



Agence de Médecine Préventive

Immunization session attendance, vaccine wastage and coverage

Study conducted by AMP in Burkina Faso in 2009

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Agenda

Study objectives

Burkina Faso presentation

Method and material

Results

- frequency of sessions
- attendance at session
- vaccine wastage
- immunization coverage

Conclusion



Objectives

- To measure immunization session attendance of EPI routine program for different strategies in urban and rural areas
- To calculate vaccine wastage rate during immunization sessions
- To measure attendance by girls in primary and secondary schools in urban and rural areas (HPV vaccine)

WHO commissioned and funded the study (to support VPPAG activities)

AMP developed the protocole and implemented the study in Burkina Faso in 2009



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Presentation

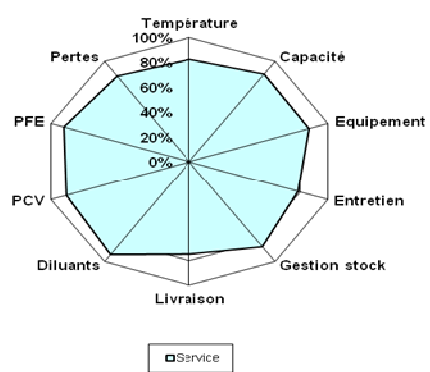




Burkina Faso	<ul style="list-style-type: none"> • ~ 15 M. hab; • 47% < 15yrs
National immunization program - overview	<ul style="list-style-type: none"> • Schedule: 8, 12, 16 wks • Systematic EPI : Fixed posts and out reach sessions. • Campaign : + door to door
Vaccine presentation	<ul style="list-style-type: none"> • 20 doses / vial BCG (lyo), OPV (liq), TT (liq) • 10 doses / vial MCV (lyo), YF (lyo) • 1 dose / vial Penta (liq)
Imm. Coverage (WHO/UNICEF, 2008)	<ul style="list-style-type: none"> • Penta 3 = 95%; MCV = 94%
Vaccine management (WHO, 2008)	<ul style="list-style-type: none"> • Wastage : BCG = 36%; MCV = 19% • No stock out in 2008 (central and district level)



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Presentation – Burkina Faso

Vaccine management performance at service delivery level (2009 EPI review)




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Method																									
<ul style="list-style-type: none"> • Retrospective study (Jan-Dec 2008) • Routine immunization: fixed post and out reach strategy • Four sites selected in Burkina Faso: Two rural, Two urban 																									
<table border="1"> <thead> <tr> <th>Name of facility</th> <th>Population Total / 0-11 months</th> <th>Settings</th> <th>Distance from vaccine store (district) (km)</th> <th>Cold chain equipment</th> </tr> </thead> <tbody> <tr> <td>Medical Center Kossodo</td> <td>9 829 / 414</td> <td>Urban</td> <td>0</td> <td>1 fridge (Sibir *)</td> </tr> <tr> <td>Health Center Secteur 23</td> <td>86 919 / 3 659</td> <td>Urban</td> <td>9</td> <td>2 fridges (Sibir) 1 freezer</td> </tr> <tr> <td>Medical Center Tanghin Dassouri</td> <td>20 006 / 842</td> <td>Rural</td> <td>25</td> <td>2 fridges (Sibir)</td> </tr> <tr> <td>Health Center Yaoghin</td> <td>3 060 / 128</td> <td>Rural</td> <td>50</td> <td>1 fridge (Sibir)</td> </tr> </tbody> </table>	Name of facility	Population Total / 0-11 months	Settings	Distance from vaccine store (district) (km)	Cold chain equipment	Medical Center Kossodo	9 829 / 414	Urban	0	1 fridge (Sibir *)	Health Center Secteur 23	86 919 / 3 659	Urban	9	2 fridges (Sibir) 1 freezer	Medical Center Tanghin Dassouri	20 006 / 842	Rural	25	2 fridges (Sibir)	Health Center Yaoghin	3 060 / 128	Rural	50	1 fridge (Sibir)
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<ul style="list-style-type: none"> • Source of data <ul style="list-style-type: none"> • Daily immunization register • Vaccine stock register 																									
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Method – Immunization sessions and coverage

Frequency

Number of immunization session by

- Health facility
- Strategy
- Vaccine

For the all year 2008

Attendance

Number of attendees by

- Health facility
- Immunization session
- Strategy
- Vaccine

For the all year 2008

Coverage

- Calculation based on the number of doses reported in the tally records (numerator), and the target population of the area of each health facility, provided by the Ministry of Health (denominator).
- Limits :
 - Not possible to affirm that each dose was administered to a beneficiary residing in the area of the health facility.
 - Data of target population issues from 2006 population census



Method - Vaccine wastages calculation

Health facility level

Unopened vials + opened vials

Include losses due to services and losses due to the program.

Measured on the full year 2008 for all vaccines

Calculated from the number of doses reported in the **tally register** and the number of vaccine vials taken out of the stock of the facility, reported on the vaccine **stock register**.

Immunization sessions

Opened vials only

include only losses due to the program.


Measured :

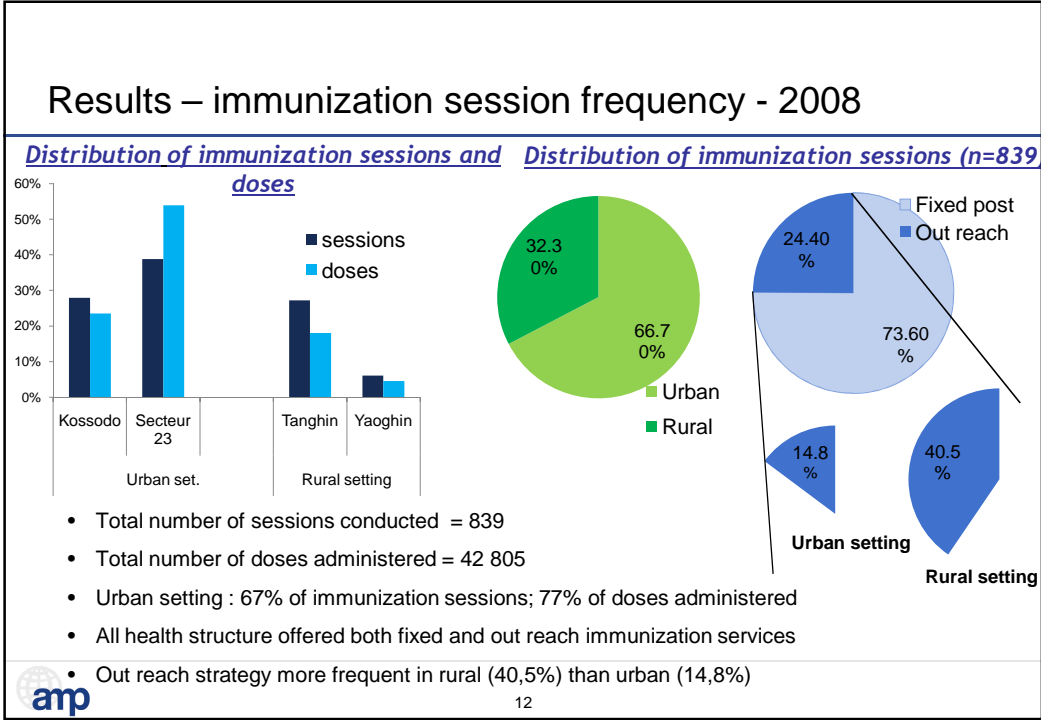
1. on the full year 2008 for all vaccines.

2. for each session only for vaccines not covered by the open vial policy (BCG, MCV and YF) and vaccine in single dose (penta).

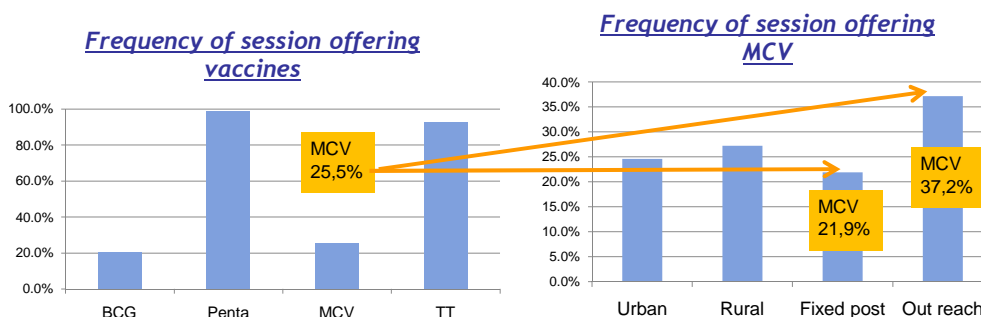
Calculated from the number of doses and the number of vaccine vials opened during the session, reported in the **tally register**



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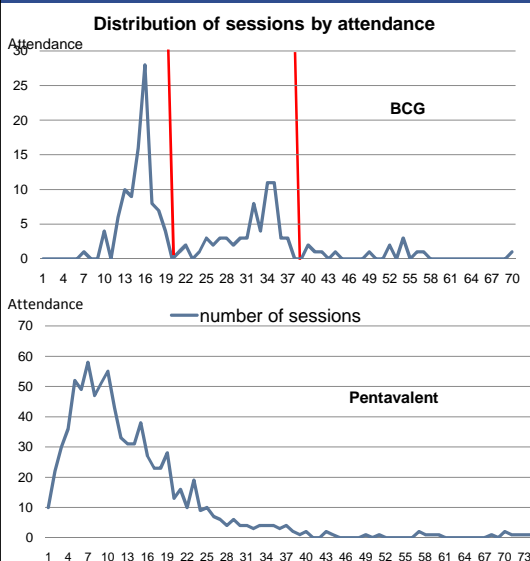
Results – immunization session frequency



- Liquide vaccines offered at most of immunization sessions
- Lyophilized vaccines :
 - twice a week to once a month in fixed post
 - Depend on attendance in out reach sessions
 - Follow instruction given by regional health authorities



Results - Vaccination session attendance



- **BCG = 20 doses/vial:**
 - More sessions with attendances 11-20 and 31-40 to limit wastage
 - **Pentavalent = 1 dose/vial**
 - Average attendance lower than BCG (5 time more session with pentavalent)
- No "vial effect"

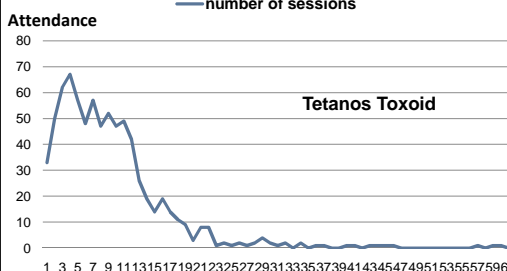
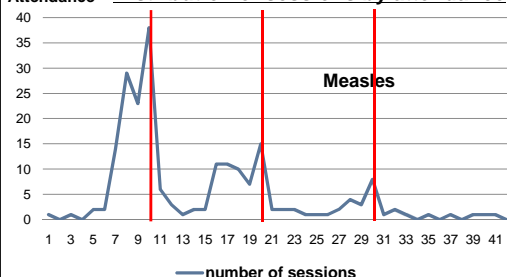
Average attendance BCG=24,1;
Penta=12,5;

Minimum : BCG=7: Penta= 0

Maximum: BCG= 70; Penta=98

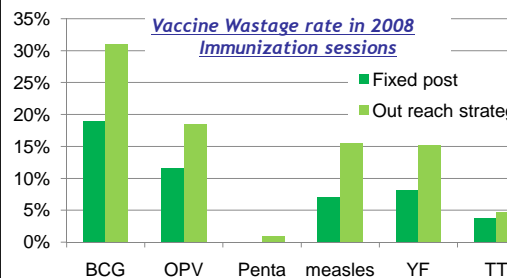
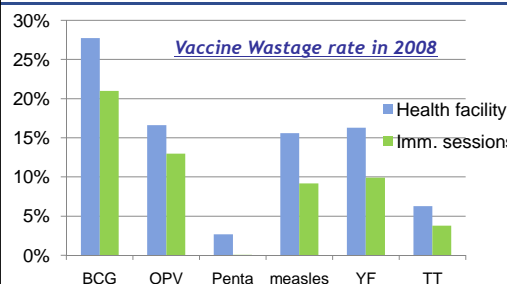
Results - Vaccination session attendance

Attendance **Distribution of sessions by attendance**



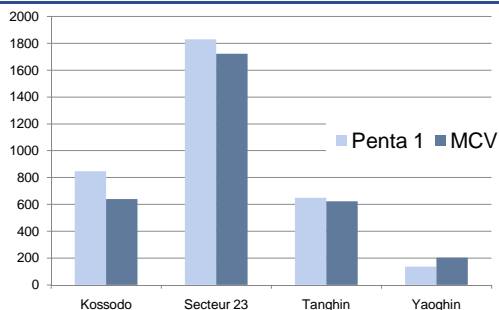
- **Measles** = 10 doses/vial:
 - More sessions with attendances 6-10 and 16-20 to limit wastage
 - **TT** = 20 doses/vial
 - No “vial effect” because of multi dose vial policy application
 - Average attendance lower than MCV (5 time more session with TT)*
- | | | |
|------------------------|----------|---------|
| • Average attendance : | MCV=14,9 | TT=9,6; |
| • Minimum : MCV=1 | | TT= 0 |
| • Maximum : MCV = 71 | | TT=88 |

Results – Vaccine wastage



- 41% of MCV wastage happened at store level
- Difference between wastage rates during immunization sessions and at health facility store due to expiration, broken vial, VVM switch, reporting error, ...
- wastages in outreach sessions more important than in fixed post, especially for lyophilized vaccines.
- Wastages lower than planed in cMYP for all antigens

Results – Immunization coverage - 2008



Number of children receiving a vaccine dose - 2008

	Immunization Card	Valid dose
Penta 1	92,2%	90,0%
MCV	87,5%	72,9%
FIC	81,5%	64,0%
Drop-out rate penta1-MCV	5,09%	

Vaccination Coverage in the Region (EPI review 2009)

- Low difference in number of children vaccinated with penta 1 and measles
- Measles offered in one out of 4 immunization sessions (average)
- At region level (2009 EPI review)
 - Low drop ou rate Penta 1 – MCV (5,09%)
 - 1,4% of MCV doses administrated were not valid



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Conclusion

- Diversity of immunization session organization according to setting (strategy, frequency, attendance...)
- Vaccine vials presentation drives the immunization sessions planning
- Strategies to limit vaccine wastage without significant impact on coverage (following instruction given by health authorities) : *limited wastage with high coverage*
- Vaccine vial size as an adjustment parameter for immunization program implementation; health services adapt strategy to gain efficiency in immunization
- Possible impact of vaccine vial size on quality of immunization (high number of unvalid doses)
- Recommendation ; Maintain/develop country's decision making capacity based on evidence, country specificity, immunization multi year plan...
 - Assessment tools, Simulation tools, Decision tree
 - Policy and Improvement plan development and implementation
 - HR skills development



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Conclusion

- Needs further documentation on :
 - Cause of wastage at store and immunization session
 - Missed opportunities due to limited number of session (vaccines excluded by MDVP)
 - Role of vaccine presentation in the validity of immunization
 - Age of immunization
 - Quality of immunization (immunization safety, vaccine efficacy...)
 - Cost / Affordability (cost per dose at district store; cost per dose administered, cost of losses at various level; cost of AEFI, unprotected children, contamination...)
 - ...



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Aknowledgement

- Césaire Ahanhanzo (AMP)
- Aristide Aplogan (AMP)
- Souleymane Koné (WHO)
- Prosper Djiguemdé (MoH Burkina Faso)

Thank you for your attention

