The Urgepi project - Developing locally adapted measles vaccination strategies in the DRC

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epicentre
ÉPIDÉMIOLOGIE • EPIDEMIOLOGY

MEDECINS
SANS FRONTIERES

The Urgepi project

- Project started in 2018 – strategy revised in 2021
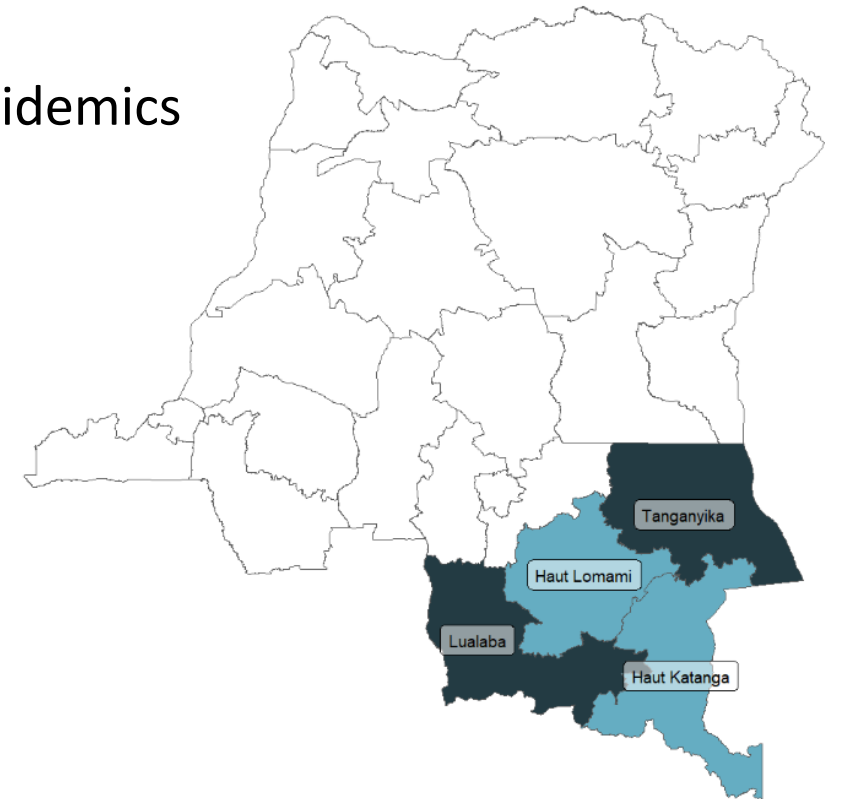
- **Objective:**

    To improve strategies of prevention/response for measles epidemics

- **Type of activities:**
    - Preventive vaccination activities
    - Surveillance
    - Biological confirmation (laboratory in Lubumbashi)
    - Interventions (vaccination, case management)
    - Operational research

- Targeted approach through identification of **high-risk (priority) health zones (HZ)**

Implementation in 4 provinces (Katanga region - DRC):

The Urgepi project

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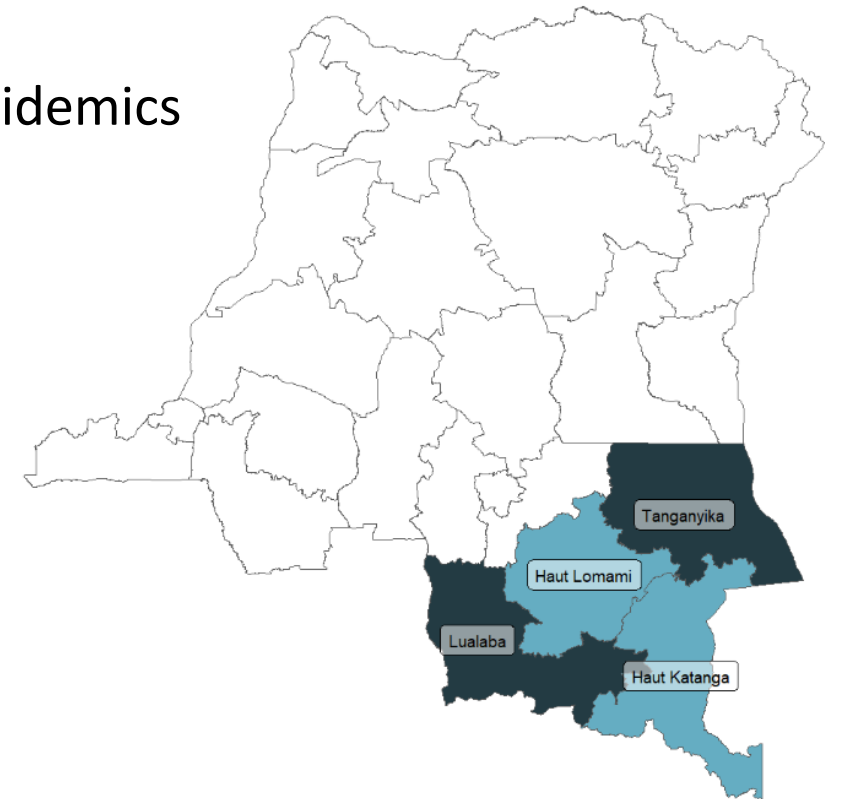
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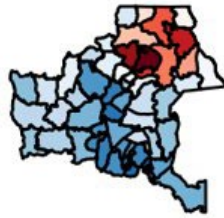# The Urgepi project – Preventive Vaccination Activities

1) Evaluation of preventive vaccination activities in 2021

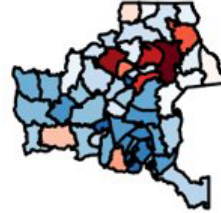2) Preventive vaccination strategies in 2024/2025

Selection of priority HZ in 2021
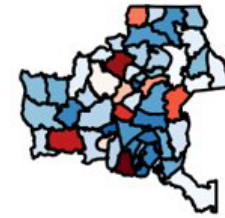
**Model-based
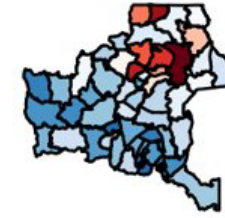risk ranking:**

Vaccination coverage
(DHS 2014)

Estimated number
non-vaccinated

Estimated number
susceptible

Final
prioritization

+ Other criteria:

- Focus on Haut-Katanga for logistical reasons
- Model-based ranking combined with alternative risk analysis
- ➢ **21 priority HZ** (11 Haut-Katanga, 3 Haut-Lomami, 3 Lualaba, 4 Tanganyika)

Preventive vaccination activities 2021

- Preventive vaccination activities in 9 priority HZ in collaboration with MoH

- Depending on the HZ the activities targeted:
  - all children aged 6 to 59 months (Dilolo, Kasaji, Kinkondja, Mukanga, Kabongo)
  - all children 6 to 23 months (Manono, Kyiambi)
  - selectively unvaccinated children aged 9 to 23 months (Pweto, Kilwa)

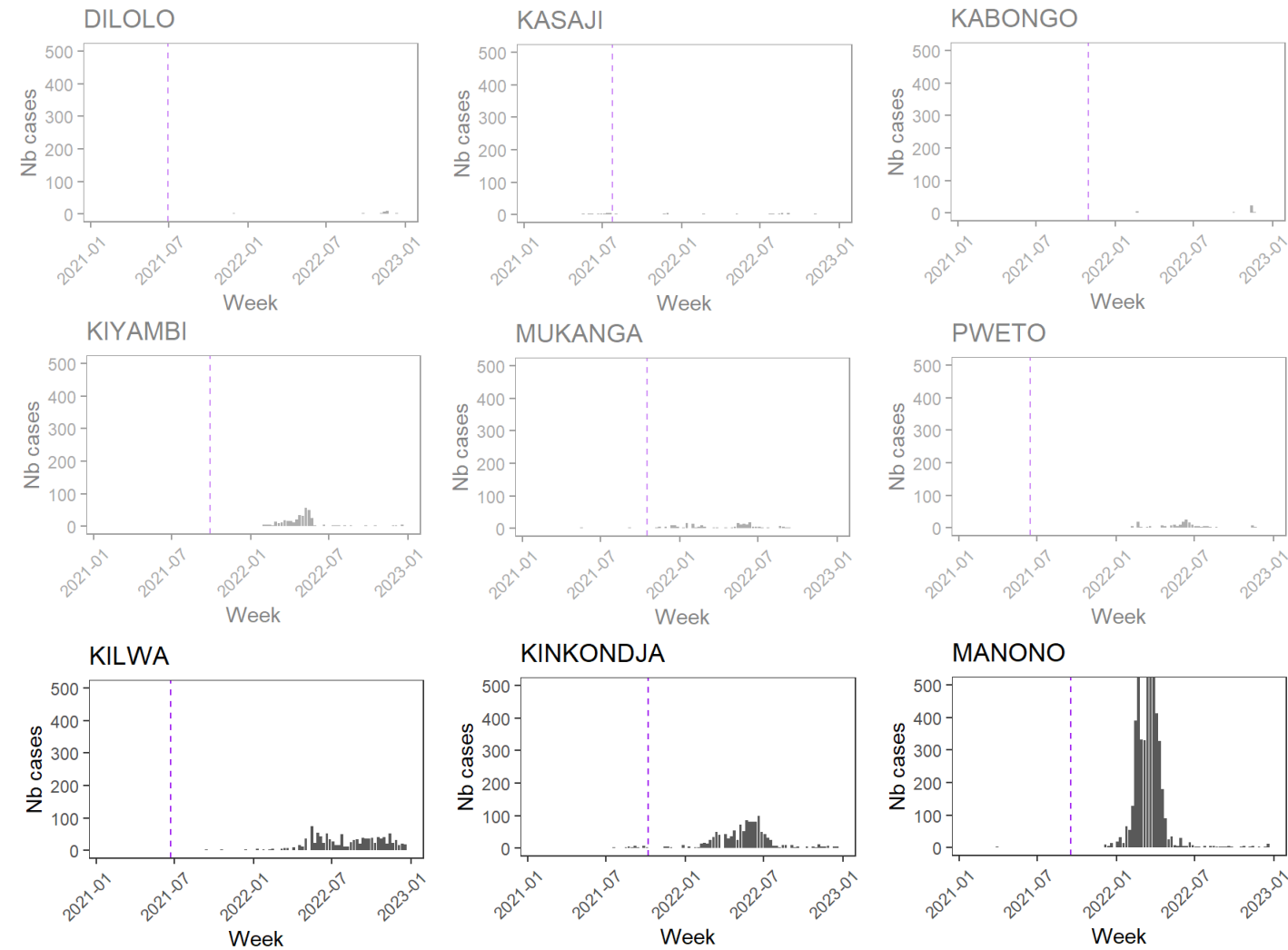# What happened in priority HZ without preventive vaccination?
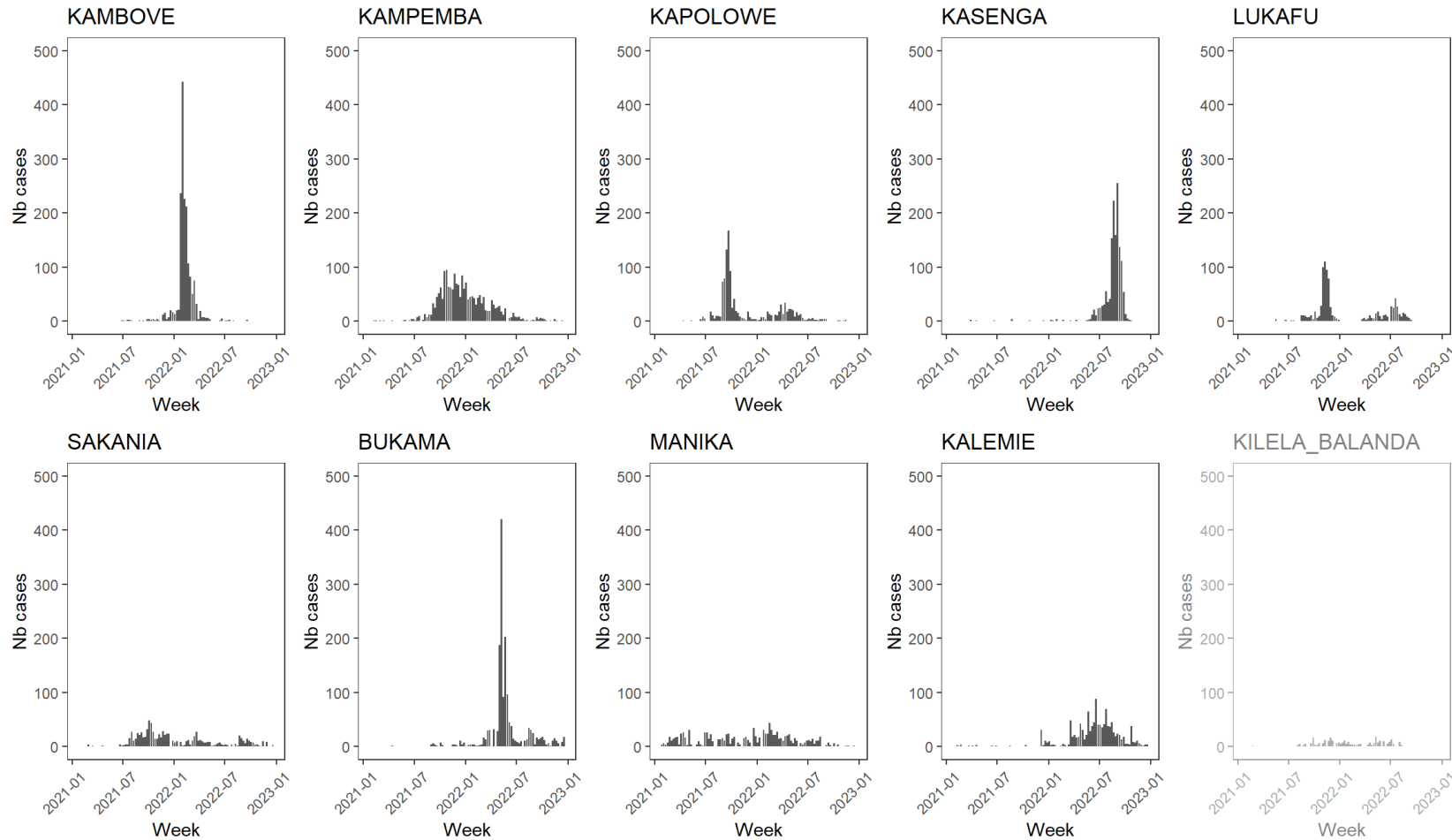
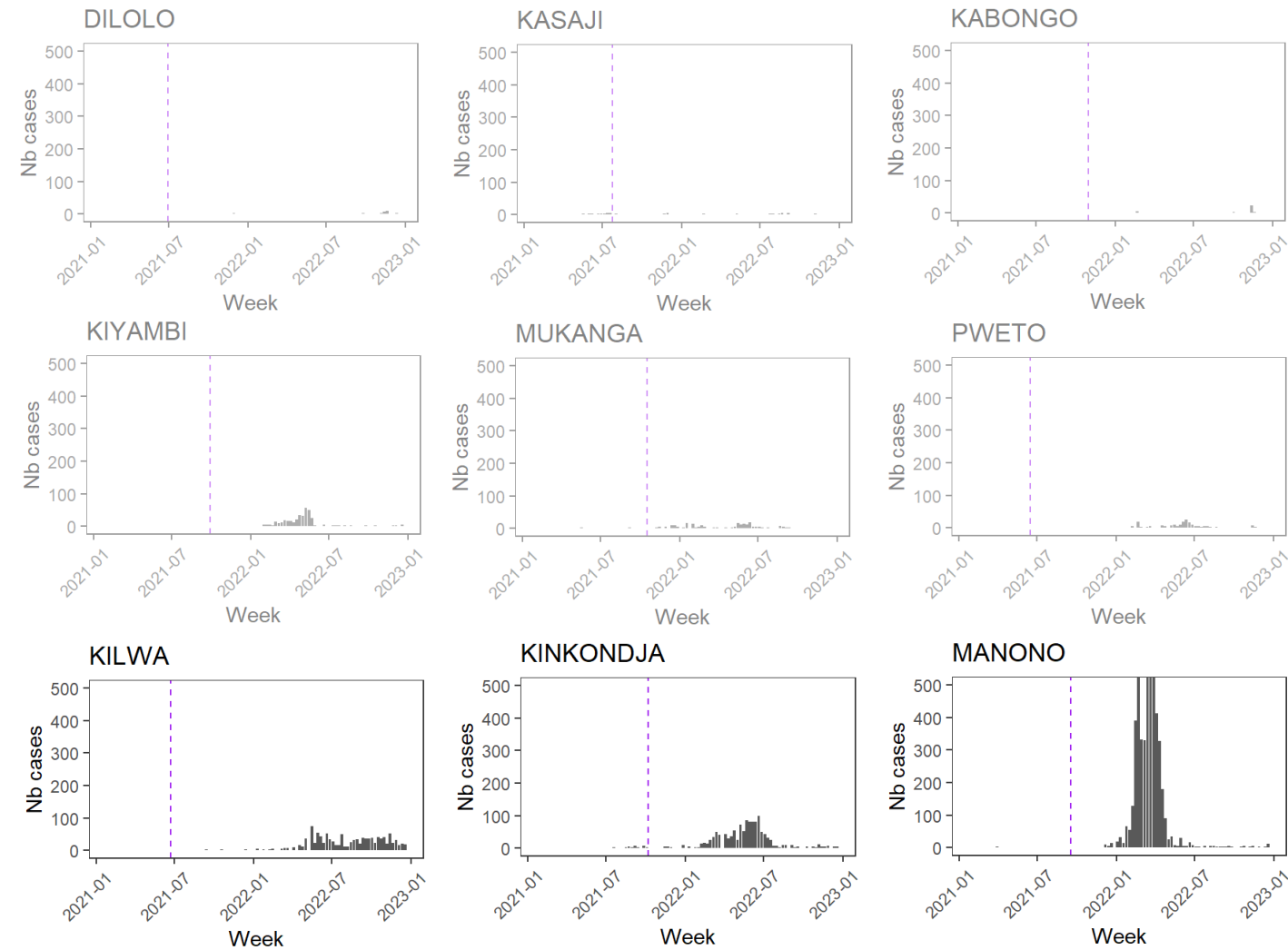- 9/10 unvaccinated priority HZ* experienced a large epidemic

*excluding 2 priority HZ with early reactive vaccination

Impact of preventive vaccination

- Preventive vaccination likely **averted large epidemics in 6/9 vaccinated priority HZ**

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- Evaluation based on number and % of ZS experiencing large epidemics (≥500 cases) or the median attack rate:

| Type of ZS	Nb HZ ≥500 cases	Nb HZ total	%HZ ≥500 cases [95%CI]	p-value	Median AR per 100,000
Priority HZ without early vaccination	9	10	90.0 [55.5-99.7]	Ref.	401
Preventive	3	9	33.3 [7.5-70.1]	0.02	103

Epidemics in 3 HZ with preventive vaccination
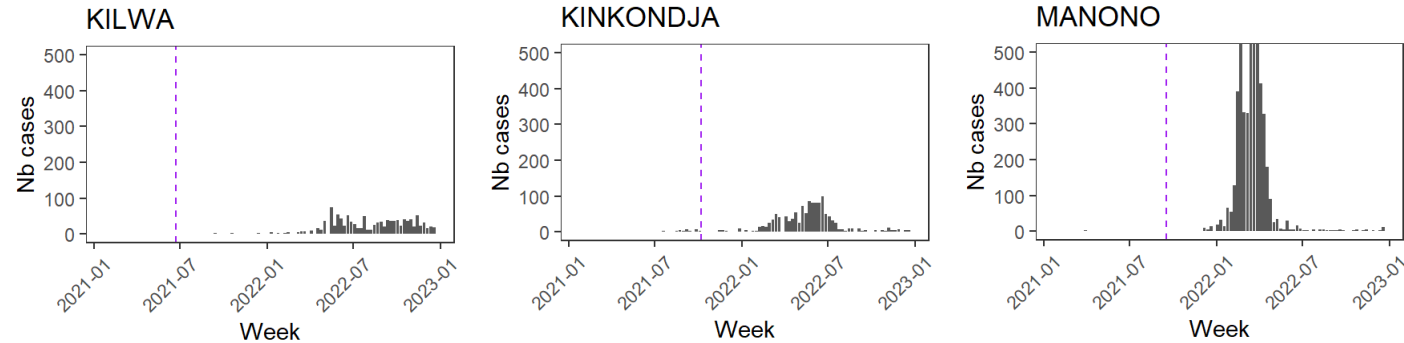
Epidemics in 3 vaccinated priority HZ likely due to low coverage:

- All three epidemics were biologically confirmed (not rubella)

- Cases occurred in age-groups that were part of vaccination target

- While measles epidemics were limited to geographic pockets in Kilwa and Kinkondja, the entire HZ was affected in Manono

- Vaccination coverage surveys in Manono and Kinkondja confirmed low coverage
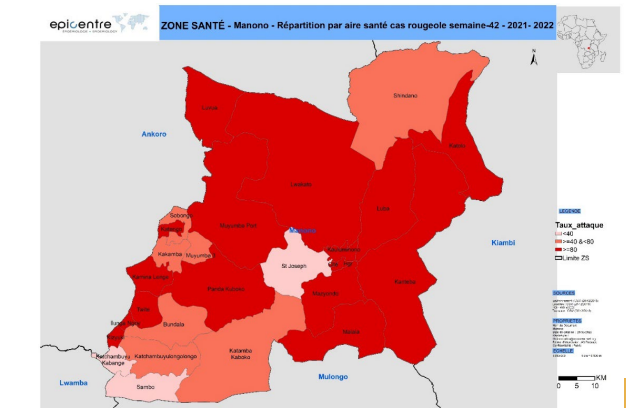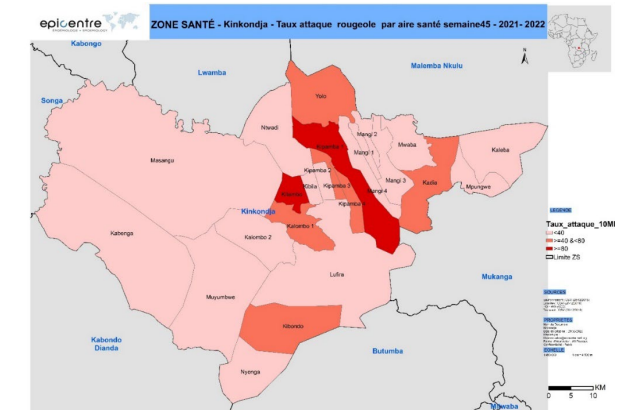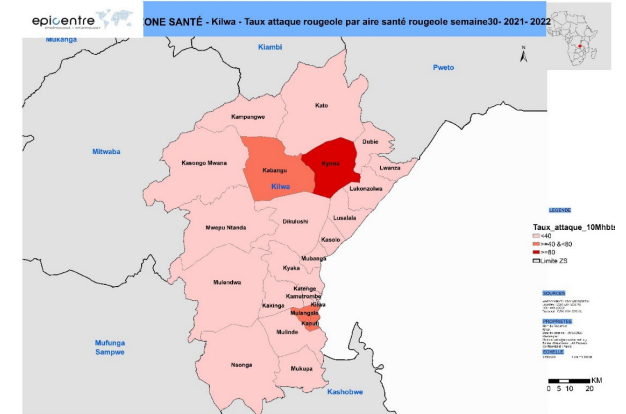
Conclusion – Evaluation of Preventive Activities

- Preventive vaccination in high-risk zones is a powerful strategy, particularly in areas with difficult access during certain periods of the year (e.g. rainy season)

- Locally adapted strategies may be needed in some places to improve vaccination coverage and prevent epidemics fully

Conclusion – Evaluation of Preventive Activities

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Recommendations for 2024/2025

- Selection of high-risk health zones based on low historical vaccination coverage

- Development of vaccination strategies that are targeted towards geographic areas or population groups with low vaccination coverage

- IOA to better understand immunization barriers to improve vaccination coverage in challenging locations

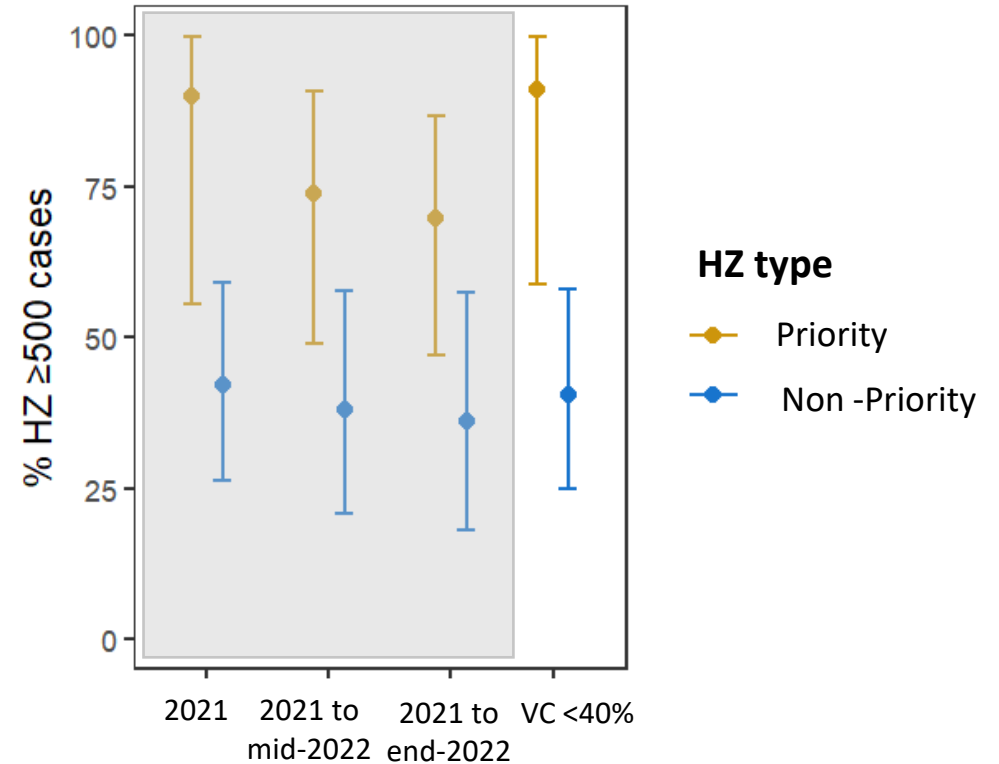# The Urgepi project – Preventive Vaccination Activities

1) Evaluation of preventive vaccination activities in 2021

2) Preventive vaccination strategies in 2024/2025

Selection of Health Zones for Preventive vaccination

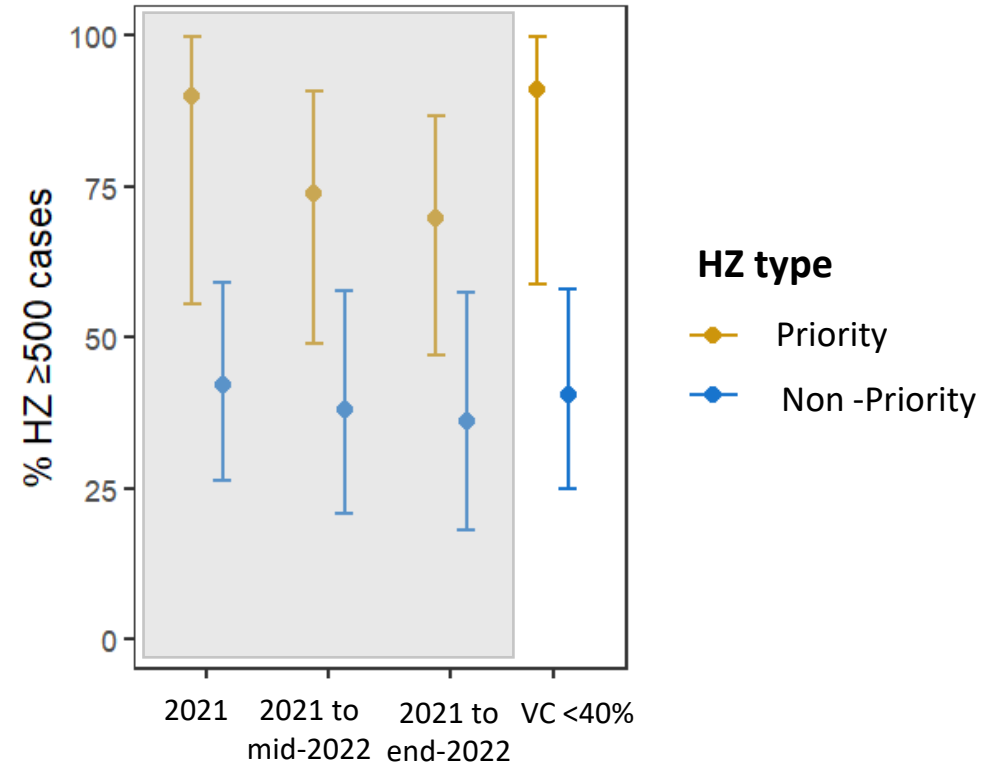- Health zones with low vaccination coverage in Katanga region:

  - <40% based on DHS 2014 survey was good predictor for large epidemics

  - Compare to more recent coverage estimates

Selection of Health Zones for Preventive vaccination

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- Selection of health zones together with MoH that face different challenges:

  - Difficult geographical access, insecurity, mobility of population, comorbidities

# Targeted Vaccination – Selecting Health Areas

- How to avoid to re-vaccinating already immunized children?

- How to find and target non-vaccinated children?

Targeted Vaccination – Selecting Health Areas

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- Vaccination coverage often varies within a health zone:

Reactive vaccination, Kabondo Dianda 2022
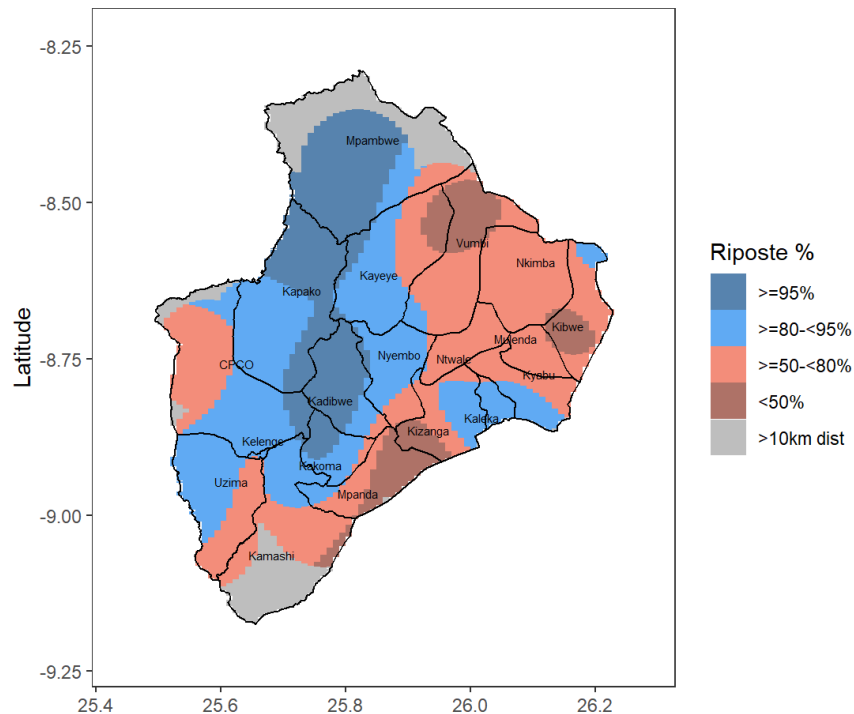
Preventive vaccination, Manono 2021
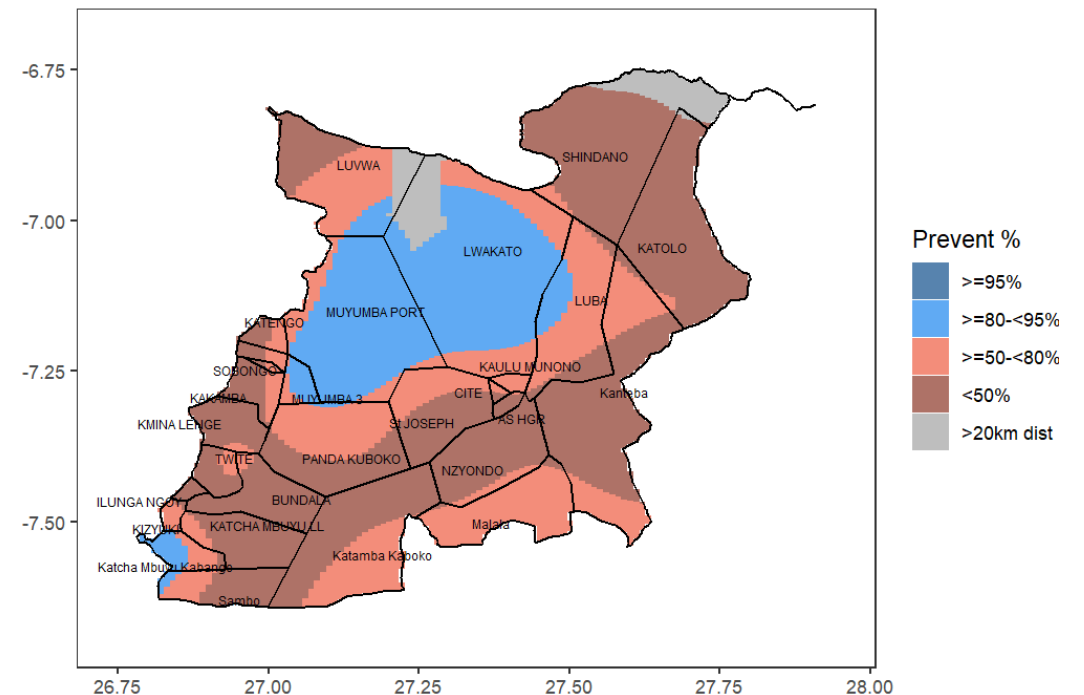
Developing Locally Adapted Vaccination Strategies

1. Communtiy based vaccination coverage survey: Where are pockets of low coverage?

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Where are pockets of low coverage?

→

2. IOA approach:
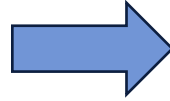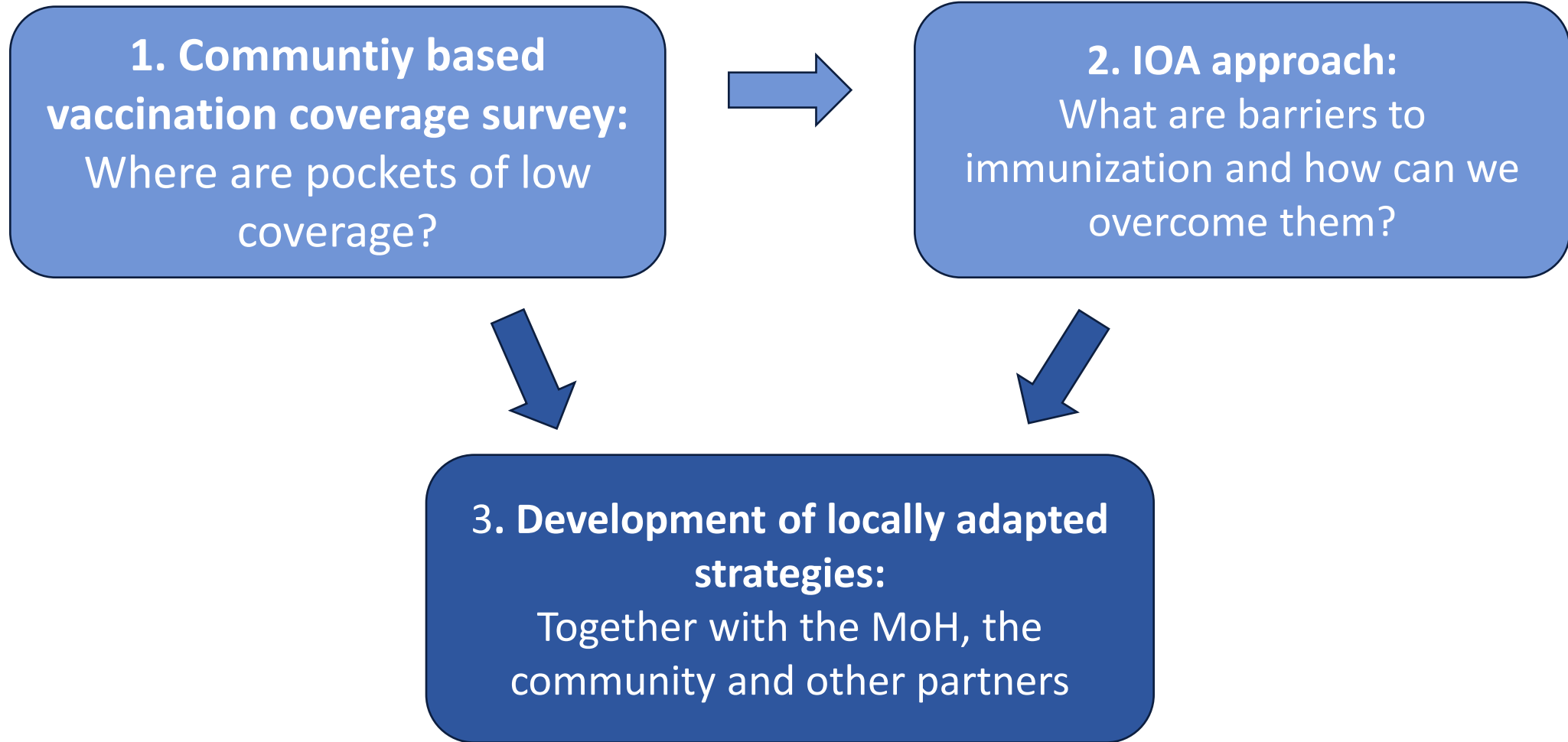What are barriers to immunization and how can we overcome them?

Developing Locally Adapted Vaccination Strategies

1. Communtiy based vaccination coverage survey:
Where are pockets of low coverage?

2. IOA approach:
What are barriers to immunization and how can we overcome them?

3. Development of locally adapted strategies:
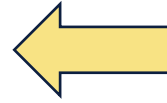Together with the MoH, the community and other partners

Evaluation of Vaccination Strategies

Implementation of locally adapted vaccination strategy

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Implementation of locally adapted vaccination strategy

1. Vaccination coverage survey at vaccination sites during activities: Are we vaccinating non-vaccinated children?
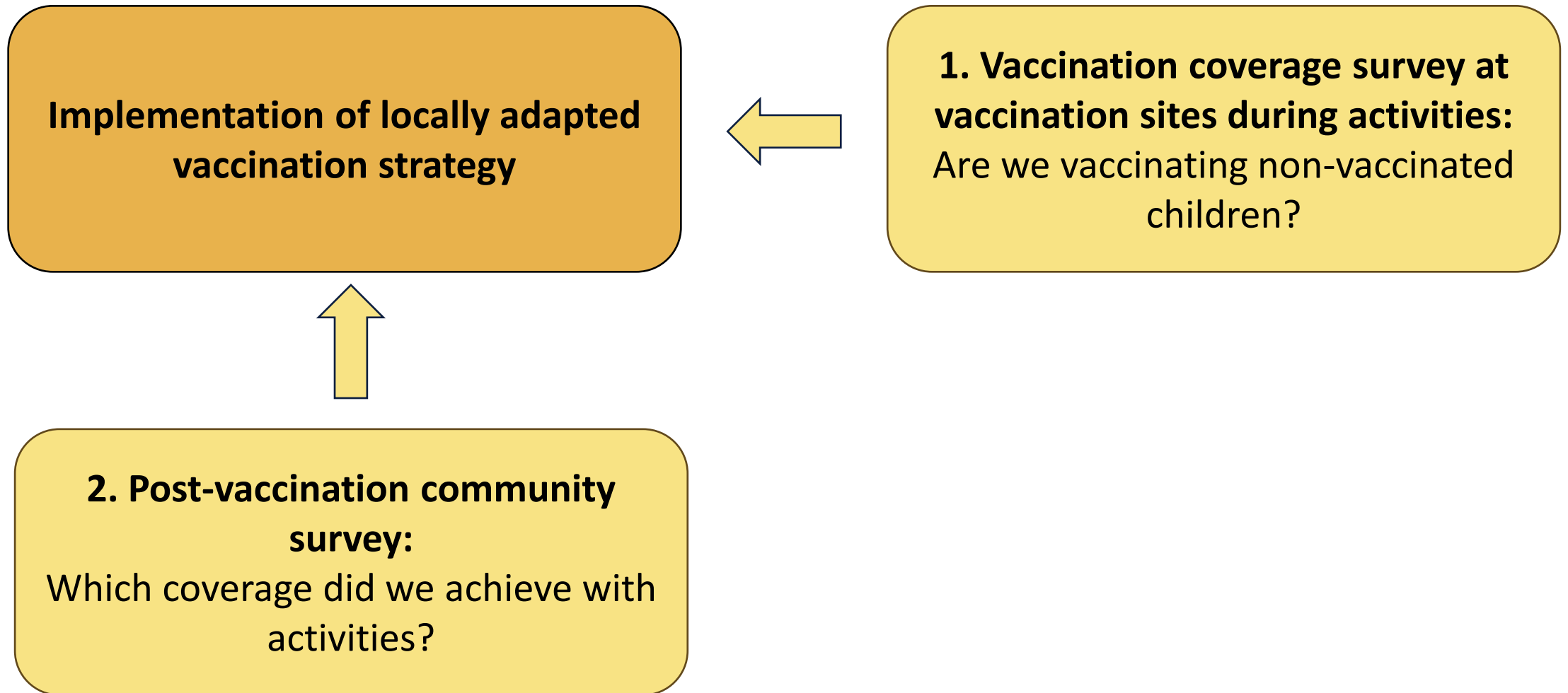
Evaluation of Vaccination Strategies

Implementation of locally adapted vaccination strategy

1. Vaccination coverage survey at vaccination sites during activities:
Are we vaccinating non-vaccinated children?

2. Post-vaccination community survey:
Which coverage did we achieve with activities?

Conclusion

- Preventive vaccination is a powerful strategy to prevent measles epidemics

- Locally adapted vaccination strategies needed to improve impact

Strategic Plan 2024/2025

- Using vaccination coverage surveys and IOA approach to inform vaccination strategies

- Evaluation of vaccination activities with 2 types of vaccination coverage surveys

- Chronogram: 2 high-risk health zones in 2024 and 2 high-risk health zones in 2025

Urgepi project team

MSF – OCP

Epicentre
Cellule d'Analyse Integrée, DRC

Ministry of Health DRC

INRB Kinshasa

Grand Laboratoire de Lubumbashi

Thank you!!

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