

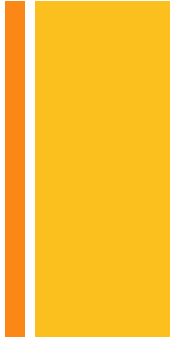
## Yellow fever epidemic – Immunity state of the art



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# + Content

- Context-
  - National Epidemic Response Plan
  - Previous experience
  - Vaccination Strategy
- Main challenges





# NATIONAL CONTROL STRATEGY



REPÚBLICA DE ANGOLA  
MINISTÉRIO DA SAÚDE  
DIRECÇÃO NACIONAL DE SAÚDE PÚBLICA

RELATÓRIO FINAL DA RESPOSTA À EPIDEMIA DA FEBRE  
AMARELA EM ANGOLA, 2016



Luanda, Dezembro, 2016



# Yellow Fever (YF) epidemic - context



- Epidemic experienced from 5th December 2015 to 23rd December 2016.
- 4,618 suspected cases reported, with 884 laboratory confirmed and 384 deaths .



# National Epidemic Response Plan



- 5 different components implemented:
  - Epidemiological and laboratory surveillance;
  - Integrated vector-control measures;
  - Social mobilization to increase the level of awareness and adherence to vaccination and vector control measures;
  - Clinical management of patients to reduce the case fatality rate (CFR) and;

■ **Mass vaccination of the population as the main control intervention.**

# + Previous experience

- Angola MoH had vast experience with poliomyelitis and measles vaccination campaigns
- Wide community adherence
- Support from the media, churches and civil society organizations
- YF vaccine is part of the routine immunization schedule for children under 5 years of age
- In 2015 overall vaccination coverage was low, which may have contributed to trigger the outbreak.





# CALENDÁRIO DE VACINAÇÃO



Ao nascer



PÓLIO



ZERO DOSE

\_\_\_ / \_\_\_ / \_\_\_

4 / 12 / 14



1º DOSE

Aos 2 meses



DTP



1º DOSE

\_\_\_ / \_\_\_ / \_\_\_

\_\_\_ / \_\_\_ / \_\_\_



2º DOSE

Aos 4 meses



DTP



2º DOSE

\_\_\_ / \_\_\_ / \_\_\_

\_\_\_ / \_\_\_ / \_\_\_



3º DOSE

Aos 6 meses



DTP



3º DOSE

\_\_\_ / \_\_\_ / \_\_\_

\_\_\_ / \_\_\_ / \_\_\_



DOSE ÚNICA

Aos 9 meses



FEBRE AMARELA

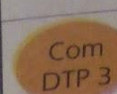


DOSE ÚNICA

4 / 12 / 14

\_\_\_ / \_\_\_ / \_\_\_

## Vitamina A



Com DTP 3

\_\_\_ / \_\_\_ / \_\_\_



Com Sarampo

4 / 12 / 14



Part of the routine vaccination calendar.

Prescribed at 9 months of age.



Usually well accepted.

Low coverage prior to the epidemic.



# VACCINATION STRATEGY





# + Vaccination strategy

- The campaign began in Viana, Luanda
- From the 2nd of March 2016 until the 15th of October 2016
- Difficulties in obtaining ~25.000.000 doses, due to low stock availability.
- Target:
  - individuals over 6 months of age
  - Prioritizing people living in municipalities where local transmission had been detected
  - People living in risk areas such as border districts
- 19,657,280 vaccine doses were purchased and 18,057,272 individuals vaccinated in 85 municipalities

It should be noted that in the periods without epidemic, ICG maintains a minimum stock of 6 million doses for a possible outbreak, less than the needs of Angola (25 5273 243 doses).

# + Operational strategy

- Vaccination teams: health services, advanced vaccination posts and mobile teams to reach rural areas.
- In highly populated areas 3 - 10 teams were placed in one municipality.
- Each team had between 9 – 12 members.
- Each team had:
  - 2 vaccinators,
  - 2 vaccine preparation technicians,
  - 3 data loggers,
  - 2 or more mobilisers.
- In many areas 2-4 police officers to maintain public order.





- In each province, vaccination teams moved from one municipality to another.
- The vaccines were supplied by phases, which did not allow for synchronized vaccination in Luanda or rapid expansion to other provinces.
- The vaccination campaign progressed slowly:
  - Reduced trained human resources
  - Logistic support to maintain the cold chain in certain areas
- 30 days in Luanda as opposed to the recommended 10-15 days.



- Vaccination speed was improved by placing 5-10 vaccination teams in stadiums and markets and mobilizing people to those areas
- Additional human resources were trained
  - Field epidemiology Msc students
  - Volunteer health workers
  - Volunteer nurses
- Technical support documents were improved and vaccination campaigns in other provinces progressed faster reaching ~80% coverage in 10 days.



- ~3.200 vaccination teams were created representing ~42.100
  - MoH professionals
  - Military officials
  - National Police officers
  - Members of membros de NGOs
  - Students
  - Community volunteers.
  
- Average duration of campaigns was 16 days
  
- Average performance was 315 - 536 people vaccinated per day by each team pessoas vacinadas por dia pelas equipas.

# + Vaccine coverage per province

Province	Target*	Vaccinated	Coverage (%)
Luanda	6,583,216	6,136,300	93
Benguela	2,145,999	2,145,549	100
Bengo	219,270	175,351	80
Bie	426,780	411,357	96
Cabinda	692,521	696,985	101
Cuango Cubango	370,969	381,242	103
Cuanza Norte	256,358	217,200	85
Cuanza Sul	1,282,684	1,167,747	91
Cunene	868,715	737,674	85
Huambo	1,605,120	1,406,576	88
Huila	1,204,510	1,239,071	103
Lunda Norte	638,838	643,038	101
Lunda Sul	461,624	471,064	102
Namibe	55,211	55,457	100
Malange	621,900	515,531	83
Moxico	84,997	93,476	110
Uíge	970,319	1,099,137	113
Zaire	482,433	396,964	82

Vaccine coverage was ~88.9%.



# QUALITY CONTROL





- NO DATA WAS OBTAINED





# ADVERSE REACTION SURVEILLANCE





- NO DATA WAS OBTAINED



# MAIN CHALLENGES



# + Main challenges

- Vaccine distribution (shortage in the international market) the
- Under WHO and International Coordinating Group on vaccine (ICG) advice, vaccination was undertaken only in 85 of the 166 municipalities
- Information and communication with the communities (disbelief in NHS, cultural habits)



- Human resources and logistics
  - 5 times more people and a shorter time span than in previous large scale campaigns
  - Managing and maintaining cold chain for large volumes of vaccines
- Large quantities of biohazardous materials to be disposed



# Prespectives

- It is important complete the coverage of all population with full doses of YF vaccine and increase the coverage of routine immunization
- Public health priority: Understand coverage after the end of the mass vaccination campaign to assess risks of re-emergence of YF virus

## **Yellow fever vaccine coverage and arbovirus seroprevalence cluster survey**





Obrigada pela atenção

Gracias

Danke

Merci

Thank you