Vaccination as a way forward?
A case study on how a poultry vaccination intervention influences poultry keeping in Kenya

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The importance of poultry in Kenya

- Poultry crucial for the **liverhoods** of rural and urban people all over the developing world
- Poultry is often reared by the **women** in the household
- >20 million poultry in Kenya; Majority small holders

Why?

- Low costs (affordable by the poorest), rapid reproduction and easily marketed
- A reliable source of income and protein
Newcastle disease virus

- Viral disease (Paramyxovirus)
- Highly virulent – disease either silent, or in deadly outbreaks (but often underreported)

Why does disease matter?

- In commercial production - hamper productivity and financial losses
- In small-holder farming - severely affect the livelihood of families.
Newcastle disease vaccines

VACCINATION ONLY MEANS OF PROTECTION IN LOW INCOME COUNTRIES

• Produced for large scale production—many hundred doses per vial
• Requires system for distributing to many farmers
• LaSota strain vaccines—requires cold chain
• I-2 strain vaccine—thermotolerant
Study background

Not for profit organization

Kenya

District coordinator

Village advisers

Community vaccinators

Previously most common in Kenya: LaSota strain

From 2013, I-2 strain available for distribution through Farm Input Promotions Africa (FIPS-Africa)
Study objectives

First study 2011

• See if vaccination uptake differed between villages that had support or not
• Study differences in vaccination uptake and farmers KAP towards vaccination

Second study 2013

• Follow up on how village vaccinators (and other actors) perceived their work and its effects
Material and methods - Study 1 2011

Kibwezi district, Kenya

Organisation supporting ND vaccination

32 HHs

5 villages with support

5 villages without support

32 HHs

Chicken shelter in Kibwezi
Results - farms using vaccine

Kenya
Villages without support
2 (1%)

Villages with Support
154 (99%)

Kenya
Used vaccine
105 (66%)

Never used vaccine
55 (34%)
• Male-headed households (72.8%) had on average two more chickens than female-headed households (13.1 and 10.9 chickens respectively).

• **MORE CHICKENS!** The average number of chickens per household was 13.9 in supported villages versus 11.1 in non-supported villages (p=0.003).

• Households which had used the vaccine had on average 14.6 chickens, versus 11.4 in non vaccinated hhs (p=0.001). 72.9% of these hh continued to use it after the first month.

• **MORE KNOWLEDGE!** In the villages that had not received support, 23.1% correctly answered the question about what a vaccine does (“it protects against a specific disease”), whereas in the supported villages, 48.8% knew this (p<0.001).

• 73% of the households reported having lost chickens during the last year to what they believed was ND.
Results - multivariable analyses

<table>
<thead>
<tr>
<th>Multivariable analyses</th>
<th>Significant</th>
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<tbody>
<tr>
<td>Ever having used the ND vaccine</td>
<td></td>
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<tr>
<td>Supportive delivery system</td>
<td>✓</td>
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<tr>
<td>Knowing vaccines protect against specific diseases</td>
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<tr>
<td>Supportive delivery system</td>
<td>✓</td>
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<tr>
<td>Knowledge of clinical signs associated with ND</td>
<td>✓</td>
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<tr>
<td>Positive attitudes towards the ND vaccine, among ever users</td>
<td></td>
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<tr>
<td>General knowledge about vaccines</td>
<td>✓</td>
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Material and methods 2013

• Follow up on previous study
  
  District coordinator
  
  Village-based advisors (7)
  
  Community vaccinators (3)

• Questions about vaccination routines, campaigns and how they perceived the impact of vaccination.
Results 2013

- In 2011, all vaccinators used La Sota ND vaccines.
- When in 2013 the I-2 vaccine became available, all village-based advisors reported using the I-2.
- Community vaccinators still acquired La Sota vaccines from the local stores.
Results - Vaccinators opinions

• (Because of vaccination) fewer chickens were dying of ND
• Farmers are more knowledgeable about vaccinations
• Farmers have more chickens per household.
How well are chickens vaccinated?

- All village-based advisors knew that chickens should be vaccinated at least three vaccinations per year with I-2.
- When asked to estimate how many households vaccinated at least 90% of the birds at least three times per year, the vaccinators stated between 20 and 94%, average 57%.
**Conclusions**

**Vaccination support** very important for uptake

- Better knowledge about vaccines
- More knowledge, and decreased mortality, gives more positive attitudes

Vaccinated households have more chickens

- Very important for livelihoods and food security

Availability of a thermotolerant vaccine helps facilitating distribution and access
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