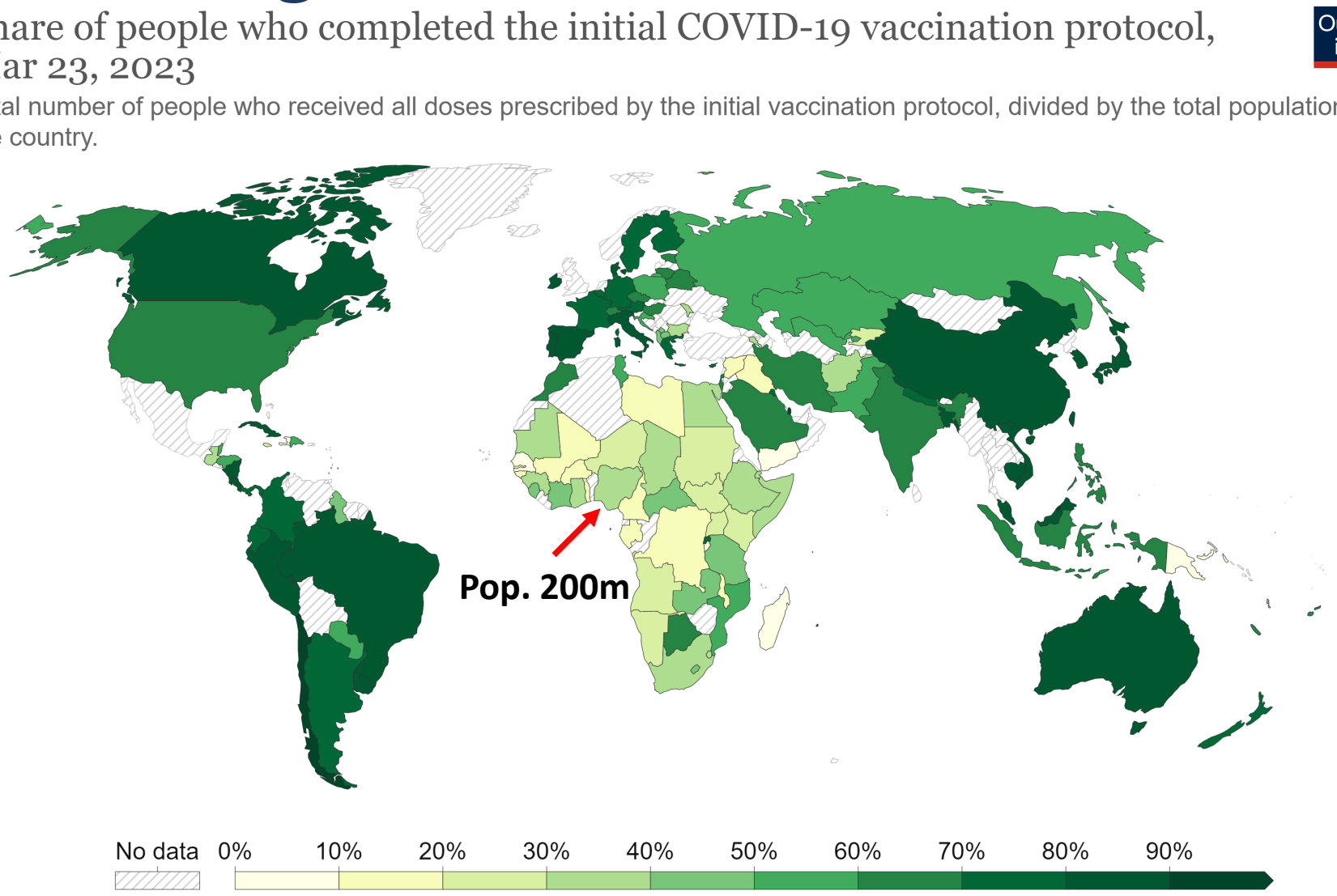
Use of Social data to inform programmatic action for COVID-19 vaccine uptake in Nigeria

Outline

- **Background**
- Approach
- Using data for action
- Going forward

Mobile vaccination site targeting the elderly in Mangu Plateau, Nigeria. Courtesy: Janada Dimas AFENET Nigeria

Background



- COVID 19 vaccinations began in mid-March 2021
- National target: **70% coverage** by December 2022. Denominator calculations based on target population*
- **Health care/frontline workers prioritized**
- Other priority groups include – Elderly 50yrs and above, comorbid and immunocompromised
- 4 types of vaccines

Source: Official data collated by Our World in Data – Last updated 24 March 2023 OurWorldInData.org/coronavirus • CC BY

Note: Alternative definitions of a full vaccination, e.g. having been infected with SARS-CoV-2 and having 1 dose of a 2-dose protocol, are ignored to maximize comparability between countries.

*18 yrs and above make 51.4% of total Pop.

Rationale

- Initial uptake of vaccines among prioritized health worker population was low at <1% by May 2021
- Vaccinations opened up to other at-risk groups with uptake still suboptimal
- Significant portion of 4.9m doses received as first batch risked closed vial expiry
- Need to better understand drivers and barriers to vaccine uptake

Dr Cyprian Ngong makes history as first person to receive COVID 19 vaccines in Nigeria
https://www.channelstv.com/2021/03/05/breaking-dr-ngong-cyprian-makes-history-as-first-person-to-take-covid-19-vaccine-in-nigeria/

A survey was conducted to understand drivers and barriers to vaccine uptake among Health care workers and target population

1. Identify the COVID-19 vaccine-hesitant population
2. Barriers and facilitators
3. Evidence-based recommendations

1	**Self reported reasons for COVID-19 uptake**
2	**Influence of previous infection and risk perception**
3	**Perception of availability of vaccine**
4	**Influence of access to vaccine**
5	**Perception of Government intervention**
6	**Perception of importance of COVID-19**
7	**Perception of safety**
8	**COVID-19 information source**
9	**Effect of social influence**

Social media was found as major source of information on COVID-19 vaccines among health and non health workers

N=3,943

Major Source

HCWs and target population

Other Sources

- Other Health Workers and general population – 11%
- Community meetings – 5%
- Influential Leaders – 5%
- Traditional media – 5%

This further underscored the need for a social listening project

Background

Approach

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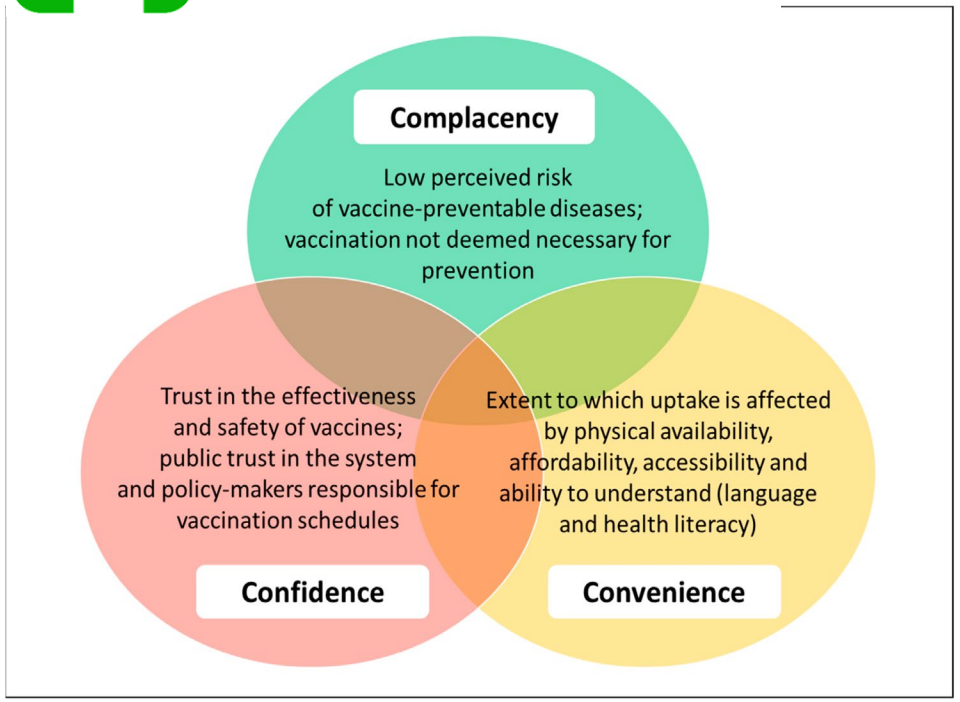
AI used to identify root cause of barriers identified from study – Social listening project

- Social listening - deliberate approach to collate and refine what people think from both social, traditional and non-media sources

- **YouScan,** an AI Social Media Listening and Image Recognition platform used to generate actionable insights. Trained using word prompts for –ve, +ve and neutral themes

- Mentions grouped in themes of Confidence, Convenience and Complacence`:
  - **275,000+ mentions vaccine confidence**
  - **312,000+** mentions vaccine complacency
  - **473,000+** mentions vaccine convenience

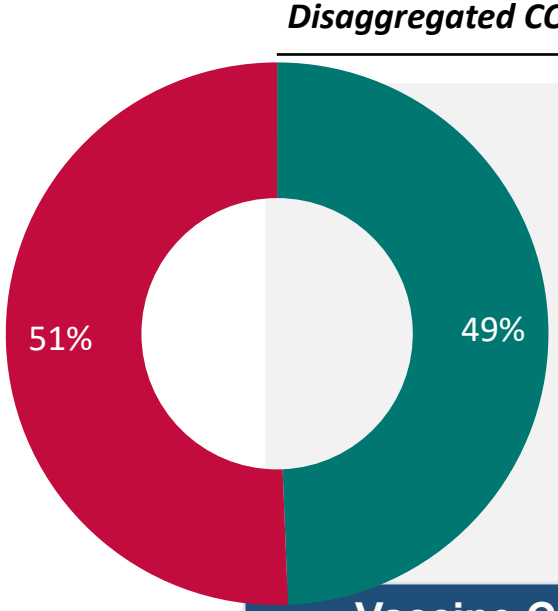


Data report period: September 2021 – June 2022

3Cs of vaccine hesitancy adapted from World Health Organization. Report of the SAGE Working Group on Vaccine Hesitancy. Sage Report. 2014. Available online: https://www.asset-scienceinsociety.eu/sites/default/files/sage_working_group_revised_report_vaccine_hesitancy.pdf (accessed on March 24 2023).

Positive and negative sentiments were refined by a team for vaccine confidence, convenience and complacency

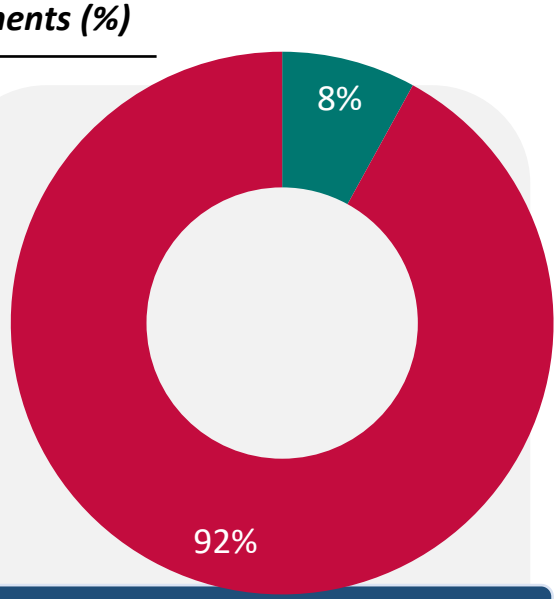
Disaggregated COVID-19 vaccination sentiments (%)



Vaccine Confidence

- **Positive** – "I took my booster shot today against COVID, and I am very sound and safe"
- **Negative** – "24 hours after the jab, I am battling pain at the site of the injection, diarrhea, fever and a headache"

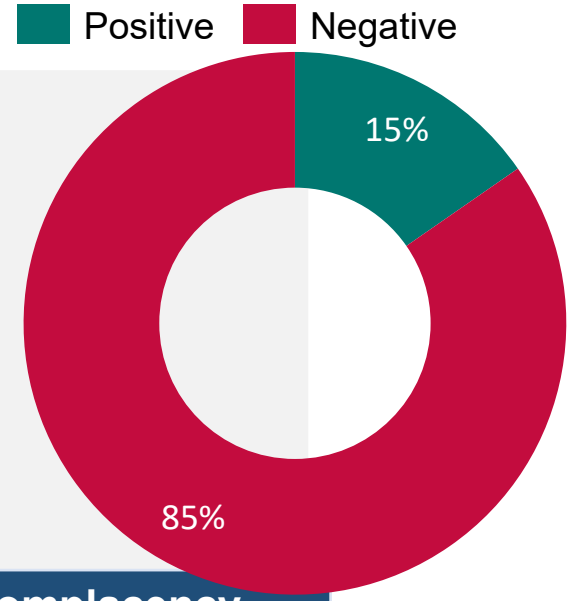
- ***Sources**: Lagos, FCT, Oyo, Anambra, Rivers, Osun, Kaduna, Ekiti, Delta and Kwara*



Vaccine Convenience

- **Positive** – "Where can I get the COVID-19 vaccine booster dose in Ibadan?"
- **Negative** – "I went to take my booster shot today and had to wait about 20 minutes before getting vaccinated"

- ***Sources**: Lagos, FCT, Enugu, Kwara, Benue, Oyo, Anambra, and Rivers states*



Vaccine Complacency

- **Positive** – "Everyone needs to take the COVID-19 vaccine to stay safe"
- **Negative** – " The COVID-19 pandemic was a practical test to check how dumb and narrow-minded humanity is today"

- ***Sources**: Lagos, FCT, Oyo, Niger, Rivers, Ogun, Kaduna, Edo, Plateau and Kwara*

Data report period: August 2022

Neutral sentiments were refined by a dedicated Government and partner team to either reclassify or used to retrain AI

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Social listening data was analyzed weekly and used to inform programmatic action and create specific messaging content to tackle disinformation

- **Understanding barriers to vaccine access: "Putting people at the centre of program".** Social data was used to identify barriers to vaccine access, such as vaccination sites to far or difficulty scheduling appointments.

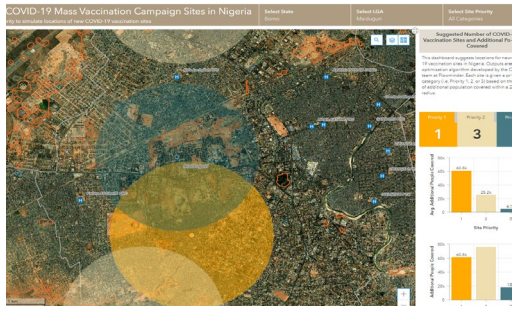
- **Identifying vaccine uptake trends:** Social data was analyzed to identify trends in vaccine uptake to guide microplanning + **with GIS maps**

- **Developing targeted communication campaigns**: Social data was used to develop targeted communication campaigns that address the specific concerns and beliefs of different populations.

- This information was used to develop communication campaigns that are tailored to different populations and are more likely to be effective.

Tailored Messaging to tackle misinformation

Shared location of vaccination sites and increased mobile vaccination teams

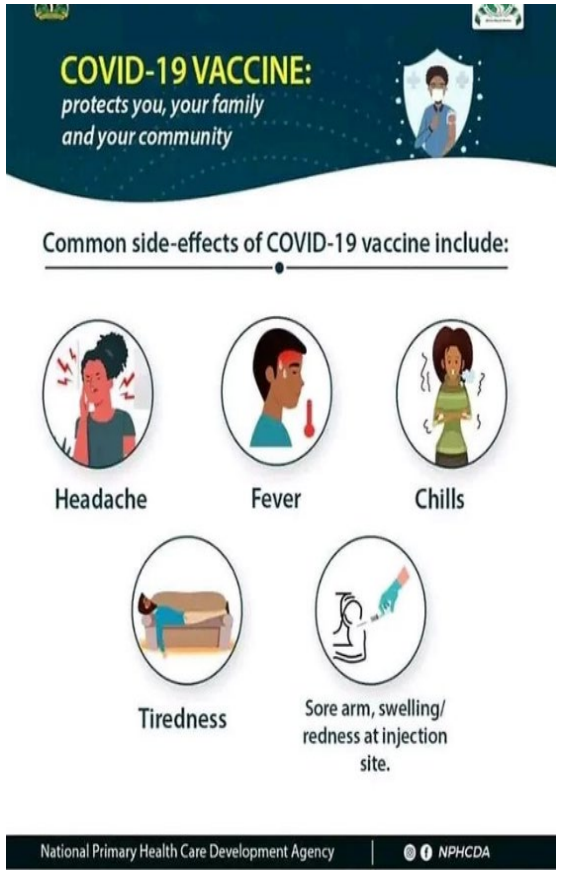


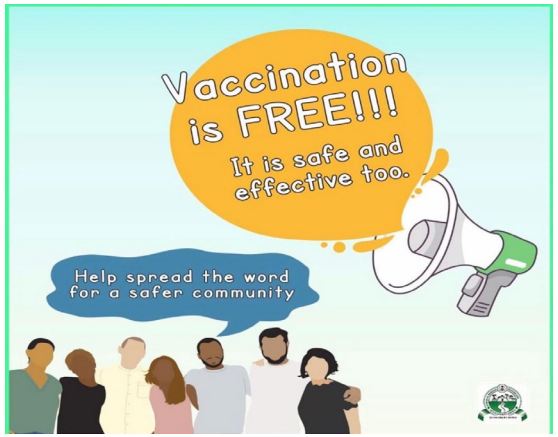
Mobile vaccination teams used with GIS to reach low coverage settlements

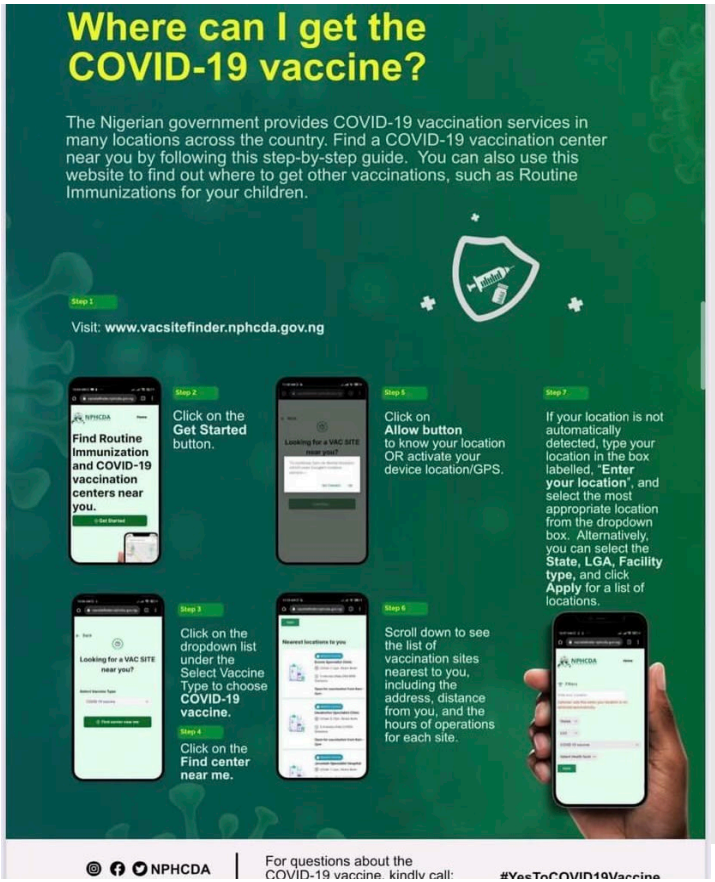
Supply chain – last mile delivery improved to tackle stock outs

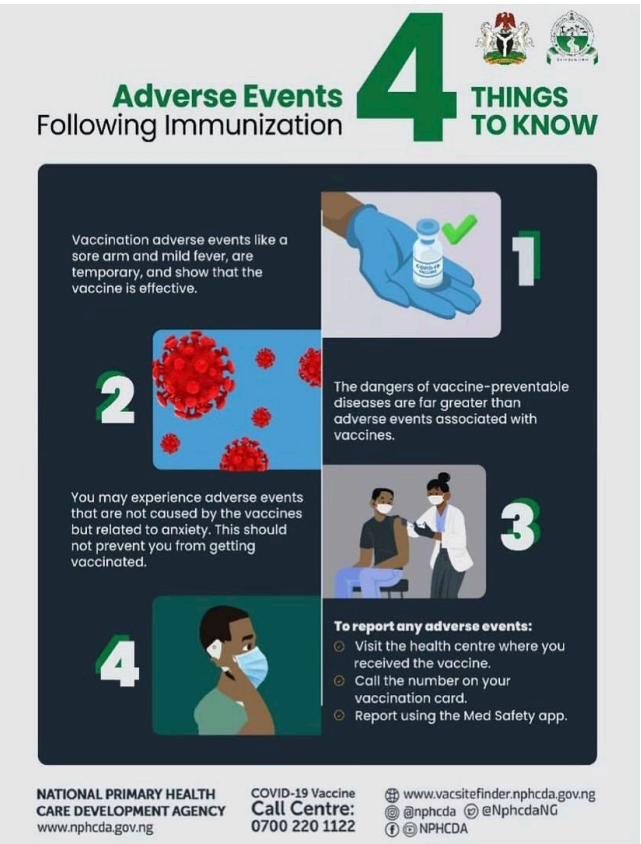
The CRICC[1] team created and disseminated content based on social listening findings

- The COVID-19 Vaccine Crisis Communication Center (CRICC) was set up by the NPHCDA2 to mitigate COVID-19 vaccine-related mis/disinformation and uplift the public's confidence in the vaccine
- Weekly insights were shared with CRICC and content was co-created to address concerns of Nigerians on the vaccine









1. Covid-19 Vaccination Crisis Communication Center 2. National Primary Healthcare Development Agency

Findings from social data helped make informed decisions on areas with low coverage for teams' deployment

"I tried to get vaccinated, but the Moderna brand wasn't available"

Vaccine Uptake:

Insights from social data on vaccine preference was used to inform vaccinees on the different brands available and its safety concerns

"Vaccination sites are too far from my area"
"They have asked us to take the vaccine, but we don't have it around where we stay, we need to have access to a center around us so we can take the vaccines"

Team Deployment:

- Social data informed deployment of vaccination teams to areas with low coverage
- Moved from fixed posts to mobile vaccinations
- Close equity gaps

……..monitor vaccine stock-out and trust in government programs and policies

"I took time off work to visit the vaccination site, but I was told to come back the following day because they were out of stock"

Vaccine Logistics:
With social data, vaccine availability and stock performance especially at the last mile

Mistrust of Government:
Social data provided insights on government policy perception

"The government never distributed palliative to us, but with vaccines, they are so eager to distribute them. The government has some ulterior motives with these COVID-19 vaccines"

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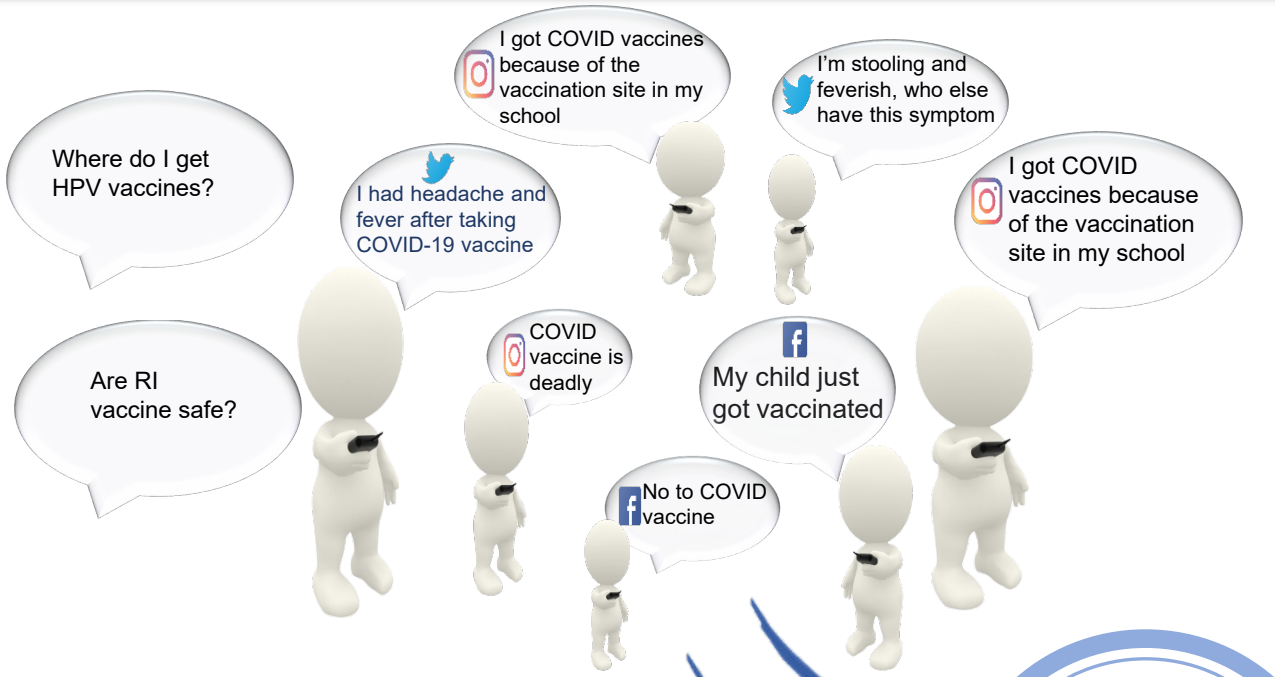
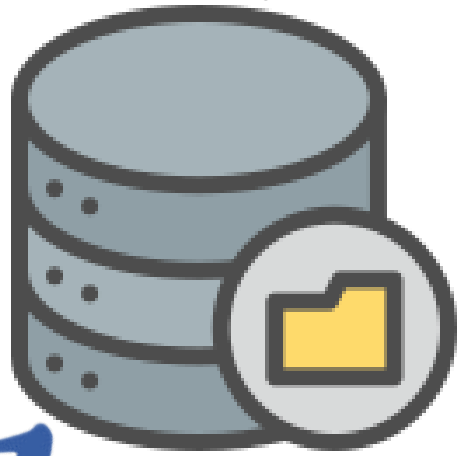
Social data use defining demand data for the future in Nigeria – Listening for Impact Project[1]

Listening for Impact Project seeks to improve demand data management in Nigeria with the development of a database system (a repository) managed by the Government for informed decision making regarding COVID-19, Routine Immunization and other Primary Health Care services



Demand data Repository



Other sources of demand data will be collated and fed into the repository

- **Zero dose reduction strategies**
- **RI recovery plan**
- **Routinizing COVID 19 vaccines**
- **New vaccines introduction**
- **Polio eradication – cVDPV2**
- **Strengthening PHC Systems**

1. *Listening for Impact Project*

Recommendations

1. Using social data to complement implementation science and in synergy with other areas – macro and micro planning **(GIS),** supportive supervision, capacity building and data

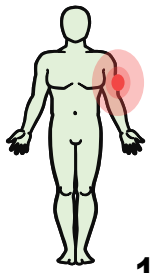
2. Quicker decision making especially with constantly changing nature of vaccination demand and closing equity gaps (paradoxes)

3. Evidence-based frameworks – BeSD together with social data

4. Support evidence in consequential geographies

Thank you

"Vaccines in themselves do not prevent deaths and disabilities, vaccinations do"



Social data used with other program components contributed to improved vaccine coverage in supported states

Coverage in supported and non supported states – daily call-in data as of 27th March 2023

Current position

Position at inception

100%

90%

70%

50%

30%

0%

Target

8 months

	Bayelsa	Ekiti	Ondo	Osun	Kwara	Adamawa
Current position	29	79	15	100	81	100
Position at inception	3	27	5	42	33	30

Non supported

Supported