / LMIS Forms / View LMIS Form

LMIS Form for TB (Health Centre)

Regular	Facility KL11011 - Mtunthama	Operated by Government of Malawi	Region Kasungu	Reporting period 01/01/2012 - 31/01/2012
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Comments Add comment

No comments added

The screenshot shows a web browser's developer console with the 'Network' tab selected. A list of network requests is visible, with the first one selected. The console shows the following error details:

```

{timestamp: "2017-05-17T17:26:13.566+0000", status: 400, error: "Bad Request",...}
error: "Bad Request"
exception: "org.springframework.http.converter.HttpMessageNotReadableException"
message: "Could not read document: (Can not deserialize instance of org.openlmis.utils.PageImpRepresentation out of START_ARRAY token at [Source: ...])"
path: "/api/requisitions/1b163c48-c0b1-4db5-8b1c-9c76806a0774"
status: 400
timestamp: "2017-05-17T17:26:13.566+0000"

```

Cannot submit or authorize MW-225

The screenshot shows a web browser window with the URL `34.249.116.186/#!/requisitions/convertToOrder?filterBy=all&filterValue=&page=0&size=10`. The page displays a table of requisitions with columns for Program, Facility, District, and Date. A red error banner at the top right reads "Error occurred". A teal "Convert to order" button is visible at the bottom right of the table.

	Program	Facility	Dist			
<input type="checkbox"/>	TB	KU1008 - Kasungu	Central East	May2017	01/05/20	▼ CMST - Cen Clear selection
<input type="checkbox"/>	TB	KU1008 - Kasungu	Central East	May2012	01/05/20	▼ CMST - Cen Clear selection
<input type="checkbox"/>	TB	KU1008 - Kasungu	Central East	Mar2012	01/03/20	▼ CMST - Cen Clear selection

The network console shows the following error response:

```
{
  "timestamp": "2017-05-16T28:55:11.524+0000",
  "status": 500,
  "error": "Internal Server Error",
  "exception": "java.lang.NullPointerException",
  "message": "No message available",
  "path": "/api/requisitions/convertToOrder"
}
```

Cannot convert to order MW-174

2. BRITTLE

Home /

Initiate LMIS Form

Facility type

My facility
 Supervised facility

Program *

▼ Essential Meds

Facility *


▼ Zomba

Type

Regular
 Emergency

Search

Period(s)	Start date	End date	LMIS Form Status	Actions
Select required fields. Please contact the Admin if no periods are available.				



Internal application error
Please check console logs for more information.

Close

pharmacy1c

Logout

Error on search for Emergency MW-212

(View Orders would not appear on the menu unless you also gave the user all 3 Requisition rights)

View Orders rights do not work MW-176

(e.g., Facility users from North Region were only shown the Southern Region warehouse and vice versa)

Wrong warehouses for convert to order

2. BRITTLE

3. SLOW

OpenLMS

34.249.116.186/#!/requisitions/initiate?supervised=false&program=e1e87db1-3b4a-4c6b-b2e9-f41268bd5dbc&facility=22fca8f8-c522-450e-a762-ea229c8577...

My facility
 Supervised facility

Facility *

▼ Mulanje

Program *

▼ Essential Meds

Type

Regular
 Emergency

Search

Period(s)	Start date	End date	LMIS Form Status	Actions
Jan2012	01/01/2012	31/01/2012	INITIATED	Proceed
Feb2012	01/02/2012	29/02/2012	Previous LMIS Form pending	
Mar2012	01/03/2012	31/03/2012	Previous LMIS Form pending	
Apr2012	01/04/2012	30/04/2012	Previous LMIS Form pending	
May2012	01/05/2012	31/05/2012	Previous LMIS Form pending	
Jun2012	01/06/2012	30/06/2012	Previous LMIS Form pending	
Jul2012	01/07/2012	31/07/2012	Previous LMIS Form pending	
Aug2012	01/08/2012	31/08/2012	Previous LMIS Form pending	
Sep2012	01/09/2012	30/09/2012	Previous LMIS Form pending	

Elements Console Sources Network Performance Memory Application Security Audits

View: [Icons] Preserve log Disable cache Offline No throttling

20000ms 40000ms 60000ms 80000ms 100000ms 120000ms 140000ms 160000ms 180000ms 200000ms 220000ms 240000ms 260000ms

This search took 40 seconds! There are roughly 60 periods, but the periods do not even have data.

Name	Method	Status	Type	Initiator	Size	Time	Waterfall	3.3 min	4.0
8006f562-685b-42f1-9cc8-2a043fa5100e?access_token=...	GET	200	xhr	openlms.js:40 Script	1.6KB 3.5KB	476ms 476ms			
periodsForInitiate?access_token=ebcbcd06-53e5-4c50-...	GET	200	xhr	openlms.js:40 Script	3.7KB 29.9KB	2.15s 897ms			
search?access_token=ebcbcd06-53e5-4c50-a5ed-330e...	GET	200	xhr	openlms.js:40 Script	119KB 1.3MB	39.85s 19.19s			

14 / 21 requests | 128KB / 128KB transferred

Requisition period search slow MW-164

Need Biz Internet in PH?
We supply Fiber to Businesses.

We operate in The Philippines and our Support is World Class!



Your internet speed is not the only reason for a slow Mac

Scan for issues and speed up your Mac

[START NOW](#)

▲ **Telekom Networks Malawi**
Lilongwe
[CHANGE SERVER](#)

AGAIN

👤 **Skyband**
41.75.124.1
★★★★★

📶 **PING** 74 ms 📶 **DOWNLOAD** 1.55 Mbps 📶 **UPLOAD** 0.19 Mbps **SHARE THIS RESULT**

[🔗](#) [🐦](#) [f](#) [⋮](#)

On hotel wifi from Skyband

Describe your overall satisfaction with your current internet service

[SUBMIT](#)

SLOW MAC PERFORMANCE?

Run a test to identify issues and speed up your Mac

[START NOW](#)

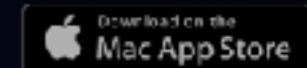
Try Speedtest® for Mac
Free, quick, easy to use



by OOKLA



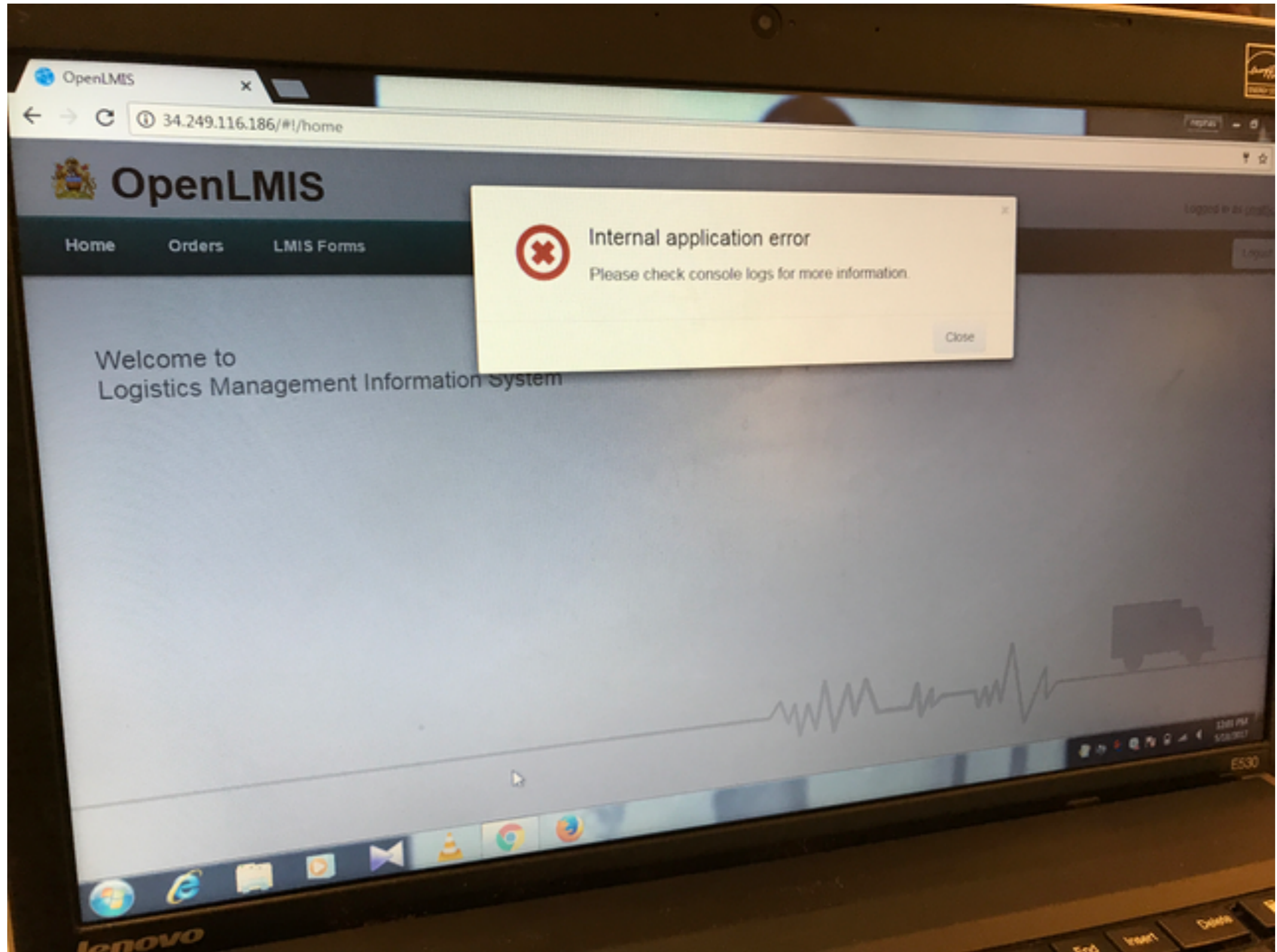
Try Speedtest for macOS
Free, quick, easy to use



by OOKLA

3. SLOW

- MW-164 Requisition period search slow
- MW-165 Requisition initiate slow
- MW-166 Requisition submit slow
- MW-167 Requisition authorize slow
- MW-171 Requisitions > View search is slow
- MW-232 Convert to Order search is slow



Convert to Order search is slow MW-232

4. HARD TO USE

(All Requisition screens have no status indicator.
Frequent confusion about why/when different buttons at bottom.)

Viewing a Requisition shows no Status MW-242

(Requisition that are Rejected show as "INITIATED".)

Rejected requisitions not indicated MW-244

Comments Add comment

No comments added

Full supply products: Not full supply products:

View All | 2008 All changes are saved

Strip	Code	Product name	UoF	Open bal	Close bal	Less/Adj	Gty used	SCD	Gty rec	Adj con	Ord qty
Tablets & Capsules											
	01020	Acyclovir 200 mg	Pack of 1	<input type="text"/>	<input type="text"/>	<input type="checkbox"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
	A0004	Acyclovir 400mg	PK	<input type="text"/>	<input type="text"/>	<input type="checkbox"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
	80006	Adrenaline 1/1000, 1ml	Each	<input type="text"/>	<input type="text"/>	<input type="checkbox"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
	A0230	Albendazole 200mg	Each	<input type="text"/>	<input type="text"/>	<input type="checkbox"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
	A0009	Albendazole 400mg	Each	<input type="text"/>	<input type="text"/>	<input type="checkbox"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
	A0028	Allopurinol 100mg	Each	<input type="text"/>	<input type="text"/>	<input type="checkbox"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
	P0130	Analgan capsule no. 1, non-painful	Each	<input type="text"/>	<input type="text"/>	<input type="checkbox"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
	P0136	Analgan capsule no. 2, non-painful	Each	<input type="text"/>	<input type="text"/>	<input type="checkbox"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
	A0000	Amoxicillin 100mg	Each	<input type="text"/>	<input type="text"/>	<input type="checkbox"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>

Save all changes Submit



Scrolling both ways/hard to check math MW-207

The screenshot displays the OpenLMIS interface. The main page is titled "LMIS Form for Essential Meds" and shows a form for adding products. A modal window titled "Add product" is open, featuring a "Category" dropdown set to "Tablets & Capsules", a "Product" dropdown set to "Select an option", and fields for "Quantity" and "Explanation". A "Cancel" button is visible at the bottom of the modal. A search dropdown is also open, showing a search bar and a list of 1080 results. The search results include:

- Endotracheal PVC tube 15mm adaptor size 3mm
- Cefotaxime 500mg, PFR
- ABX Pentra 60 Alphalyse
- Catheter Foley's retention 30cc FG 20
- Lignocaine gel 2%, 20g
- Filmscreen type 35cm x 43cm
- Bulbs microscope 6V 10W
- Forceps placenta (Willet's), screw joint, 190mm

The background page includes a "Print" button, an "Add comment" button, and a table with columns for "Product code", "Product name", "Qty requested", and "Qty requ". A "Sync with server" button is at the bottom left, and "Skip" and "Submit" buttons are at the bottom right. The total cost is shown as "Total LMIS Form cost: 144,000.00 MK".

Dropdowns: MW-217, 159, 186, 178, 214

POSSIBLE SOLUTIONS

1. Buggy

1. Testing.

Test UI? Tests with each bug fix?

2. Brittle

2. Manage configurability.

Docs? On-screen docs?

3. Slow

3. Optimize.

Test. (Idea for a rate-limit hotspot.)

4. Hard to use

4. Spend more time with our users.

"Rocket Surgery at a Distance"

THINK ABOUT IMPLEMENTORS

- Using the components; not ref-distro
 - versioning and release cycle
 - nginx, requisition; implementors need fast pull request and release timing, not 3-month cycle

THINK ABOUT IMPLEMENTORS

- Over-riding whole UI screens/files of code?
 - core would fix something but they would not get fix because they had "forked" that file
 - make sure our UI overrides are component-based, "atomic" or "granular"



UAT RESULTS

- Another round of UAT before sign-off to go live
- Possible timeline adjustment
- Lots of bugs to address
- Lots of master data issues
- Excitement and optimism by stakeholders about implementing OpenLMIS
 - "Made lemonade out of lemon peels and dirty water"