



# Implementation of SMS for Electronic Results Return

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## **The Zimbabwe Experience**



**01**

**Overview**

**02**

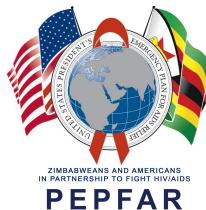
**SMS Electronic  
results return**

**03**

**SMS impact**

**04**

**Lessons learnt**



# Background

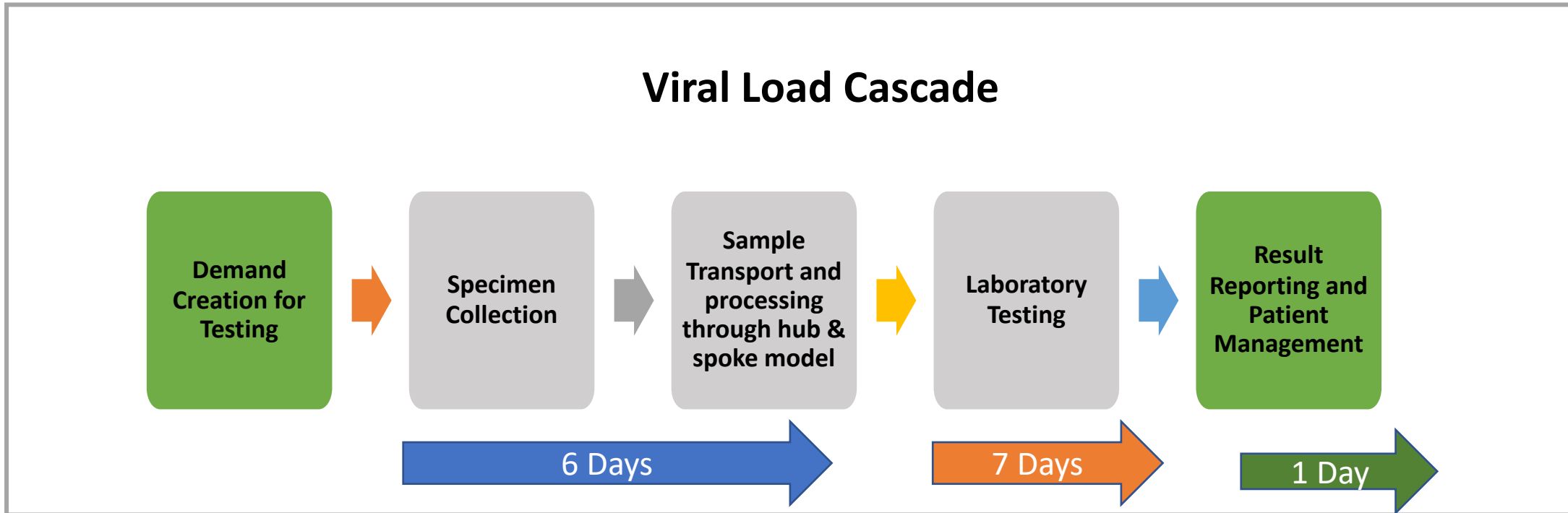
## COVID SMS Electronic results return (Alerts, results, notifications)



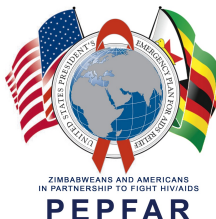
- In 2020 SMS result notification was implemented in response to the COVID-19 pandemic
- The issue of delayed VL result receipt at the facilities was identified during the Quality Improvement projects conducted through the LARC CLI initiative



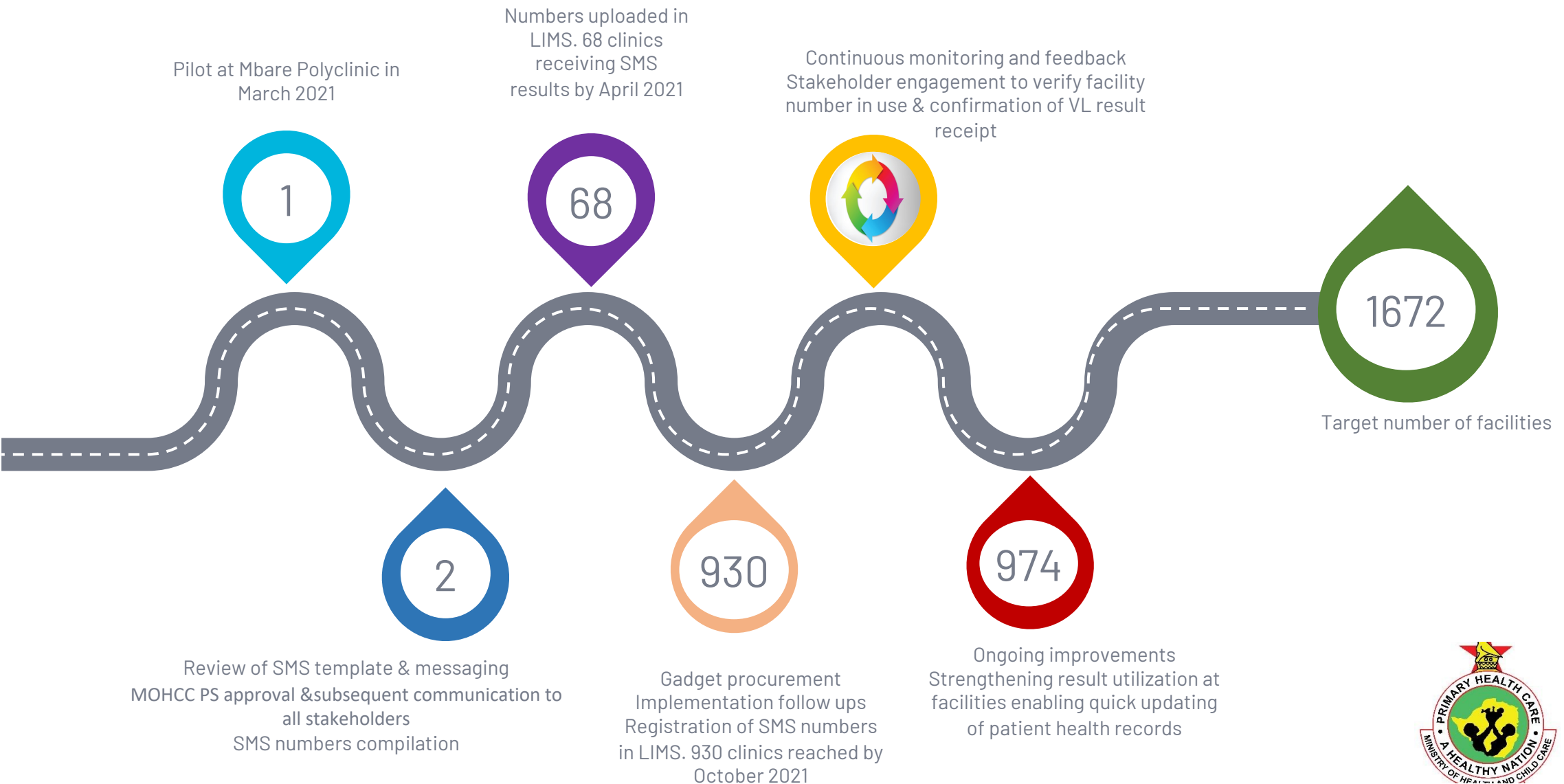
# VL Cascade TAT



- Low proportion of results arriving at the facilities within the then targeted VL result Total TAT of 28 days in 2020 prompted this
- SMS was first scaled up starting with a pilot at Mbare Polyclinic in Harare – a high volume site, to improve timely result utilization
- TAT targets reviewed downwards to 14 days necessitating the need to support timely clinical management



# Timeline on VL/EID SMS Implementation



# SMS Results Delivery System

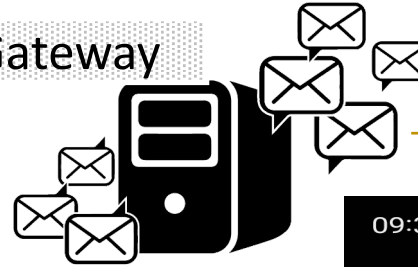


## SMS Electronic results return (Alerts, results, notifications)

SMS Gateway

SMS to Health Facility

SMS to Patient



Viral Load result for [redacted] (VTC1000)  
Male collected on 2022-04-04T00:00:00+02:00  
is 900 copies/ml. Test system

Normal Result



High Viral Load result for [redacted] (CT004)  
Male collected on 2022-06-06T00:00:00+02:00  
is 2000 copies/ml. Test system

Critical Result

Your results for specimen/s collected on 2022-04-26T23:00:00+02:00 are out. Kindly go to the clinic for review as soon as possible. Chinhoyi Visit

[redacted] specimen collected 2022-02-07T00:00:00+02:00 at Chinhoyi Visit was rejected at the lab due to a quality related issue kindly rebleed the client. Specimen too old for processing

Sample Rejection

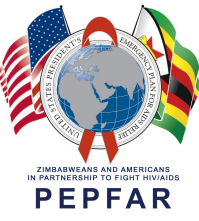
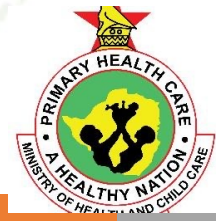
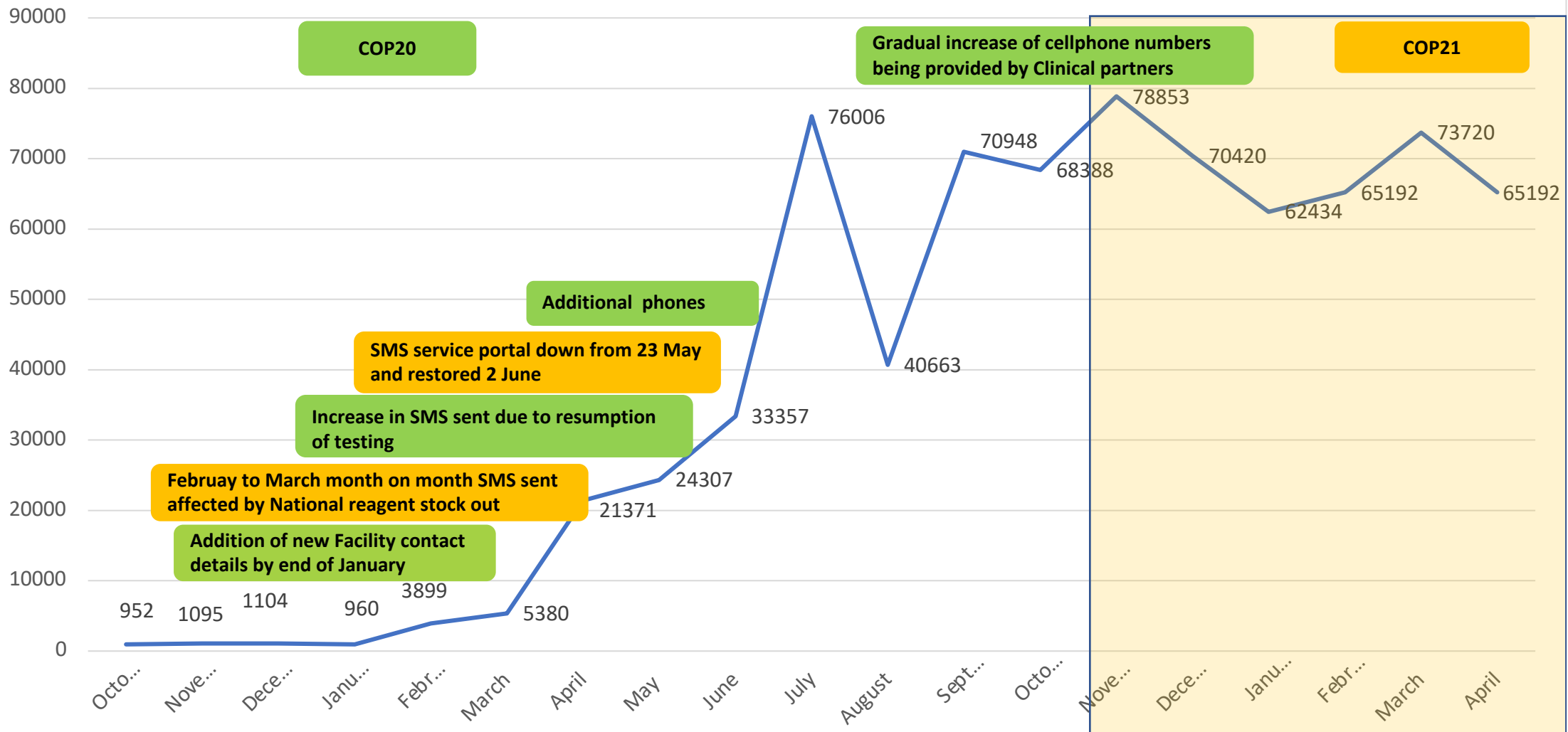
[redacted] you are requested to report to Chinhoyi Visit for a rebleed for the test request bled on 2022-02-07T00:00:00+02:00





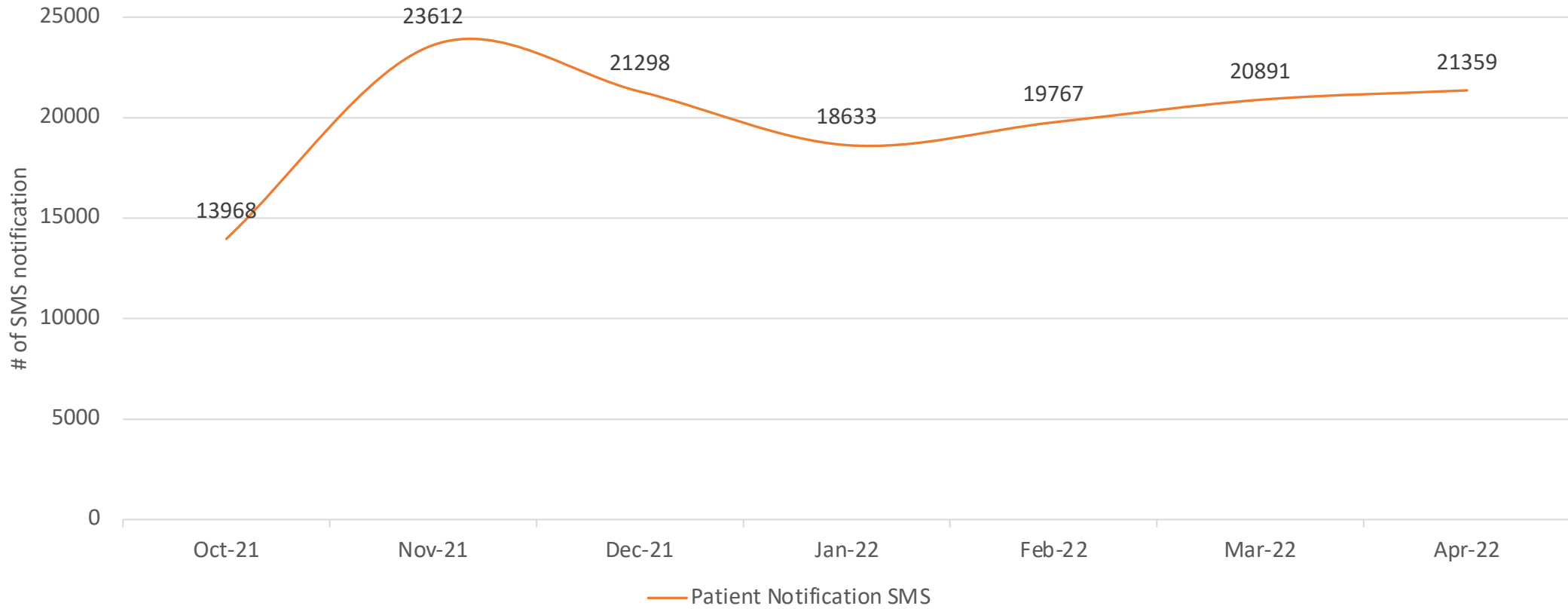


# Electronic Results Return: VL SMS sent from October 2020 - April 2022





Number of SMS Sent to Patients

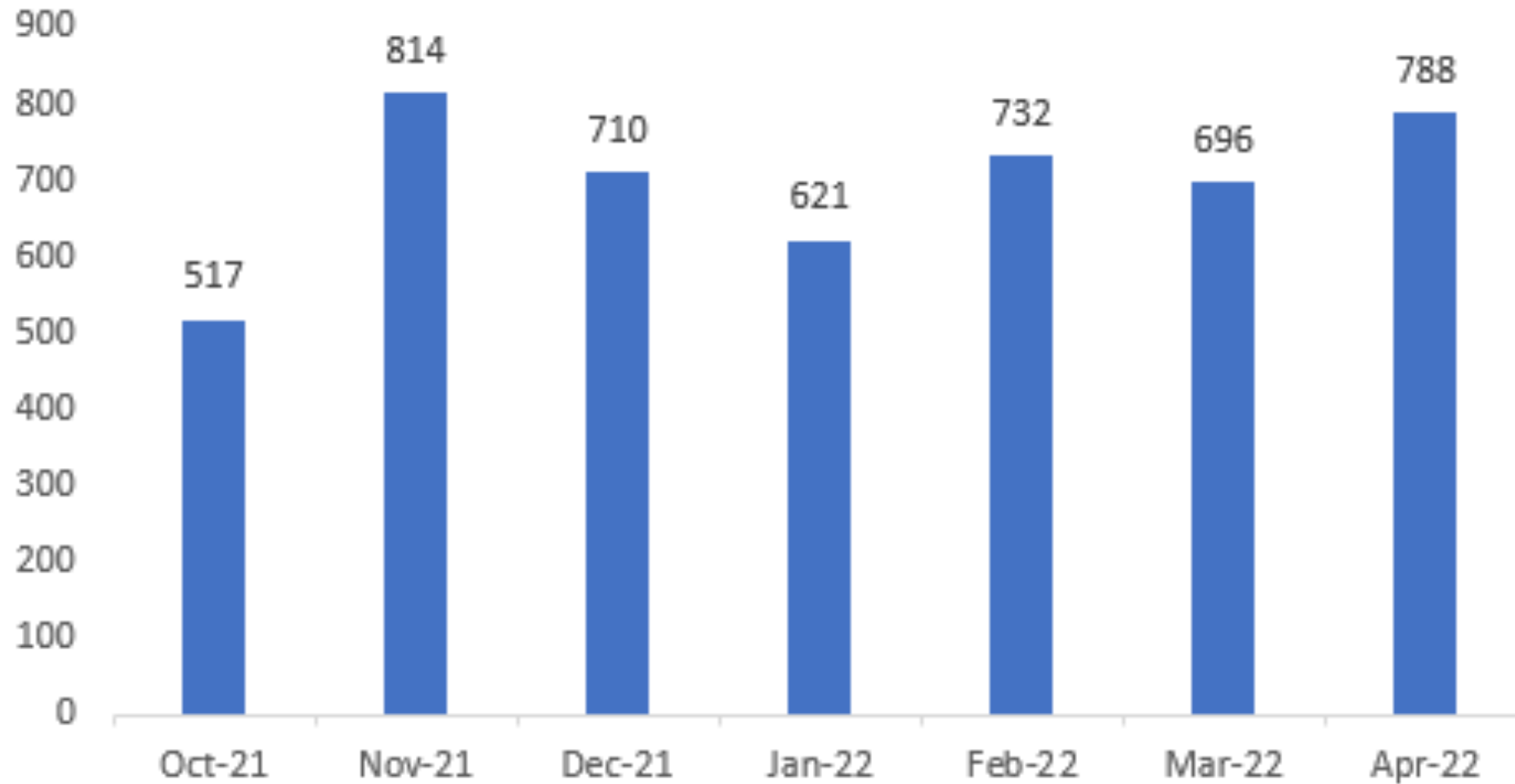


**The gap between health facility and patient notifications maybe due to failure to send SMS as a results of the following reasons**

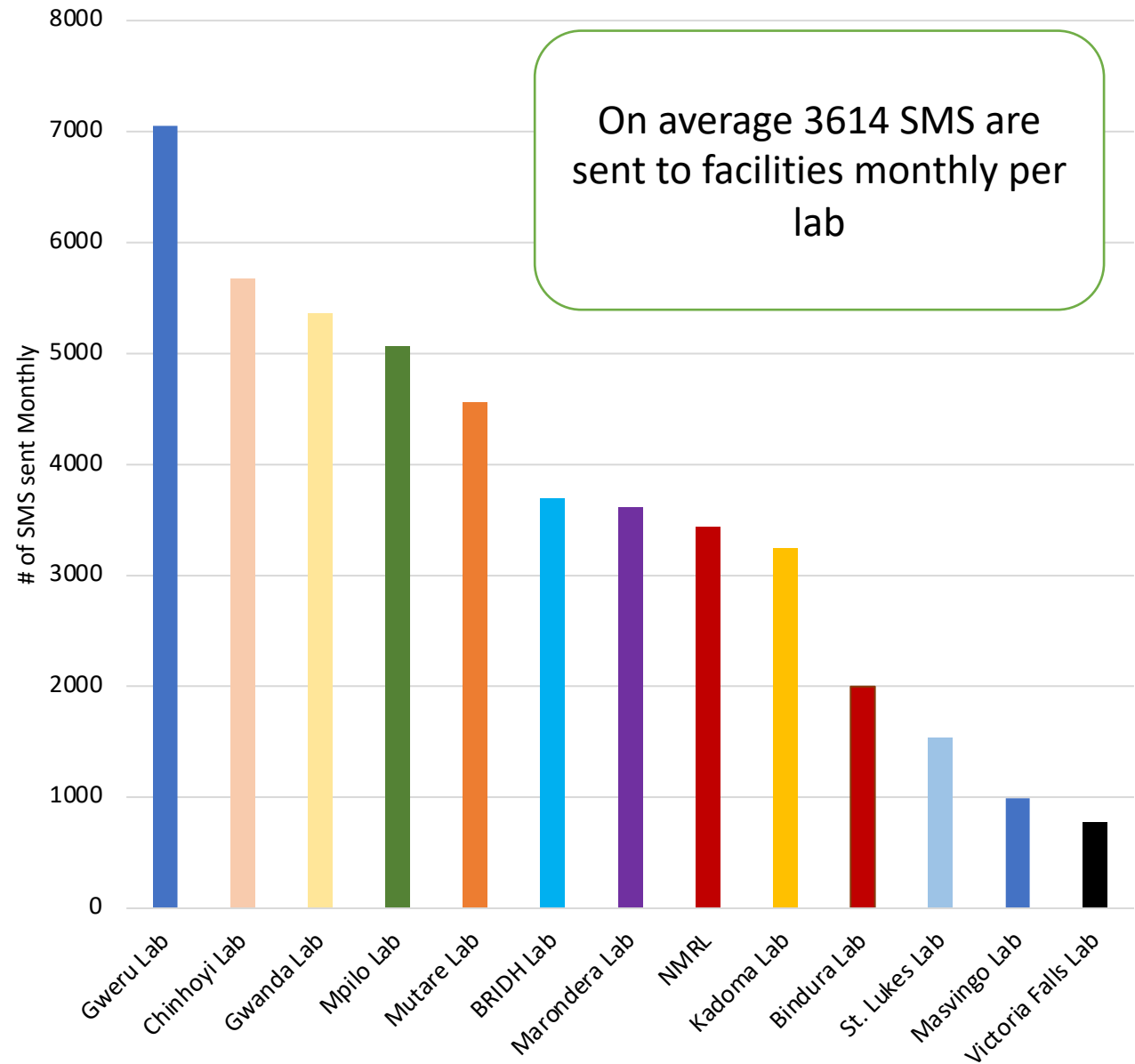
- Consent process not indicated on the VL request.
- Some patients don't give consent due to confidentiality issues as phone maybe shared amongst family members who may come across the SMS and yet patient would not have disclosed.
- Patient not having a mobile phone
- Poor mobile network may also contribute to low SMS coverage among rural patients



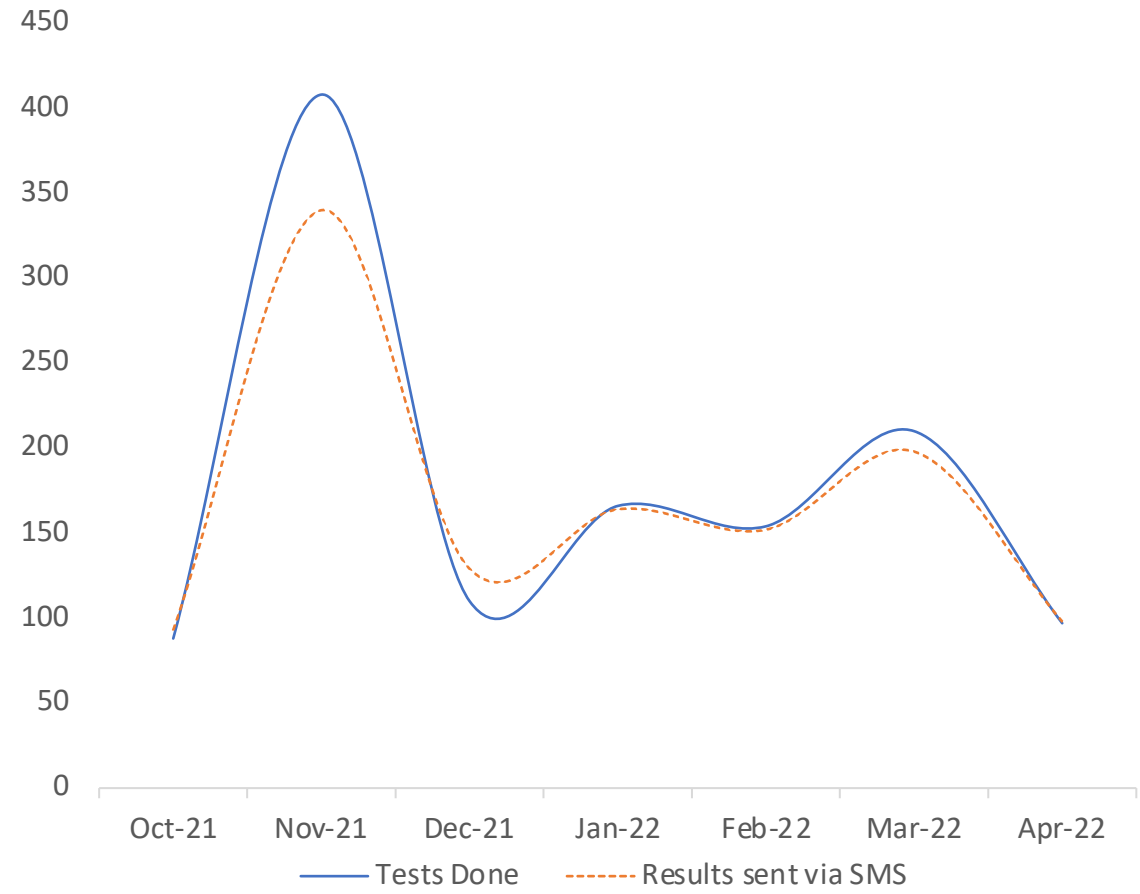
# Average SMS sent to patients per day



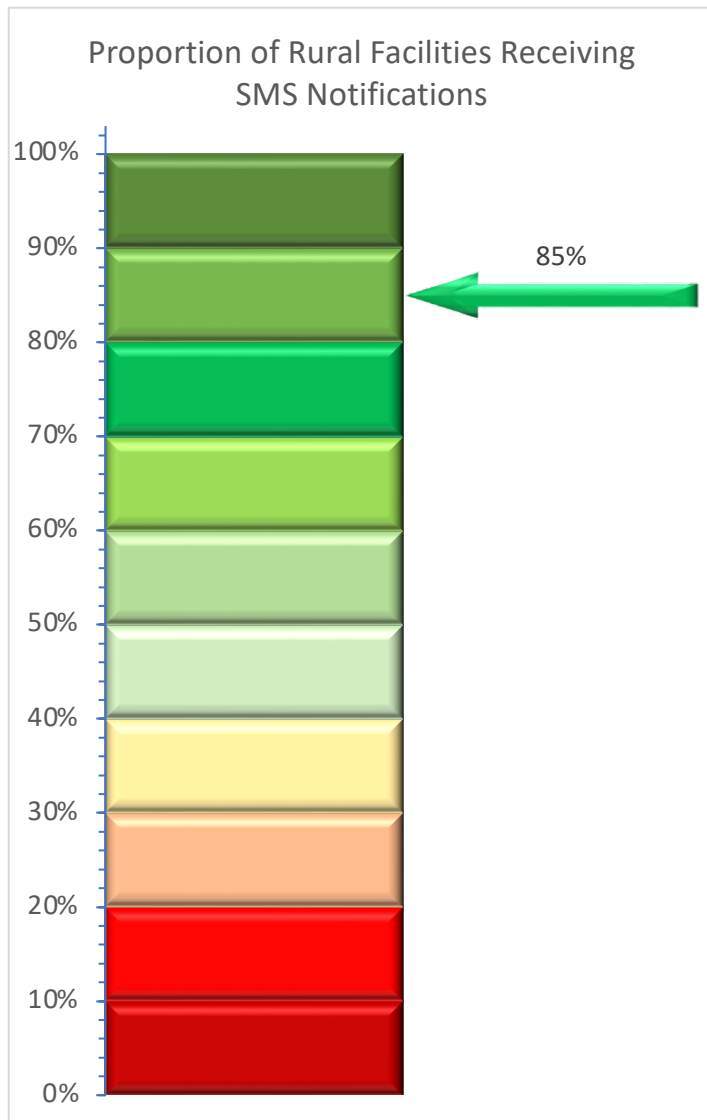
Average SMS sent per month per lab



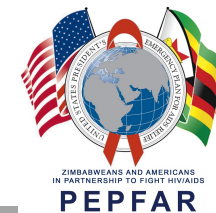
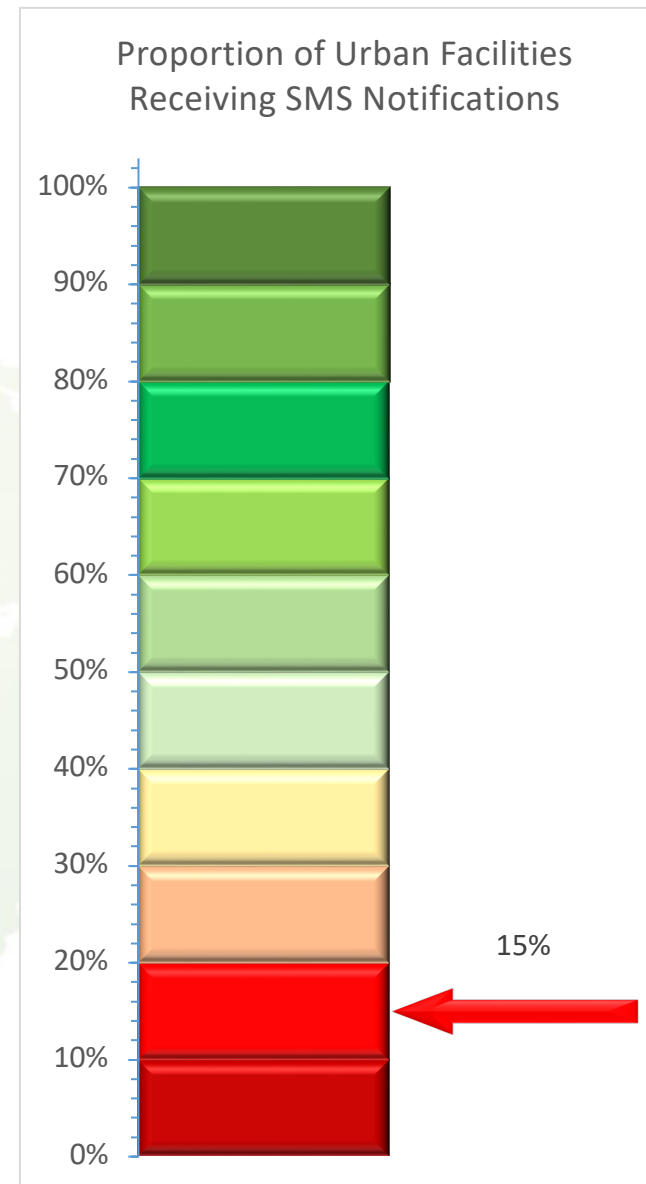
Case Study: Chinamhora Clinic Tests done vs Results sent via SMS



# Proportion of Rural/Urban Facilities Receiving SMS Notifications



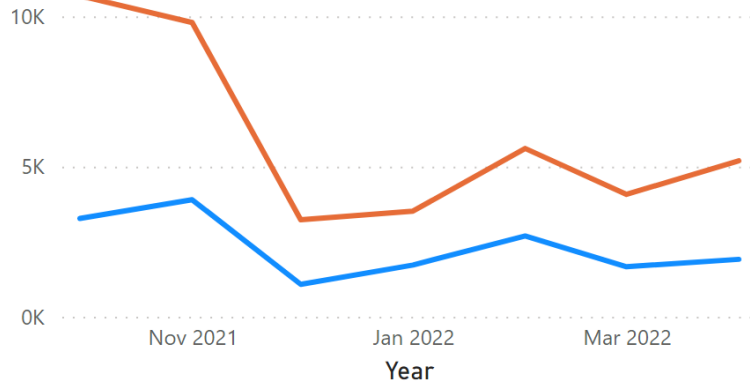
Time lag between hard copy result receipt & SMS notification is longer in rural than urban setting  
SMS more optimal for hard-to-reach areas



# SMS Per Month Per Lab Vs Tests done

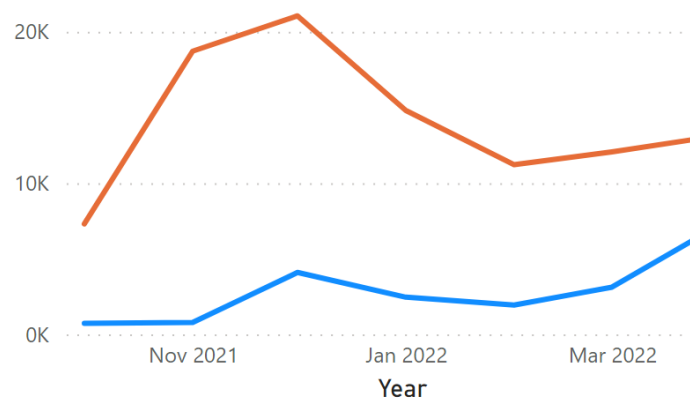
Bindura

● # of results sent via SMS ● # of tests done



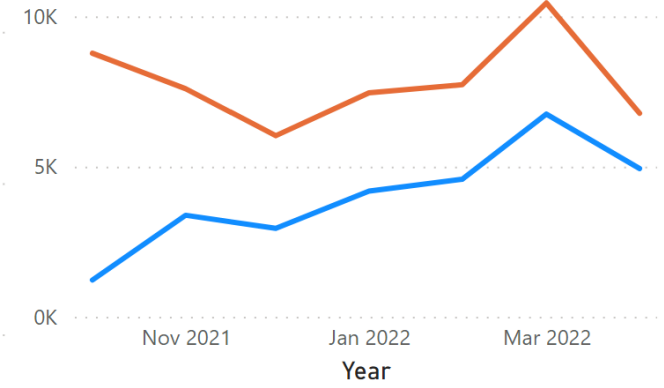
BRIDH

● # of results sent via SMS ● # of tests done



Chinhoyi

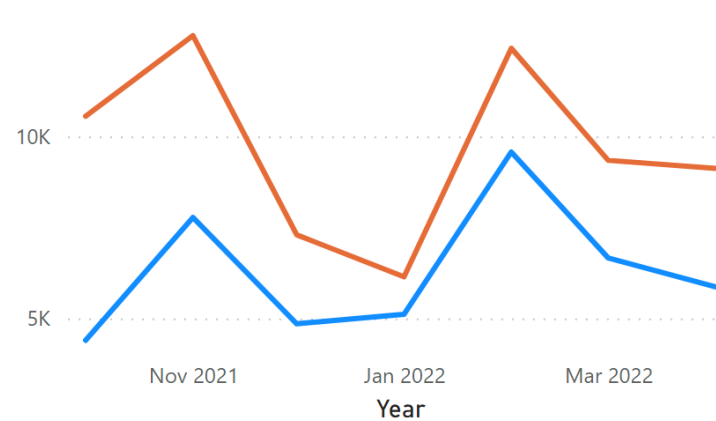
● # of results sent via SMS ● # of tests done



The gap between number of samples tested against results sent via SMS is because some sites do not have facility phones, only 974 sites

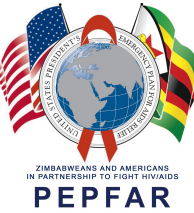
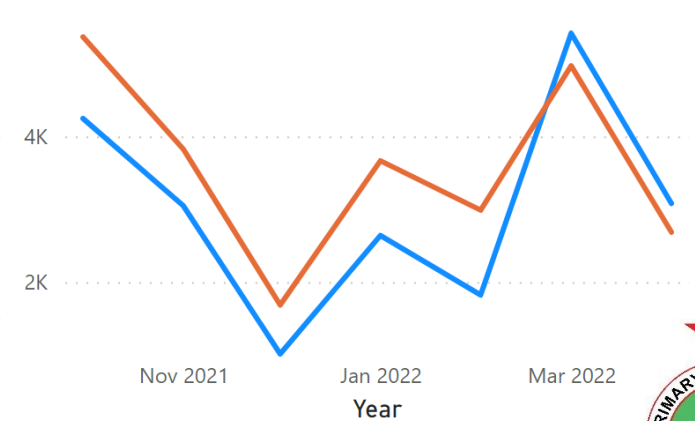
Gweru

● # of results sent via SMS ● # of tests done



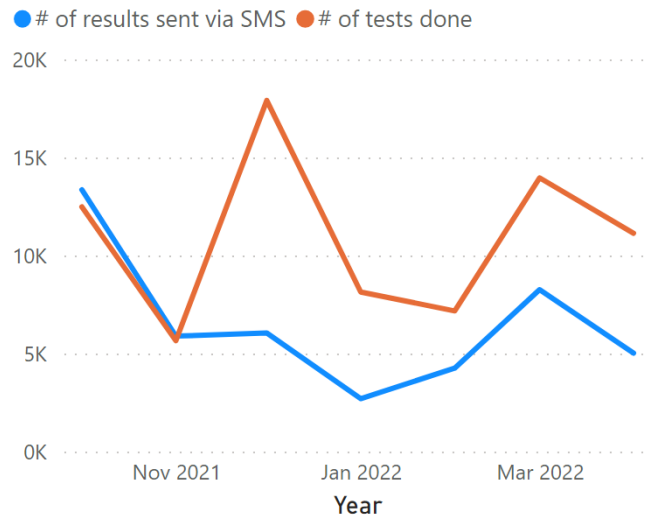
Kadoma

● # of results sent via SMS ● # of tests done

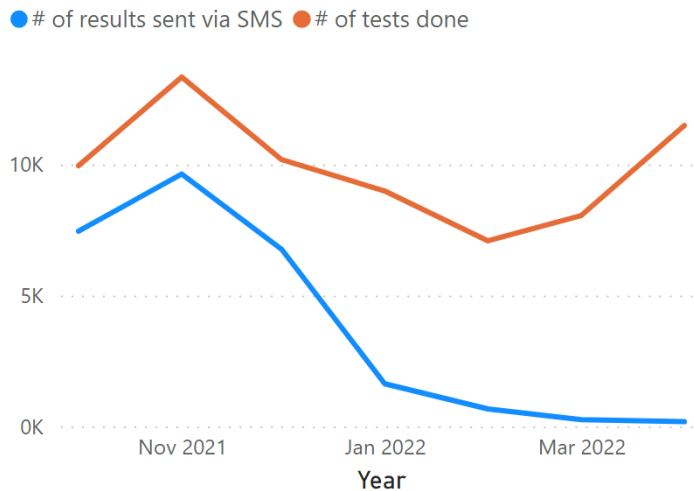


# SMS Per Month Per Lab Vs Tests done

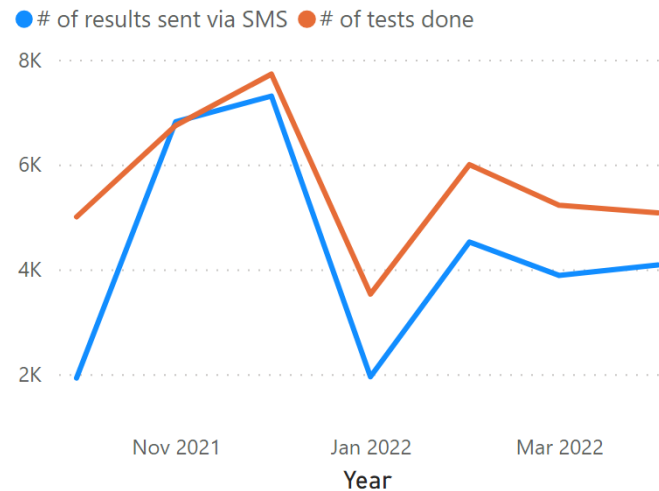
## Mpilo



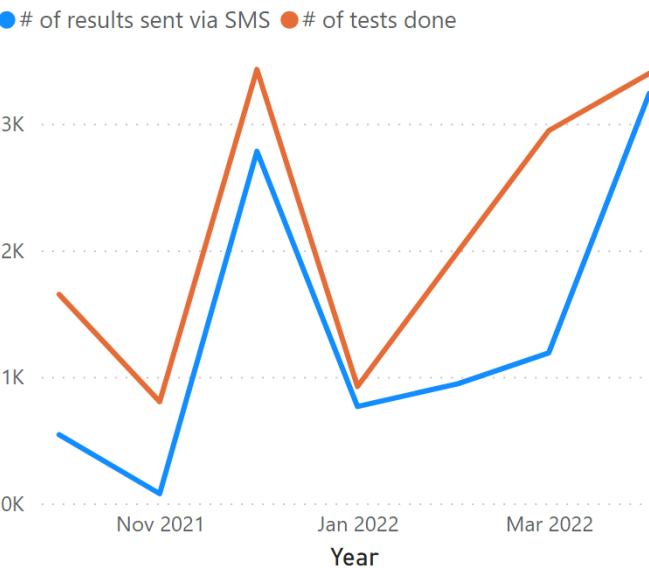
## Masvingo



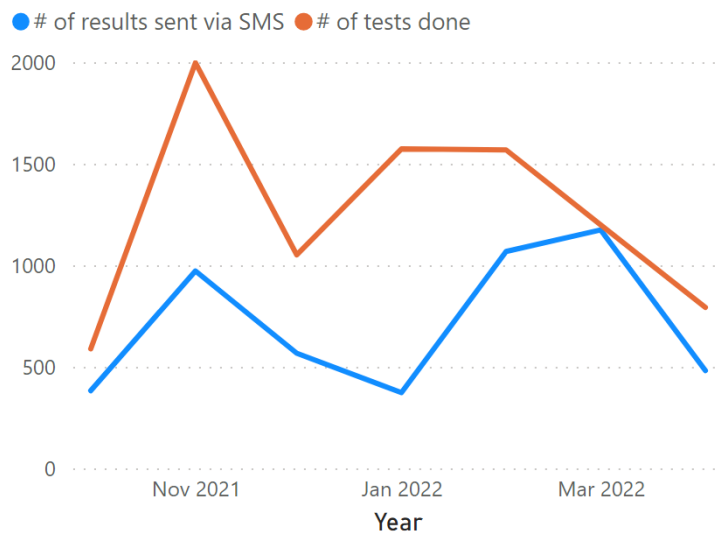
## Marondera



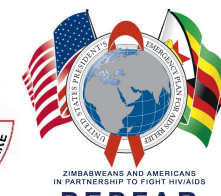
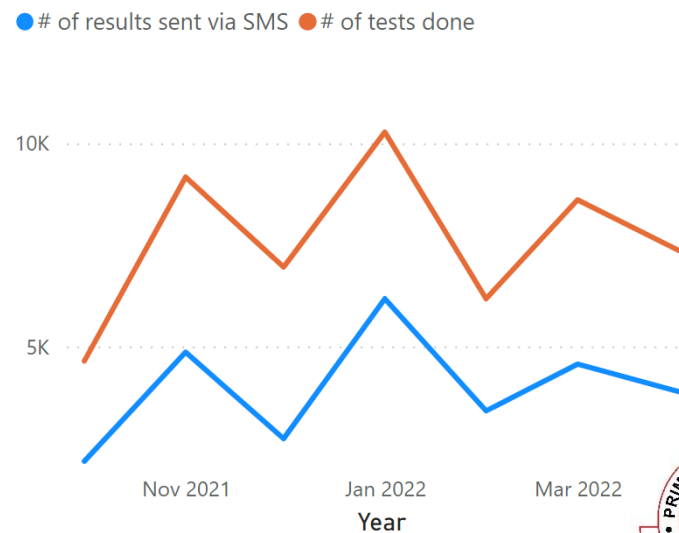
## St Lukes



## Victoria Falls



## Mutare





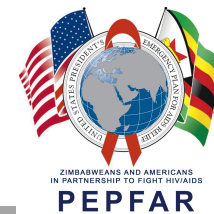
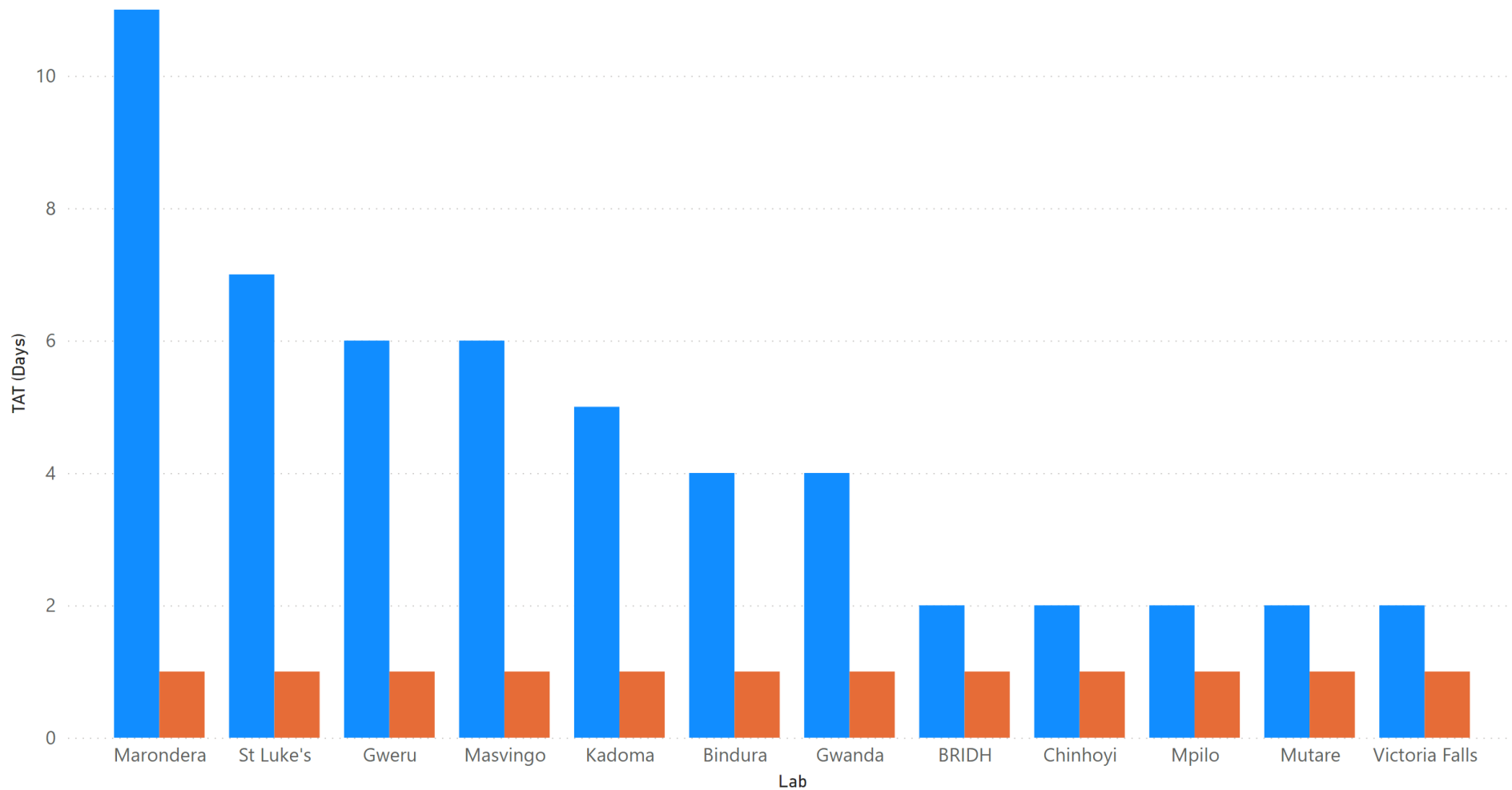


## Electronic Results Return via SMS

Comparison of Turnaround times for SMS and Paper based results delivery systems

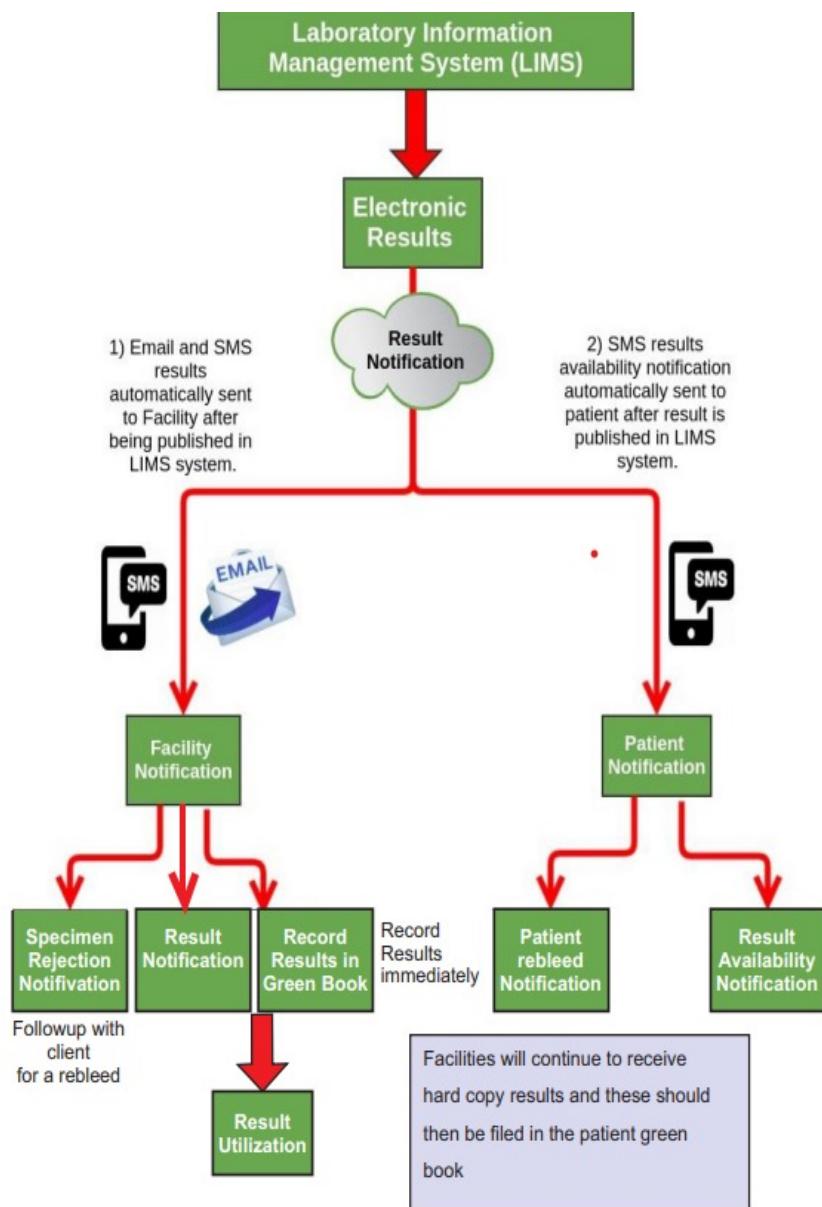
### Comparison of Viral Load Turnaround times for SMS and Paper based results delivery systems

● Paper based: Post Analytic Average TAT ● SMS Based: Post Analytic Average TAT





## Electronic Results Return via SMS



- Development of job aide done to standardize electronic result handling
- On job training support has been offered to the various CLI facilities
- Health education being done to improve patient consent process for contact detail registration in LIMS

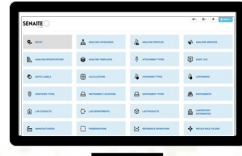


# Recommendations



Electronic Results  
Return via SMS

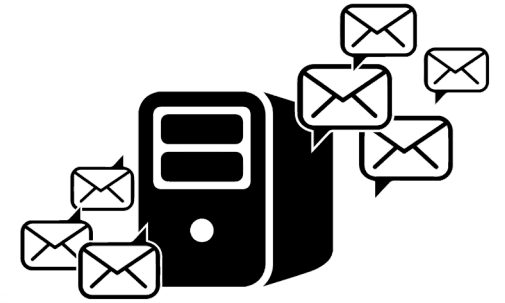
## Technical process/recommendations



Customization of the Local  
LIS/EMR/EHR to support  
SMS functionality



Selection of an SMS service  
provider (coverage,  
reliability, cost)



Integrations of LIS/EMR/EHR  
with an SMS service provider

## Technical cost drivers to consider

- Cost for customization of the local system (If applicable, and may vary based on the system)
- Cost of SMSs - bulk service SMS is cheaper
- Support staff managing the SMS directory and supporting the LIS/EMR/EHR system





## Electronic Results Return via SMS

### Lessons Learnt and Recommendations

#### Result notification

- Facility Gadget support critical
- Strengthening utilization by requesting clinicians
- SMS consent in-built in request form to ensure current client phone number is captured
- High volume facilities opt for email configurations, and this come with data support

#### Client Notification

- Rebleed notifications reduce client return time for specimen recollection
- Improvement of high viral load management processes
- Client education is important to ensure clients will be able to understand SMS
- Clients feedback collection enables improvements – currently exploring options of SMS in vernacular language options



# Acknowledgement of other Collaborative efforts from Stakeholders





# Thank you

