Practical Application of GIS Methods and Tools to Guide Spatial Targeting and Micro-planning

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GIS and Planning

Right to Care (Group)

April 20, 2023

ASAP II

ACCELERATING SUPPORT TO ADVANCED LOCAL PARTNERS II

A FEW QUICK NOTES

1. Welcome Local Partners – **In the chat, tell us where you're from.**
2. Please use the **Q&A box to ask questions** and the chat box for answering questions asked by the presenters.
3. We have a few **polls** during the webinar today. They will pop up on your screen.
4. The presentation for today's webinar will be saved on ASAP's website at **www.intrahealth.org/asap-resources**

PEPFAR

USAID
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Rapidly prepare local partners to have the capabilities and resources to serve as prime partners for USAID/PEPFAR programming, in compliance with USAID and PEPFAR procedures, for PEPFAR program implementation in FY 2022 and 2023.

70% of USAID PEPFAR funding to local prime partners.

STRATEGIC OBJECTIVES

1. Strengthen local partners to comply with regulationd as they transition to receive PEPFAR funding as a USAID prime partner.
2. Prepare local partners to directly manage, implement, and monitor PEPFAR programs, and maintain consistent PEPFAR program achievement and quality.

ASAP II

ACCELERATING SUPPORT TO ADVANCED LOCAL PARTNERS II

KEY RESULTS from ASAP I & II

ASAP has supported

126 local organizations
in **18** countries

113 local partner organizations

13 local government partners

ASAP II-SUPPORTED COUNTRIES

Angola

Cameroon

Côte d'Ivoire

DRC

eSwatini

Ethiopia

Lesotho

Malawi

Namibia

Nigeria

South Sudan

Uganda

Zimbabwe

ASAP I additional countries:

Kenya

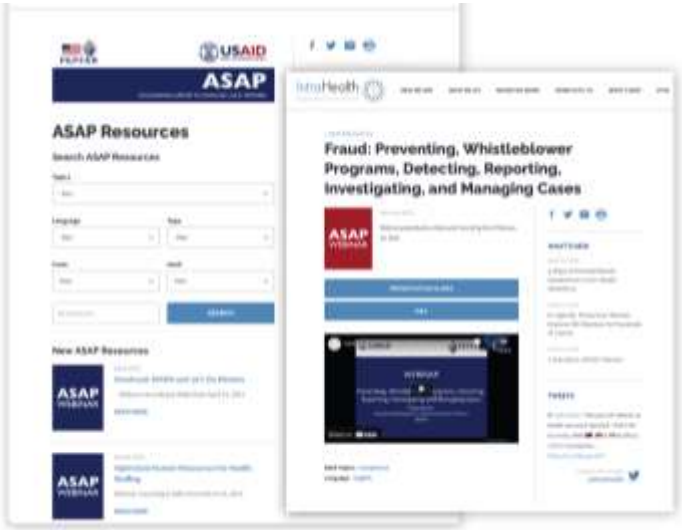
Mozambique

South Africa

Tanzania

Zambia

18 TOTAL COUNTRIES



ON-DEMAND WEBINARS

USAID/ASAP has broadcasted **90 webinars** for more than **20,000 attendees** in **76 countries**.

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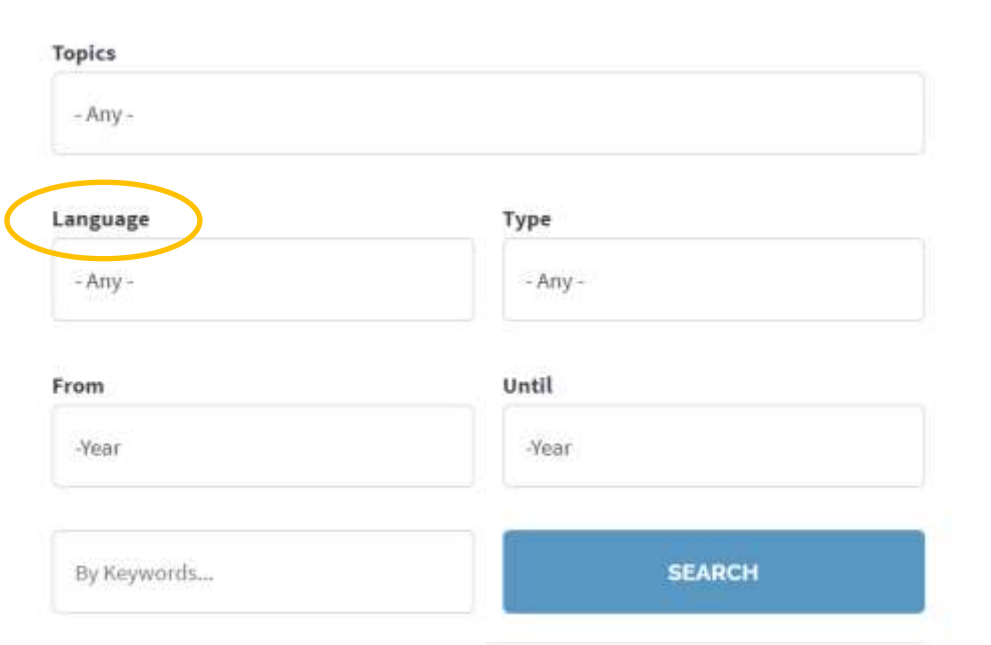

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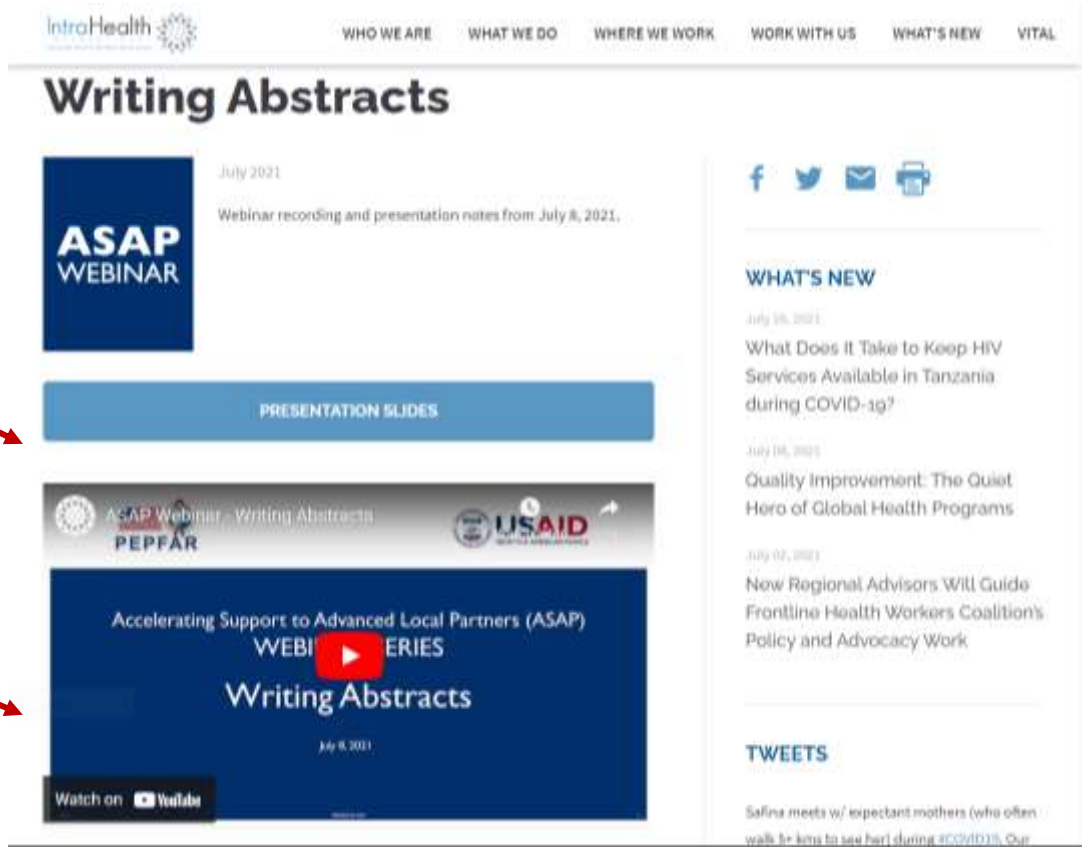


TODAY'S PRESENTERS

Dr. Dorman Chimhamhiwa
& **Victor Bangamwabo**

Right to Care, a South Africa-based USAID local partner and ASAP II Consortium Partner

Presentation Objectives

1. Orient participants on using GIS systems and tools for spatial targeting and micro planning.
2. Present a practical example to demonstrate the setting up, analysis, visualization, and decision-making support from GIS.

Outline

Webinar will comprise two main parts, in line with the objectives.

PART A: Participants' Orientation:

1. Why GIS?
2. Defining the geolocation of your points of interest
3. Setting up your GIS system:
    - GIS data collection systems
    - Integrating locational and non-locational data in a GIS environment.
    - Analyses and visualization in support of enhanced program implementation, targeting and microplanning
    - Some examples

PART B: GIS Practical Demonstration

Why GIS?

Unlike other systems, GIS helps to:

a) Identify problems – illuminate issues that are driven by geography
b) Monitor change – visualize locations where change is happening and communicate the change
c) Manage and respond to events – deliver situational awareness in a unique manner (sometimes in real time)
d) Forecast – support analysis of “what if” scenarios
e) Set priorities
f) Understand trends – visualize data to gain insights that might be missed in a spreadsheet

Before we start, let's get to know a bit about your work.

Question 1: Use the Zoom meeting chat box to write down the kind of work your organization does.

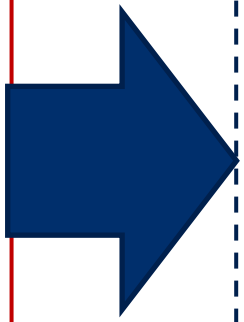
Examples:

1. Nutrition support for children in Zimbabwe
2. Support for adolescent girls and young women in Burkina Faso

Deciding what geolocational information to collect and how, is a critical step as you set up your GIS

Examples of program support areas and the GIS data that could be collected:

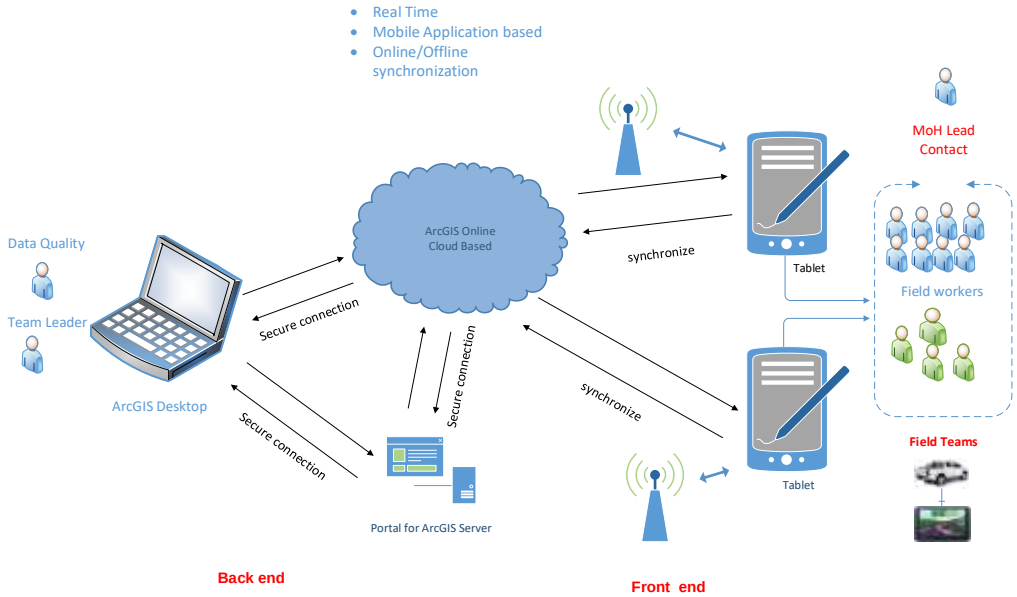
- Health Systems
- Nutritional Support
- Emergency Response
- School-based Interventions



Geo location data defined as:

- GPS coordinates (latitude, longitude)
- Addresses
  - Street, suburb, settlement/town
  - Village, settlements,
- Health facility that provides care/school where nutritional services are based, etc.
- Landmarks
- Mapped points; water points, village headmen homestead, etc.
- Service routes
- Other mechanisms for defining location

Simple to complex GIS data collection systems can be set up



- Create simple to complex systems, depending on needs and resources.
- Deploy the data collection tool onto a tablet/cell phone.
- Have the capability to collect data that is both online and offline.
- Support single-use and multiple users.

Key program and non-program data is geo-mapped in appropriate GIS software

Key Steps:

- Downloading data from data collection tools
- Structuring, formatting, and cleaning data
- Pulling and preparing other program data for GIS
- Integrating data in GIS
- Conducting simple spatial analytics
- Conducting complex/advanced spatial analytics
- Visualizing

Example 1:
Supporting HIV programming by using GIS

1. First 95 : Testing	2. Second 95 : Treatment	3. Third 95 : Suppression
Geo spatial mapping of: • where we should be testing in the community • where hotspots are • where the target population Is highly concentrated • Facility and community level driven participatory mapping of disease burden and risk profiling • Integrated analyses using multiple datasets	• Mapping spatial patterns of ART uptake to identify areas with greatest gap in care • Monitoring spatial patterns of ART coverage over time • Supporting community tracking of LTFUs through track and trace tools	• Visualize spatial distribution of retention and viral suppression to identify areas with poor retention and suppression that require targeted interventions • Identify areas with high rates of viral suppression, where patients can be treated in the community • Visualizing facility level viral suppression and access • Planning for viral load scaling up (Strengthening specimen transportation and resource optimization) • **where should we place what resources**" - e.g. pickup points, viral load analyzers etc

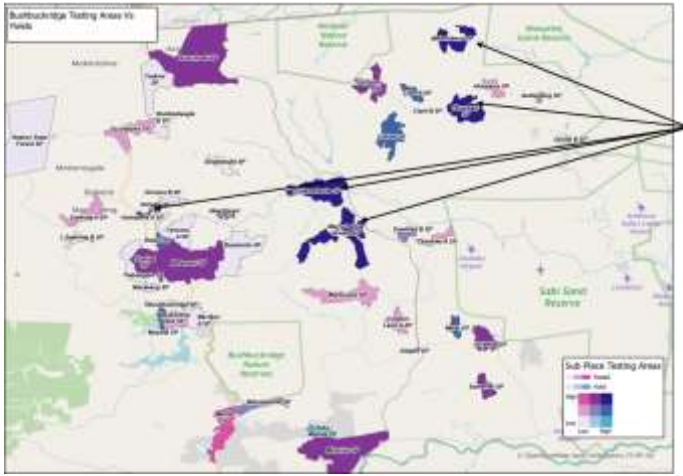
Data-driven analysis supports identification of potential high-yield areas

The Thulamahashe CHC is within the top 25% of those facilities for Positive HIV Tests

These are the two main areas where testing should be focused

- The on section is located at the Thulamahashe Old Stadium
- The second is the Cashbuild Mall

Both Rolle and Merry Pebble Stream (Highlighted in slide 3) are close to this area



Areas where we see a high number of testing and a high yield i.e. Where testing should be focused

- Thulamahashe
- Merry Pebble Stream
- Violet Bank
- Hluvukani
- Welverdiend

- Analyzed community testing data to determine where we still see potential for high-yield testing, so we can prioritize team deployment

Geo analysis of health facility testing vs community testing to inform best resource deployment

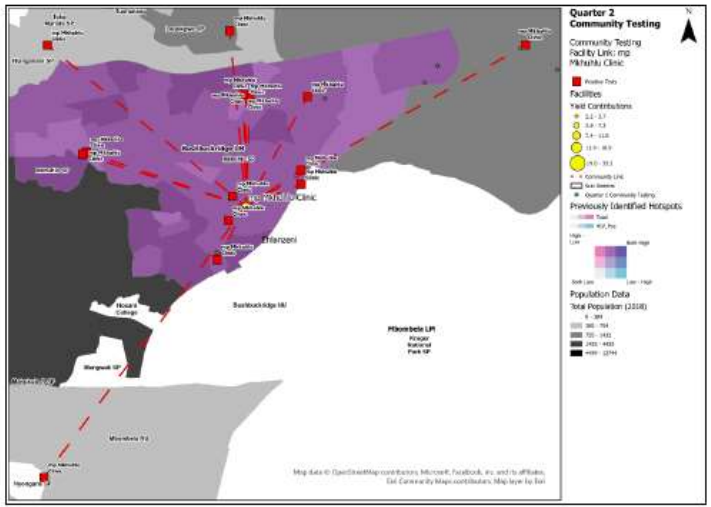
Mkhulu

The Quarter 2 community testing saw a yield of 10.3% while the facility-based testing was at 3.8%. The team should continue their testing program in the surrounding areas.

Suggested testing areas include inter alia;

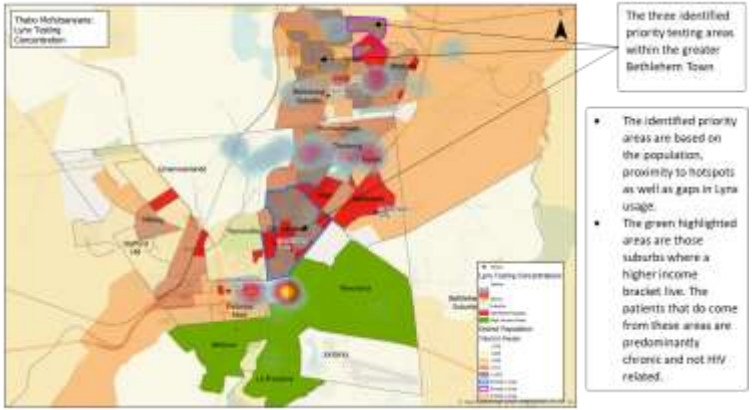
- Legokgwe
- Mkhulu
- Hlanganani
- Teka Mahala

The facility also saw in increase in 9 TB cases during Quarter 2 so more screening for presumptive's should be done during their community testing strategies.



- How do the clinic results compare to the community testing results?
- Should testing and treatment programs be continued in the area, or should resources be deployed elsewhere?

Participatory Mapping strengthens targeting of Community Testing areas



"In its broadest sense, participatory mapping means creation of maps by local communities."
We use participatory mapping to understand:

a) How health facilities perceive their population
b) Where the catchment area is
c) Where the Key Populations are
d) Where community testing has been done

Then, additional, third-party data is overlaid to get a better picture.

Using GIS to support Planning of Viral Load scale up activities in Zambia

Facility level assessments done

a) Mapping of geo-locations of 2500+ health facilities in Zambia's 10 provinces

b) Assessment of availability of key infrastructure at health facilities, using a Survey123 GIS tool deployed on tablets

c) Mapping of specimen transportation routes and road networks to be used

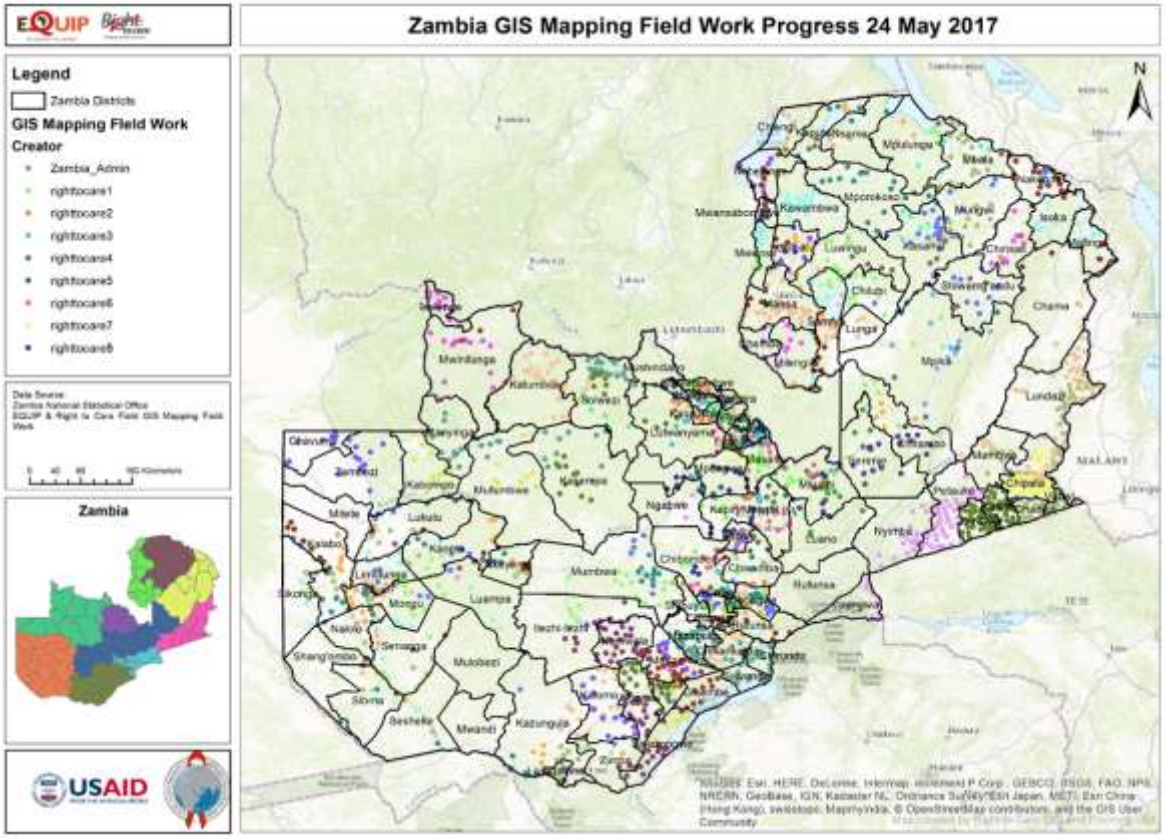
Secondary data

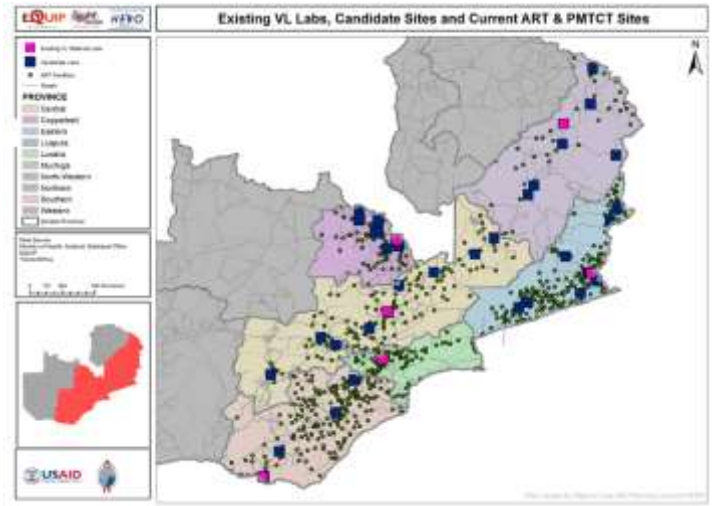
Data set	Data elements
Clinical data	Clinical data, HIV burden spread, ART, facility catchment population
Census data	Population
Roads data	Transport network, roads classification (supplemented with GPS tracked data)
Administrative boundaries, Town and cities	Provincial and district boundaries, Town and cities
Hydrology and topography	Rivers, lakes and other natural features

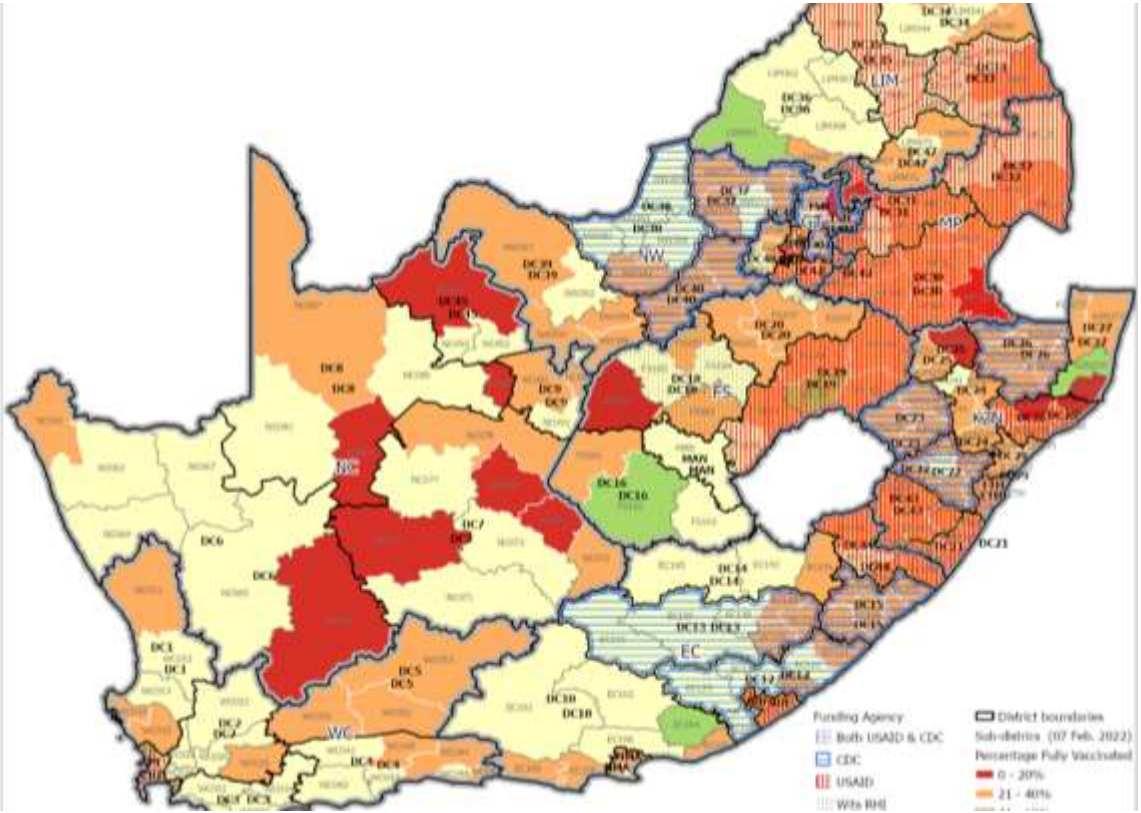
GIS-based analyses

Undertake comprehensive analyses in support of (a) specimen transportation, route optimization, resource placement, and coverage of heath care; (b) implementation of programs.

Some results from the Zambia EQUIP work

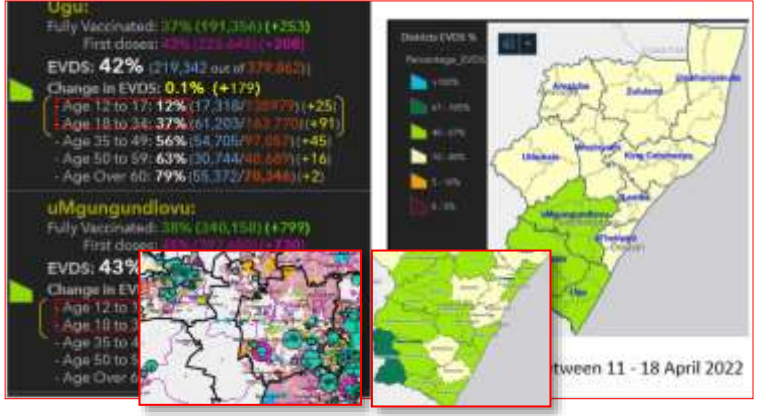


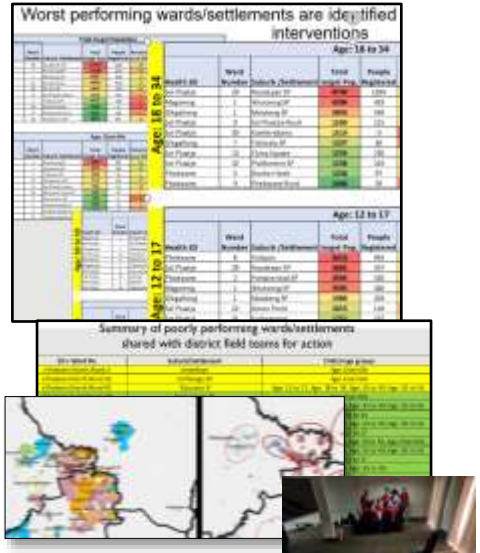




Example 2:

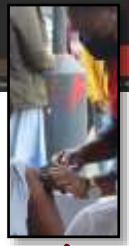
Supporting Covid19 vaccination using GIS - South Africa





1. GIS dashboards: help understand coverage at local level, and monitor weekly progress at settlement and ward level

5. Field/survey to capture and monitor direct vaccination daily

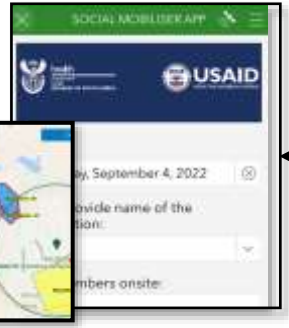


4. Vaccinate in identified critical wards and settlements

GIS tools are used to strengthen implementation and achieve better results

2. Use GIS dashboards and printed maps to conduct micro-level planning, targeting population segments, and planning ideal outreach locations

3. Ramp up targeted interventions (e.g., create demand using appropriate tools)



Mobile app/tool for supporting social mobilization

A mobile public-facing app/tool for finding nearest vaccination sites

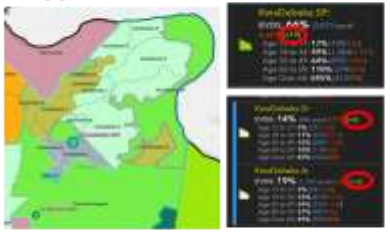
Data & tool triangulation to enhance an integrated use of GIS tools

(i) Vaccine coverage provincial dashboards: Identify where the gaps are

(ii) **Social Mobilizer App:** Capture efforts at social mobilization in areas identified in (i)

(iii) Daily monitoring tool: Reflect what demand identified in (ii) has been mapped. Reflect change on next weekly analysis in (i)

(i) Provincial Dashboard



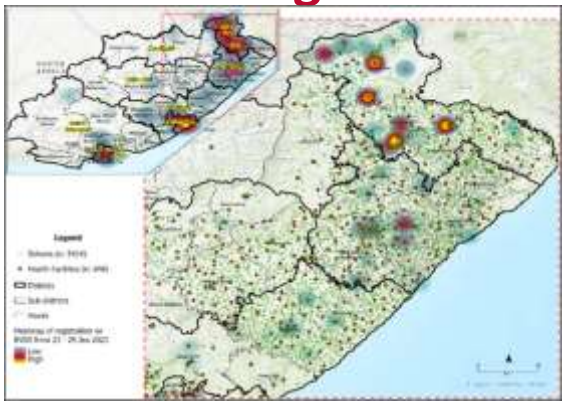
(ii) Social Mobiliser App

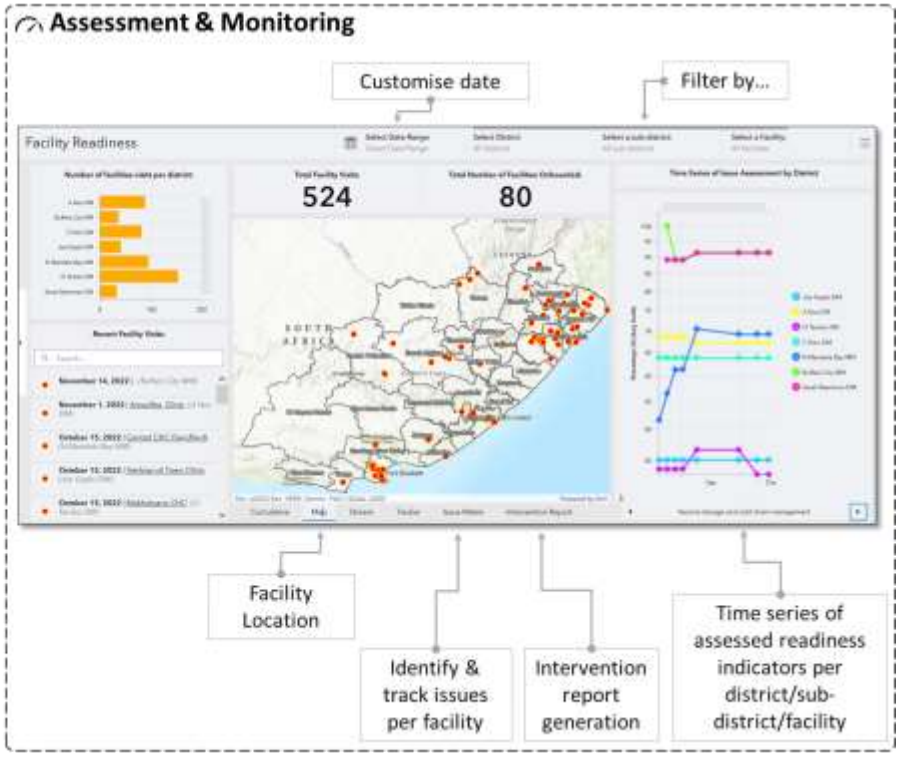
		subdistrict	settlement		Type of engagement	Ready to vaccinate
2022-11-11	Mandla	eThekwini West	Kwadabeka	mobilization	door_to_door	3
2022-11-11	Mandla	eThekwini West	Kwadabeka	mobilization	door_to_door	3
2022-11-11	Mandla	eThekwini West	Kwadabeka	mobilization	door_to_door	2
20						3
20						4
20						2
						17

(iii). ADAPT Vacc. Tool/ Survey123

todays_date	2022-11-11
site_type	door_door
vaccine_site	Kwadabeka
grand_total_vaccinated	24
total_number_vaccinated_jnJ	
total_number_vaccinated__Pfizer_dose_1	18
Age:60_plus	1
Age:50_59	3
Age:35_49	4
Age:18_34	14
Age:12_17	2
Total Individuals Vaccinated	18

Use GIS tools to assess the readiness of public health facilities to integrate COVID-19 vaccines into their routine health services (1)

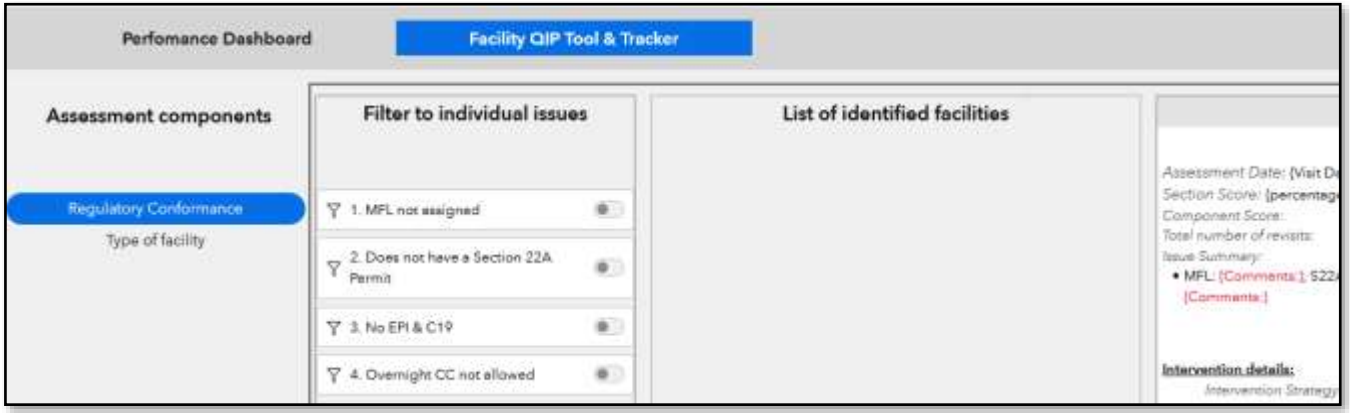




Assess readiness of public health facilities to integrate COVID-19 vaccines into their routine health services (2)

Readiness Assessment Dashboard

Facility Quality Improvement Plan Tool



PART B
Using GIS to analyze data and communicate results with maps - A Practical Demonstration

ASAP II

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Question and answer session

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