Hit early, hit hard:

feasibility and efficiency of the “Coup de Poing” measles outbreak response in the Democratic Republic of Congo

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Measles in the DRC

Recurrent measles outbreaks since 2010, despite high administrative vaccination coverage...

...300,000 suspected cases notified from 2011 to 2013

Typical pieces of information, after an evaluation:

“…115% measles vaccination coverage in 2014 (administrative)”

“…9/15 health areas accessible only on foot, 1 refrigerator available in the health zone, chronic shortage of fuel, EPI coverage 27% in 2014”
“Classic” vaccination response

Intervention typically starts from most populated/easily accessible area, and proceeds to cover the health zone (upscaling & speed of coverage)

- **MSF-style**: log/fin/HR heavy, but high coverage
- **MoH/WHO-style**: lighter to implement, but lower coverage
Let’s do it differently – Coup de Poing

**Possible solution:** a targeted approach

- Start with “commando approach”, vaccinating the epicenter of the outbreak:
  - 50-75% of the cases (20-30,000 pop.)
  - Move quickly, with motorcycle teams
  - Passive cold chain
- Vaccinate remaining susceptible population
Does it work? – objective

To compare between the “classic” and “Coup de Poing” measles vaccination approaches in DRC

- The timeliness of the response following the declaration of an outbreak
- The outbreak characteristics and dynamics

...in order to assess the feasibility and efficiency of the Coup de Poing approach
Included interventions

Classic (2012-2013)
- Djolu
- Yambuko
- Yaleko
- Yalimbongo
- Yahuma
- Yahisuli

Coup de Poing (2013)
- Wamba
- Tembo
- Kamonia
- Mutena
Timing of the interventions

The outbreak intervention can be broken down into 4 phases:

- **Alert-explo**
- **Explo-intervention**
- **Intervention-start vaccination**
- **Start vaccination-end vaccination**

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**Mean duration (days)**

**Classic**

**Coup de Poing**
Timing of the interventions

- First vaccine (classic)
- First vaccine (CdP)
- Start intervention (CdP)
- Start intervention (classic)
Outbreak characteristics

<table>
<thead>
<tr>
<th>Location</th>
<th>Attack Rate</th>
</tr>
</thead>
<tbody>
<tr>
<td>Yambuko</td>
<td>0%</td>
</tr>
<tr>
<td>Yaleko</td>
<td>5%</td>
</tr>
<tr>
<td>Yalimbongo</td>
<td>2%</td>
</tr>
<tr>
<td>Yahuma</td>
<td>4%</td>
</tr>
<tr>
<td>Yahisuli</td>
<td>3%</td>
</tr>
<tr>
<td>Djolu</td>
<td>2%</td>
</tr>
<tr>
<td>Kamonia</td>
<td>1%</td>
</tr>
<tr>
<td>Tembo</td>
<td>1%</td>
</tr>
<tr>
<td>Wamba</td>
<td>0.5%</td>
</tr>
<tr>
<td>Mutena</td>
<td>0%</td>
</tr>
</tbody>
</table>

**Legend:**
- Classic
- Coup de Poing
Outbreak characteristics

Case fatality rate

<table>
<thead>
<tr>
<th>Location</th>
<th>Classic</th>
<th>Coup de Poing</th>
</tr>
</thead>
<tbody>
<tr>
<td>Yambuko</td>
<td>0%</td>
<td></td>
</tr>
<tr>
<td>Yaleko</td>
<td>6%</td>
<td></td>
</tr>
<tr>
<td>Yalimbongo</td>
<td>5%</td>
<td></td>
</tr>
<tr>
<td>Yahisuli</td>
<td>4%</td>
<td></td>
</tr>
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</tr>
<tr>
<td>Wamba</td>
<td>2%</td>
<td></td>
</tr>
<tr>
<td>Mutena</td>
<td>2%</td>
<td></td>
</tr>
</tbody>
</table>
Outbreak characteristics

Case specific mortality rate

- Yambuko: 0.0%
- Yaleko: 0.1%
- Yalimbongo: 0.1%
- Yahisuli: 0.2%
- Djolu: 0.2%
- Kamonia: 0.3%
- Tembo: 0.3%
- Wamba: 0.4%
- Mutena: 0.4%

Classic vs Coup de Poing
Dynamics of the outbreak

- Coup de Poing intervention in Wamba: 3 areas according to Attack Rate (data from evaluation)
- Vaccinate first areas 1, then 2, then 3
Dynamics of the outbreak

Epidemiological week

C. sp. (Wangba)

Area 1  Area 2  Area 3

Legend:
- Area 1
- Area 2
- Area 3
Limitations

- Precise impact of the Coup de Poing cannot be assessed, as reliable information on pre-intervention vaccination coverage is not available.

- As it relies on official attack rates, the Coup de Poing may be off-target (“silent pockets of notification”).
Conclusion

- Coup de Poing seems feasible, achieving favourable results
- Logistic/financial analysis (ongoing) will elucidate the reproducibility of the Coup de Poing approach
- Coup de Poing manages to intervene much earlier, before the epidemic peak, and thus has the potential to contain the outbreak
Thank you