

# Feedback from the yellow fever mass vaccination campaign using fractional dose

Kinshasa, Democratic Republic of Congo  
17-26 August, 2016



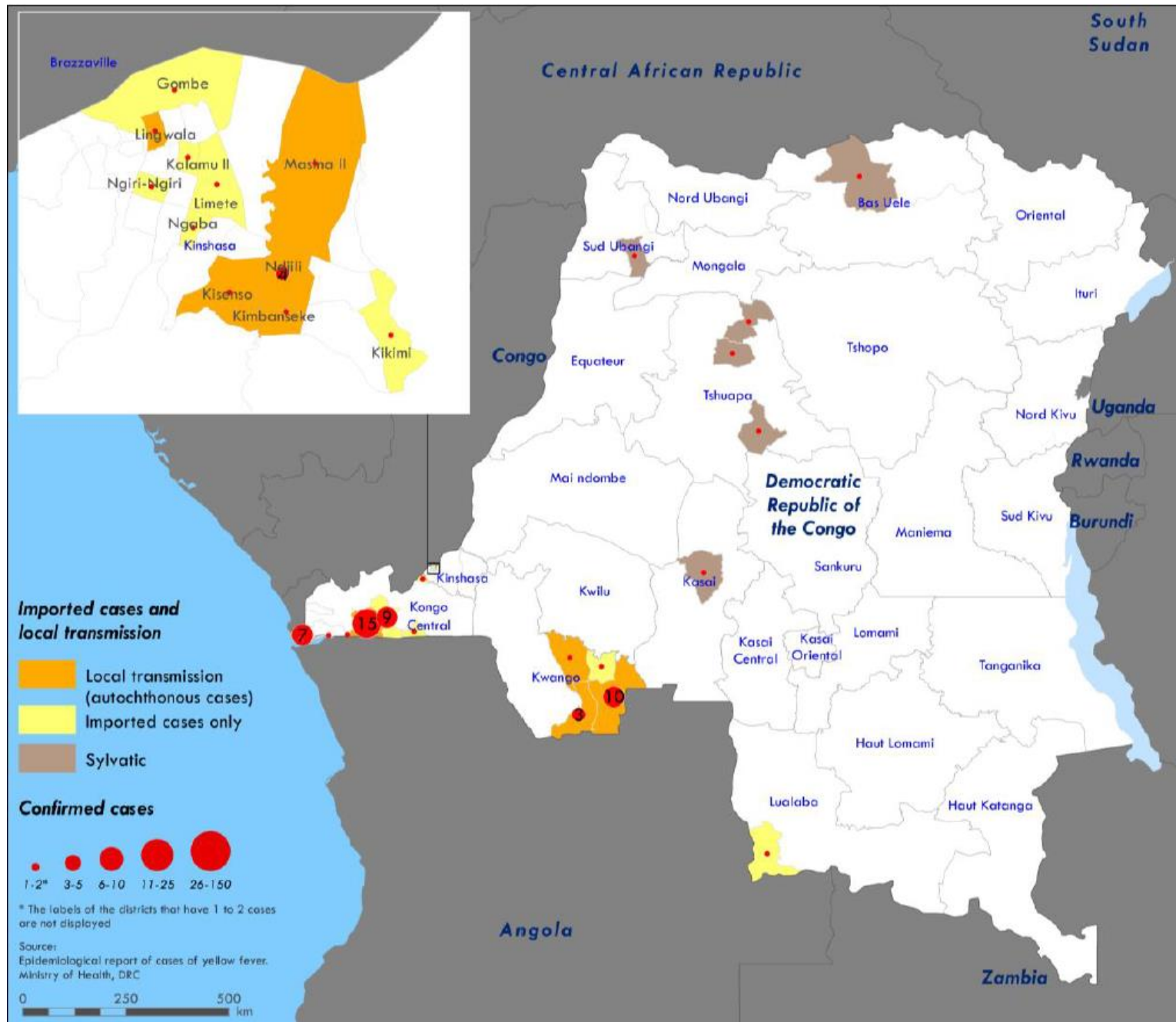
# Context

- Yellow fever outbreak in Angola (first case reported in Dec 2015) unique due to **urban nature**
- DRC reported cases in connection with Angola in March 2016, outbreak officially declared on 23 April 2016
  - **Local transmission in DRC** was confirmed in May 2016 in zones bordering Angola (13 confirmed cases to date are autochthonous)

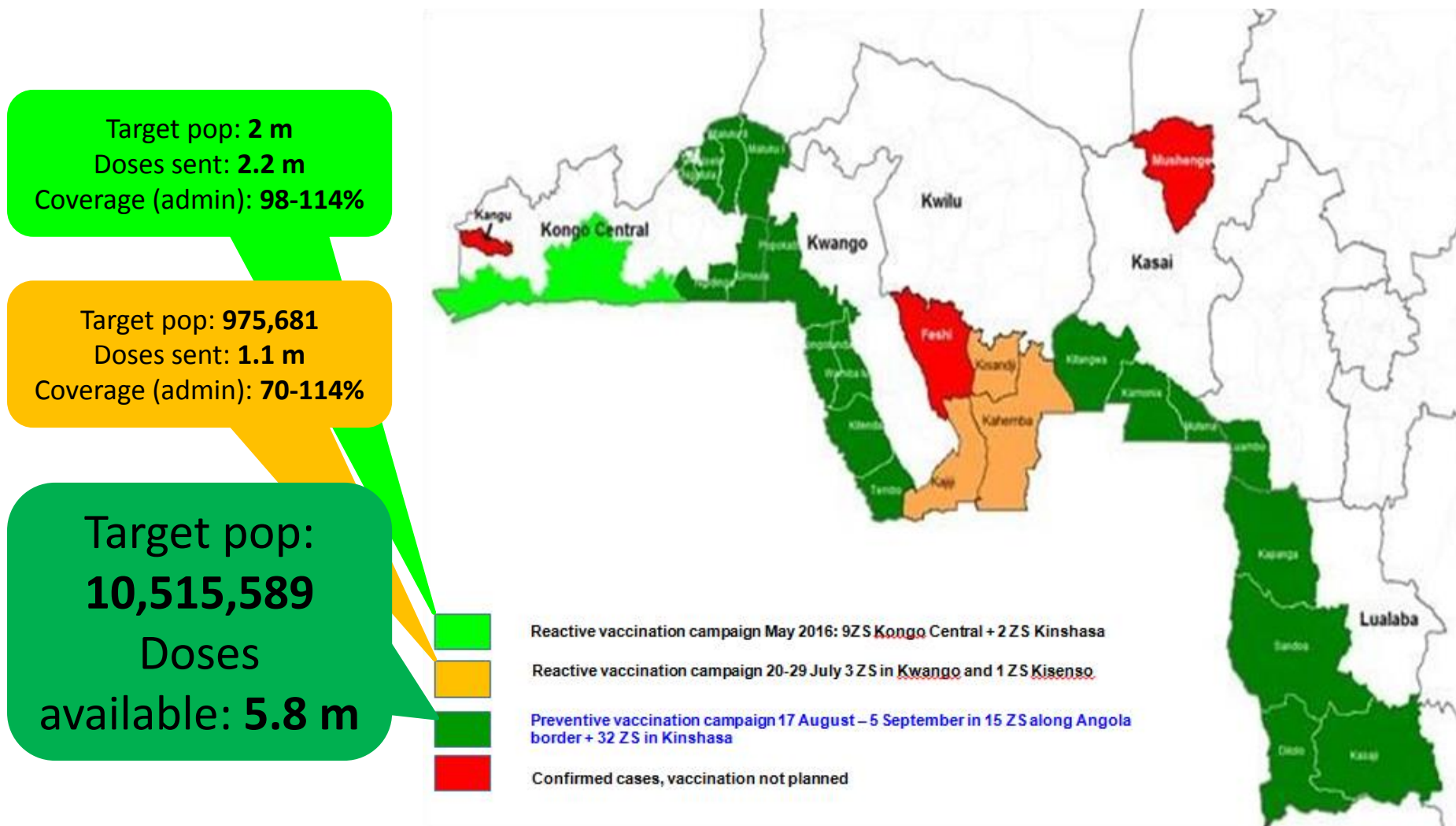
Cumulative data up to 12 October	ANGOLA	DRC
Total <b>cases reported</b> to central	4,220	<b>2,916</b>
Total samples tested	3,666	<b>2,800</b>
Total <b>confirmed cases</b>	884	<b>77*</b>
Total <b>reported deaths</b>	373	<b>120</b>
Total <b>deaths among confirmed cases</b>	121	<b>16</b>

\*including 7 cases of sylvatic YF not associated with the outbreak

# Distribution of confirmed yellow fever cases in DRC as of 12 October 2016



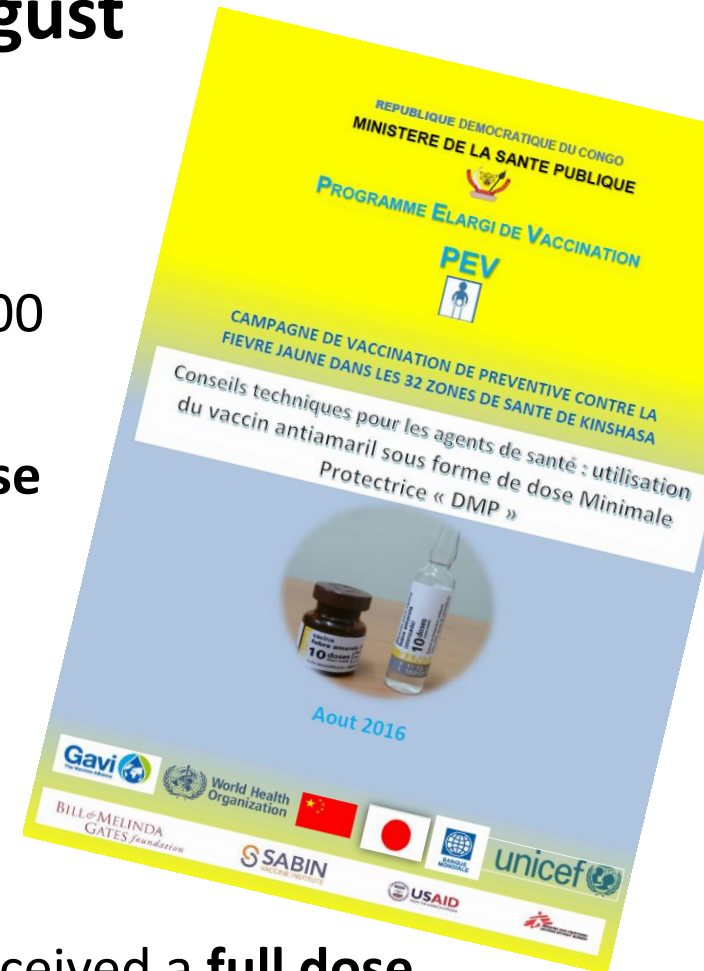
# Mass vaccination campaign response, DRC



# Preventive campaign using fractional dose

## Kinshasa, 17 – 26 August

- **Target area:** 32 health zones in Kinshasa
- **Target population:** **7,586,400**
- **Vaccine doses available for Kinshasa:** 2,500,000
- **In order to ensure rapid vaccination of entire target population in Kinshasa, a fractional dose strategy was considered:**
  - **Fractional dose:** 1/5<sup>th</sup> (0.1 ml) of full dose administered subcutaneously (SC) using BCG syringe and needle
  - Everyone over the age of 2 years would receive a fractional dose (“**minimal dose**”)
- Children 9-23 months and pregnant women received a **full dose**



# Regulatory considerations

- Considering the global supply situation and the recommendations by WHO, National authorities in DRC provided approval to use fractional dose for the first time in the country
- Political decision to go ahead with the campaign
- **In-country approval process**
  - Meeting in Geneva with DG, IVB and PED teams to clarify issues
  - Waiver was granted to import vaccines
  - Import authorizations and registration in country were handled in the emergency context
  - **Vaccine:** 10 full-dose vials (5 ml per vial), Bio-Manguinhos (Brazil)

# Logistical challenges

- 3 different types of syringes were required (0.5 ml for full dose, 0.1 ml for fractional dose, 5 ml for reconstitution) – **over 13 million** syringes shipped!
- Availability of 0.1 ml syringes was limited in the country – 2 million borrowed from polio stockpile
- Vaccine from Brazil was without VVM: challenge to have sufficient quantities of vaccine carriers to maintain cold chain. Provision of additional **3800 vaccine carriers and 200 coolers**.
- Waste management for such a large scale campaign





# Communications and Training

- 1 day training was conducted for all vaccination staff
- Fractional dose communicated as “**minimal dose**”
- Press conference held prior to campaign with key press offices in Kinshasa
- Social mobilization through proactive engagement of local television, print and radio media, posters, banners, announcements and door-to-door visits



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# Information posters and bulletins

## FIÈVRE JAUNE

**PROTÉGEZ-VOUS CONTRE LA FIÈVRE JAUNE**

**CONSULTEZ UN MÉDECIN SI VOUS PRÉSENTEZ LES SYMPTÔMES SUIVANTS**

**Le virus de la fièvre jaune est transmis par les moustiques**

- Faites-vous vacciner
- Portez des vêtements couvrant le corps
- Dormez sous une moustiquaire
- Placez des écrans anti-insectes aux fenêtres
- Utilisez des produits répulsifs
- Fièvre
- Jaunisse
- Douleurs musculaires
- Maux de tête
- Saignements

**LE VACCIN CONTRE LA FIÈVRE JAUNE** est la meilleure protection contre la maladie

unicef Organisation mondiale de la Santé République Démocratique du Congo Fédération internationale des Sociétés de la Croix-Rouge et du Croissant-Rouge

## CAMPAGNE DE VACCINATION PREVENTIVE CONTRE LA FIÈVRE JAUNE DANS 32 ZONES DE SANTÉ DE KINSHASA ET 15 ZONES DE SANTÉ FRONTALIÈRES AVEC L'ANGOLA, AOÛT 2016

BULLETIN N°01 05/08/2016

Gavi Organisation mondiale de la Santé unicef

LA RDC FAIT FACE depuis le mois de mars 2016 à une épidémie importée de l'Angola dont 13 cas autochtones. A l'appui de ses partenaires différents, la RDC organise une campagne réactive visant à vacciner les 92S du Kongo, les 32S du Kwango et 12S de Kinshasa. Les 15 ZS restantes de la ville de Kinshasa se préparent à l'organisation d'une campagne de vaccination. Les 15 ZS s'étendent de la Province de Kinshasa (Tembo, Kasongolunda, Kasai 12S (Luambo), Kasai 32S (Kasanga, Kasaji, Sandoa).

Les symptômes spécifiques de la fièvre jaune apparaissent 3 à 16 jours après l'infection. Les symptômes sont : fièvre, maux de tête, douleurs musculaires, jaunisse, saignements.

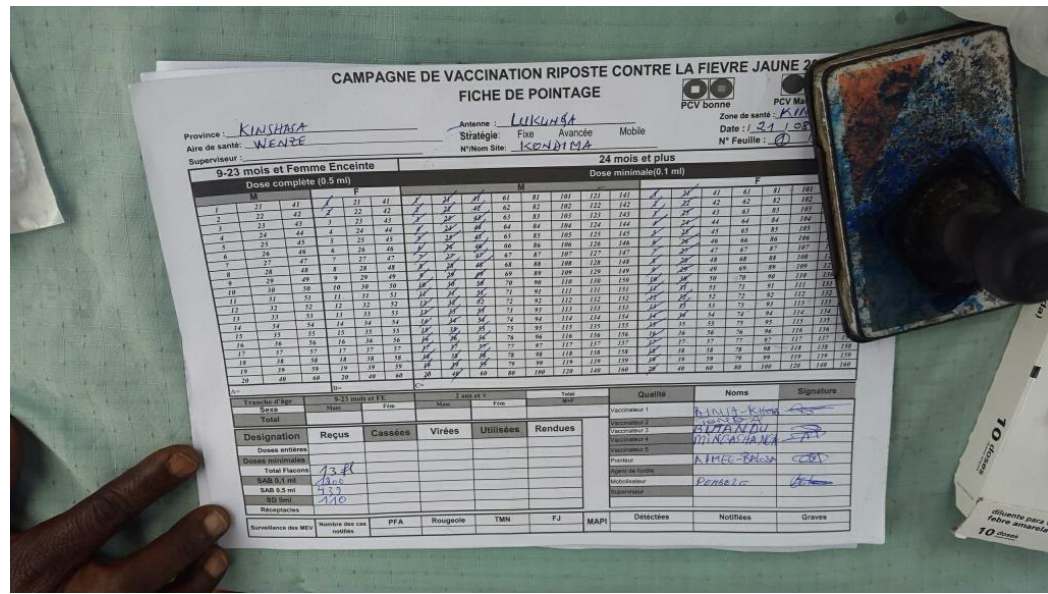
9 mois et plus dans les 47 zones de santé de Kinshasa et 2 888 588 personnes.

# Implementation

- **Fixed posts:** 2,404 immunization posts were operational for 10 days of vaccination
- **Teams:** 14,424 vaccinators supported the campaign
  - Each team included a minimum of 5 vaccinators, 2 recorders, 1 social mobilizer/community engagement expert, 1 volunteer to maintain order, and 1 for waste management
- **Monitoring:** 32 WHO supervisors and 96 independent campaign monitors were deployed across all 32 zones

# Recording

- Tally sheets recorded full and fractional dose administration
- Vaccine recipients were given a specially designed card indicating which dose (full or fractional) was received.
- The cards also included a disclaimer that they were not considered YF certificates valid for international travel







PROGRAMME ELARGI DE VACCINATION  
CAMPAGNE DE VACCINATION CONTRE LA FIEVRE JAUNE

Province : \_\_\_\_\_ Zone de santé : \_\_\_\_\_

Dose administrée: Dose **entière**  Dose **minimale**

Date de vaccination: \_\_\_\_/\_\_\_\_/20\_\_\_\_

Nom / Prénom: \_\_\_\_\_

Age: \_\_\_\_\_ Sexe : \_\_\_\_\_

VAA N° Lot: \_\_\_\_\_ Diluant N° lot: \_\_\_\_\_

**Conservez cette carte avec votre carnet de vaccination/de santé.**

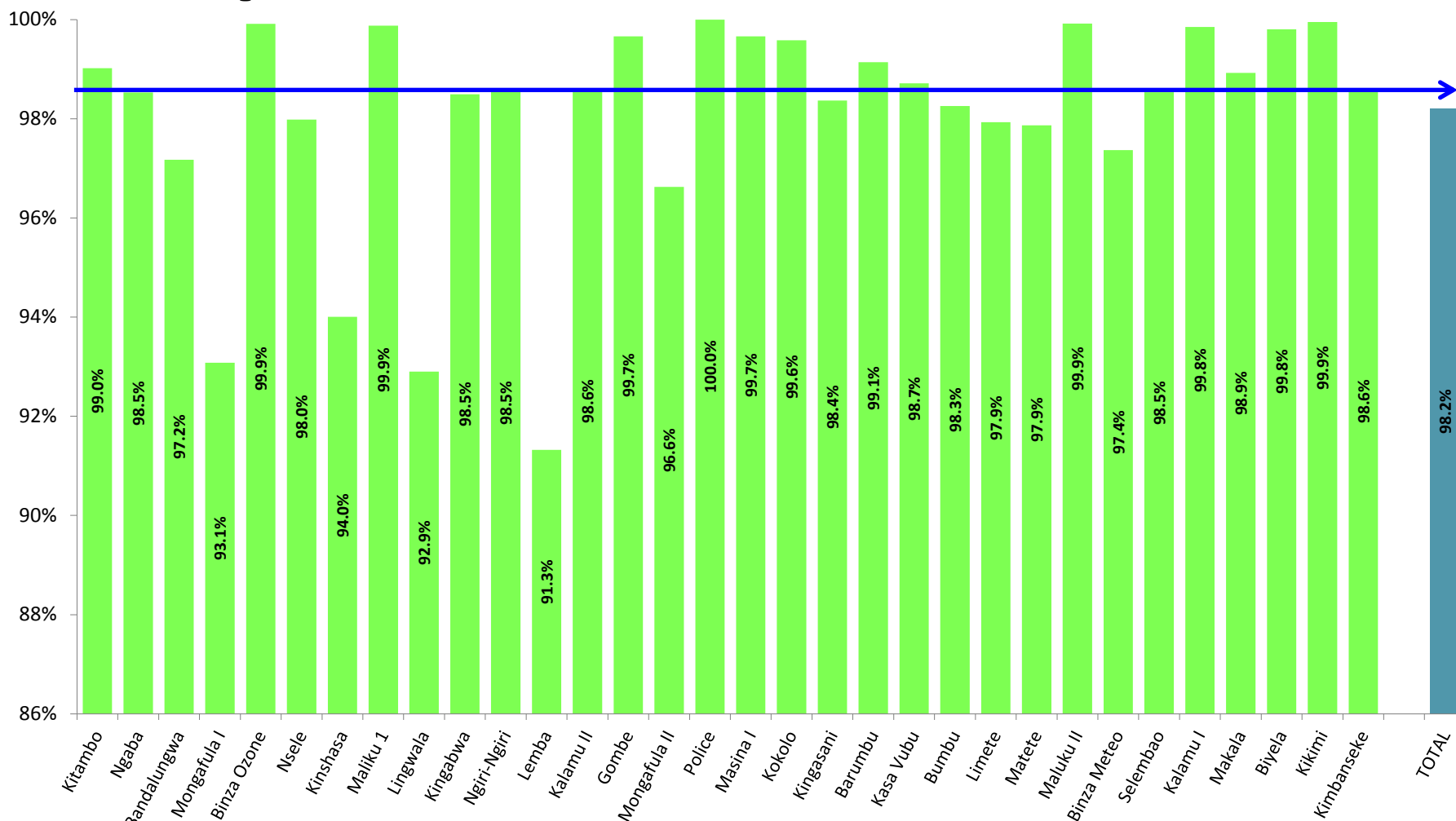
*Note: Ce document n'est pas un certificat de vaccination contre la fièvre jaune et n'est pas valide pour voyager*



# Campaign coverage

Administrative coverage	
Target population	7,586,400
No. reported vaccinated (total)	7,898,365
No. reported vaccinated (fractional dose)	7,466,998
No. reported vaccinated (full dose)	431,367
Coverage (administrative)	<b>104%</b>
Rapid convenience assessment	
Households sampled	10,300
No. respondents	58,021
No. respondents reported vaccinated	56,974
Coverage (RCA)	<b>98%</b>

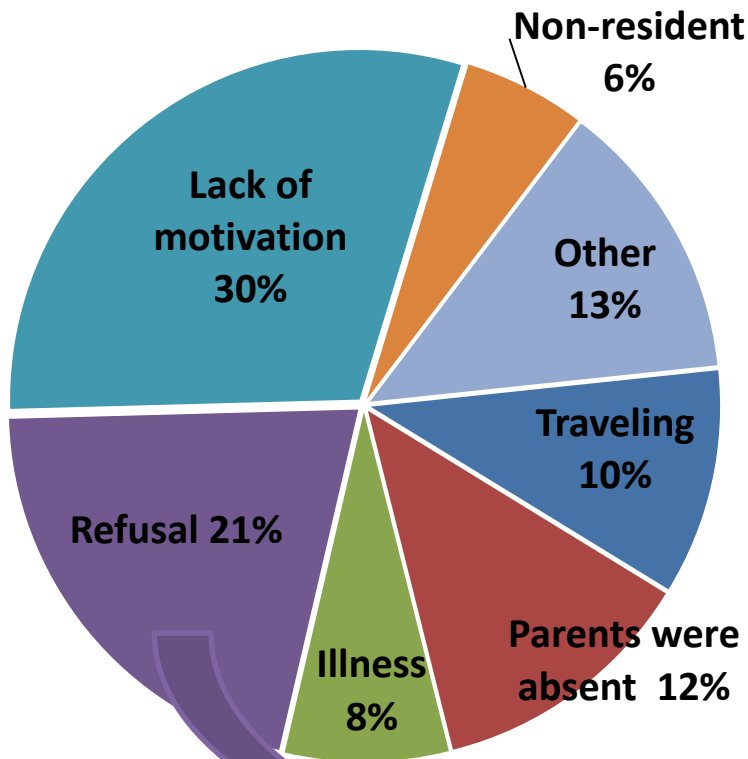
# Rapid convenience assessment



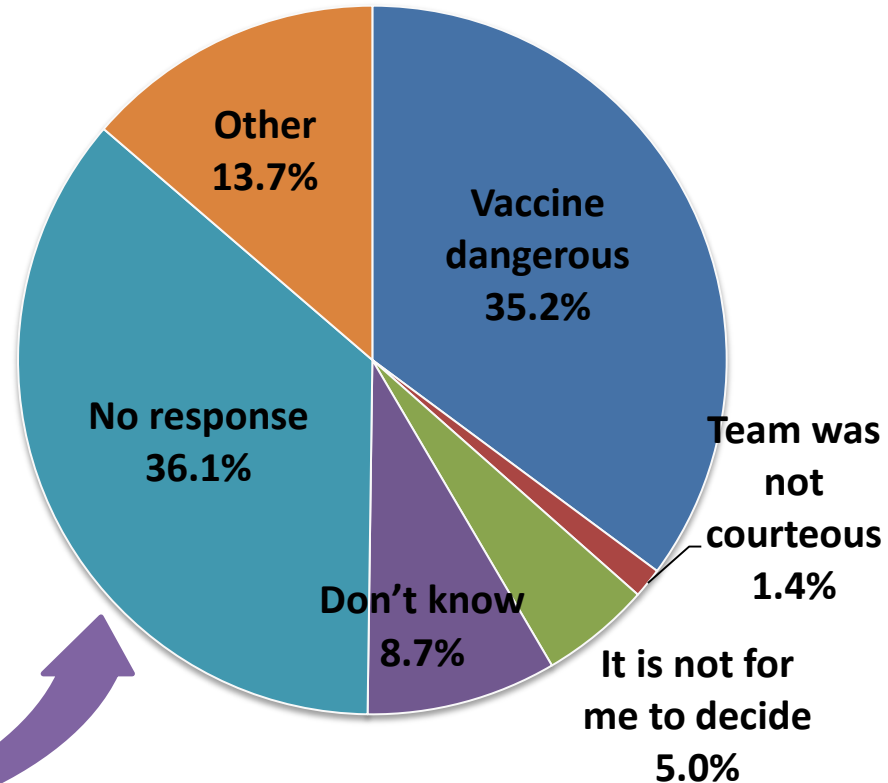


# Vaccine acceptance

Reasons for non-vaccination (n=1,046)



Reasons for vaccine refusal (n=219)



\*data from Rapid Convenience Assessment = 58,021 respondents



# Waste management

- More than 20,232 safety boxes were collected and safely incinerated following the campaign



(over 11,000 tonnes of waste generated).



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# Immune evaluation of fractional dose

INRB/US CDC study

- **Primary Objective:** Assess the immunologic response to a fractional dose of YF vaccine **28 days** after vaccination by age group
- **Secondary objectives:**
  - Determine if **pre-existing flavivirus antibodies** influence the immunologic response
  - Assess whether the fractional dose vaccination results in sustained immunologic response at **12 months** post vaccination.
- **4 age strata:** 2-5 years, 6-12 years, 13-49 years, 50+ years
- Results expected late 2016 / early 2017



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# Main challenges noted

Programmatic Consideration	Experience in Kinshasa
Maintenance of adequate cold chain at immunization sessions, given low thermostability of reconstituted YF vaccine	Cold chain maintenance at the immunization sessions was a major concern – 69% of sites observed did not have temperature monitoring devices; 16% were not correctly keeping reconstituted vials in the foam cushion; 11% did not have sufficiently cold ice packs
AEFI reporting and investigation	<ul style="list-style-type: none"><li>• AEFI monitoring did not generate sufficient data to enable comparison between fractional and full doses</li><li>• Information on AEFI reporting was only available for vaccination sites (no reports from healthcare facilities)</li><li>• Most of the AEFI notifications from the vaccination sites were lacking individual case based reporting forms</li><li>• Patient care was delayed in reference hospitals and investigation was not carried out at district/province level for all suspected serious cases due to the absence of resources allocated to that activity.</li></ul>



# Operational Experiences Gained

Programmatic Consideration	Experience in Kinshasa
Administration of 0.1mL or 0.5mL, variable by population	Vaccinators understood the programme and were able to administer correct doses to the variable groups.
Wastage	Average numbers of fractional doses able to be drawn from each vial were not accurately counted, however, an average wastage rate of only 3.2% (0.3% - 8.8%) was calculated overall.
Availability of 0.1mL syringes	Procured sufficient volumes through manufacturer and loan from Polio program.
Septum integrity with multiple piercings	Despite multiple punctures to the vial septum, no leakage or bits of septum degradation/debris were observed in any of sessions.
Community understanding and acceptance	Fractional dosing was generally well understood by the population, but questions were raised. No significant resistance to fractional dose observed; No issues with false rumours or concerns specifically related to fractional dosing

