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**Evidence Meets Decision Makers: Better Use of Evidence for Better Health**

**Informing policy when the best evidence is  
inadequate - Focus on vaccination**

# Overview of vaccine coverage

- ❑ Vaccination is the most successful cost-effective public health intervention
- ❑ Traditional six basic vaccines
- ❑ New additions  
hepatitis B, *Haemophilus influenzae* type b (Hib), human papilloma virus, pneumococcal conjugate, rotavirus, yellow fever, meningococcal meningitis A, Japanese encephalitis, rubella vaccines



# Coverage

- ❑ Target is 90% coverage for eligible children (0 -23 months) by 2015 – GVAP
- ❑ DPT3 coverage rose from 5% in 1974 to 86% in 2014
- ❑ Success described as “fragile” globally
- ❑ Low herd immunity
- ❑ Outbreaks of targeted diseases
- ❑ 18.7 M of infants unvaccinated
- ❑ 70% are in 10 LMIC

## **Supply**

### **Health system**

- Access/ logistics
- Timing/availability
- Quality, etc

## **Demand**

### **Health care provider**

- Attitude
- Competence / knowledge, etc

### **Health care recipient**

- Misconceptions
- Negative experience
- Hesitancy

# Vaccine hesitancy

Spectrum



“You let a doctor take a dainty, helpless baby, and put that stuff from a cow, which has been scratched and had dirt rubbed into her wound, into that child ... More mites die from vaccination than from the disease they are supposed to be inoculated against.” (George Bernard Shaw, 1929)

“They see it [vaccination] as something that will bring more harm” (*FGD, TRL Project; 2016*)

## **Evidence for policy**

- Challenges not isolated
- Reasons for non or under vaccination are multiple
- Multi-faceted strategies required
- Varying evidence for varying barriers
- Level of coverage underscores use of high quality evidence
- Systematic reviews for improving coverage in High/Low income countries
- Quality of individual studies determine quality and strength of evidence

## Best evidence HICs

- ❑ Cochrane SR on “Interventions aimed at improving immunization rates”  
*(Jacobson Vann, J & Szilagy P, 2005)*
- ❑ Patient reminder/recall effective in primary care settings (public and private)
- ❑ Setting – High Income Countries
- ❑ However not applicable to LMICs due to cost
- ❑ Does not address hesitancy and health system challenges

## Best evidence LMICs

- ❑ Cochrane SR: Interventions for improving coverage of child immunization in LMICs (*Oyo-Ita A et al, 2011*)
- ❑ Updated 2016: Interventions for improving coverage of childhood immunization in LMICs (*Oyo-Ita A et al, 2016*)
- ❑ Goal: effectiveness of interventions to boost and sustain high vaccination coverage in LMICs



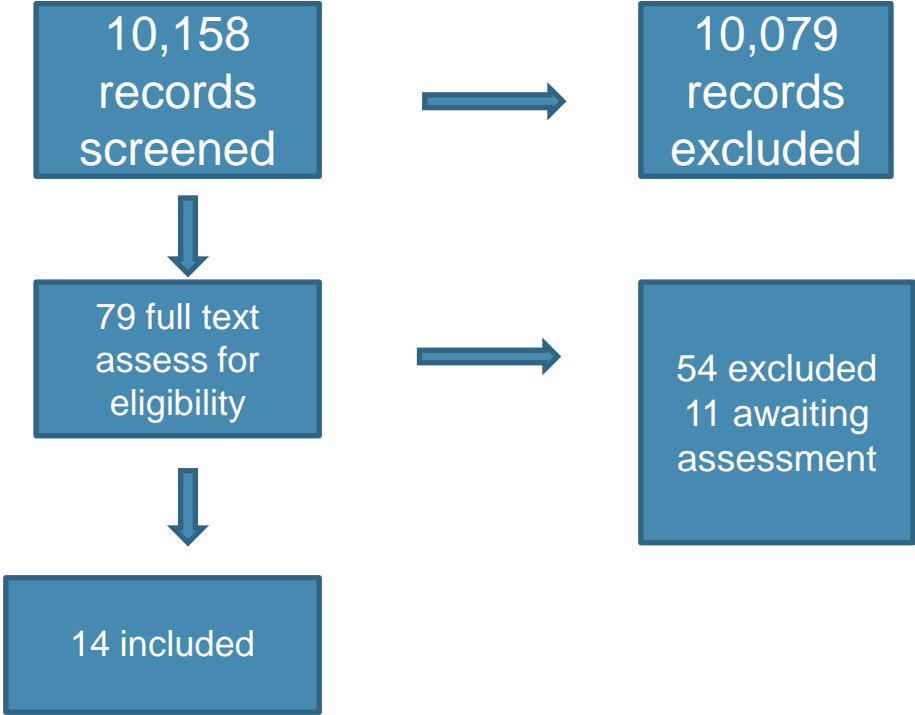
# Interventions to improve coverage in LMICs – Cochrane Review

## JUSTIFICATION

- ❑ Low coverage (*WHO 2012*)
- ❑ Weak routine immunisation systems (*Machingaidze 2013*)
- ❑ Poor community knowledge of immunisation (*Zipursky 2010*)
- ❑ Largest numbers of unimmunised children (*SAGE 2015; WHO 2015*)

“Making well-informed decisions about how best to achieve and sustain high and equitable immunisation coverage in these countries will depend partly on decision makers accessing the best scientific evidence about what interventions work, and integrating this evidence into their national health systems” (*Lewin 2008*)

# Search Yield



## Reasons for exclusion of studies

- Observational studies
- Outcomes of interest not reported
- Controlled before and after studies with one arm for intervention and control
- Program evaluation

## Strategies to improve coverage

- ❑ Recipient-oriented
  - Health education
  - Monetary incentive
  - Health education + reminder type immunization card
  
- ❑ Provider – oriented
  - Training, supportive supervision, audit, feedback
  
- ❑ Health system
  - Home visit
  - Integration of services
  - Regular immunization outreach sessions
  
- ❑ Multi-faceted (Health system + Provider-oriented)

# Risk of bias of available evidence

Andersson 2009	+	+	+	+	?	-	+	+	?
Banerjee 2010	+	+	+	-	?	+	+	+	+
Barham 2005	?	-	-	?	?	?	-	+	?
Bolam 1998	+	?	+	-	?	+	+	+	+
Brugha 1996	?	?	-	?	?	-	+	+	?
Dicko 2011	+	-	-	+	+	+	+	+	-
Djibuti 2009	+	?	?	+	?	-	+	+	?
Maluccio 2004	+	-	-	-	?	-	?	?	-
Morris 2004	+	-	?	+	?	-	-	+	-
Owais 2011	+	?	+	+	?	+	+	+	+
Pandey 2007	+	?	+	+	?	-	+	+	?
Robertson 2013	+	-	+	+	?	?	+	-	-
Usman 2009	+	?	-	+	?	+	+	-	?
Usman 2011	+	?	-	+	?	+	+	+	+
	Random sequence generation (selection bias)	Allocation concealment (selection bias)	Blinding (performance bias and detection bias)	Incomplete outcome data (attrition bias)	Selective reporting (reporting bias)	Other bias	Baseline outcome measurements similar?	Baseline characteristics similar?	Adequate protection against contamination?

# Applicability

- ❑ Context of evidence not stated
  - Barriers to coverage in study setting
    - Individual /community / religious hesitancy
    - Health system
  
- ❑ Adaptability in other settings questionable
  - Interventions studied mostly not integrated into routine services
  - One vaccine targeted
  - Some interventions not suitable in some settings like home visits
  
- ❑ Sustainability not assured
  - Short term interventions; long term implication unknown
  - Cost of intervention not available
  - Donor supported monetary incentives

# Journey from Evidence to Action not linear



CONTEXT  
Culture  
Politics  
Social factors  
Religion  
Values  
Resources



# Best evidence in Public Health

- ❑ Clinical environment better controlled
  - RCT
  - SR
  
- ❑ Public health environment more difficult to manipulate
  - Hierarchy of evidence difficult in public health
  - Observational studies
  - Qualitative
  - Experience
  - Know-how
  - Consensus
  - Local knowledge

(Pang, 2007)



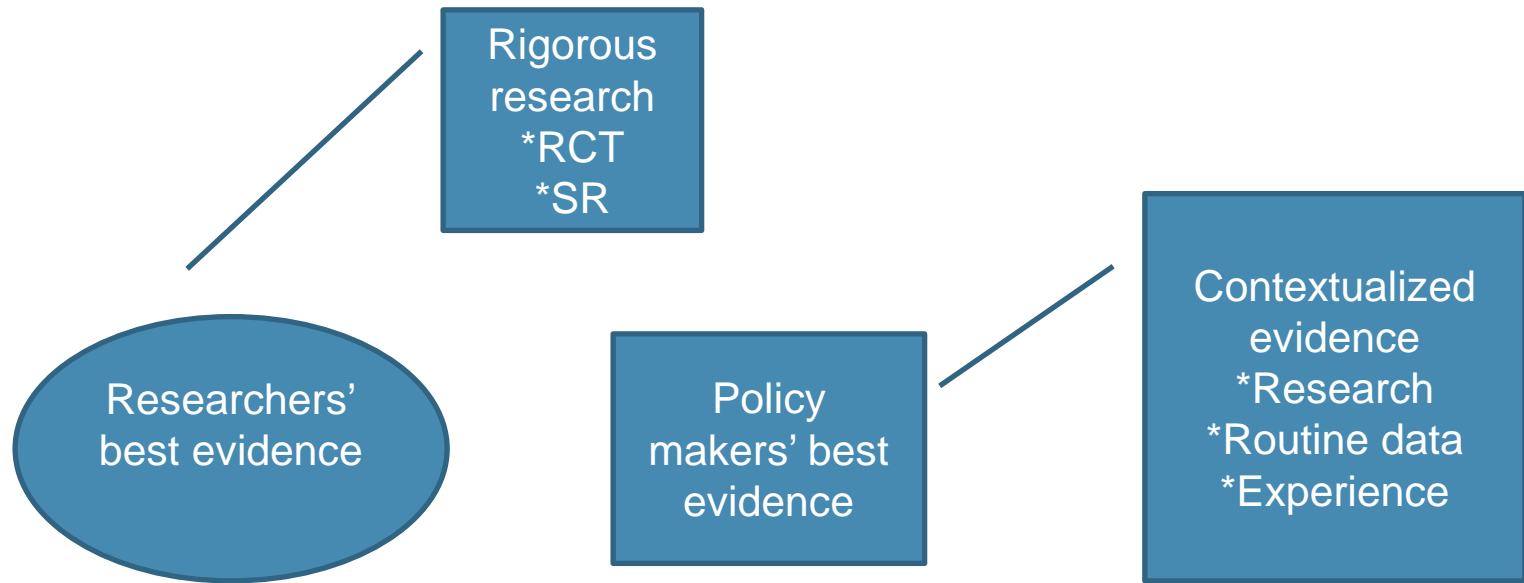
# What informs policy?

- Research
- Information
- Experience (personal or other's)
- Expert opinion
- Politics
- Finance

# Evidence for policy – perspective of policy makers in Uganda

- ❑ High quality evidence addressing feasibility of implementation, cost, acceptability - *National managers, donors*
- ❑ Locally conducted studies – *district managers, service providers*
- ❑ Routine M/E – *district managers, service providers*
- ❑ International evidence – *donors, national managers*
- ❑ Clinical trials and Systematic reviews – *researchers*
- ❑ Reports from service providers – *district managers*
- ❑ Experience

(Nabyonga-Orem & Mijumbi, 2015)



Where evidence is inadequate monitoring to measure impact bridges the gap

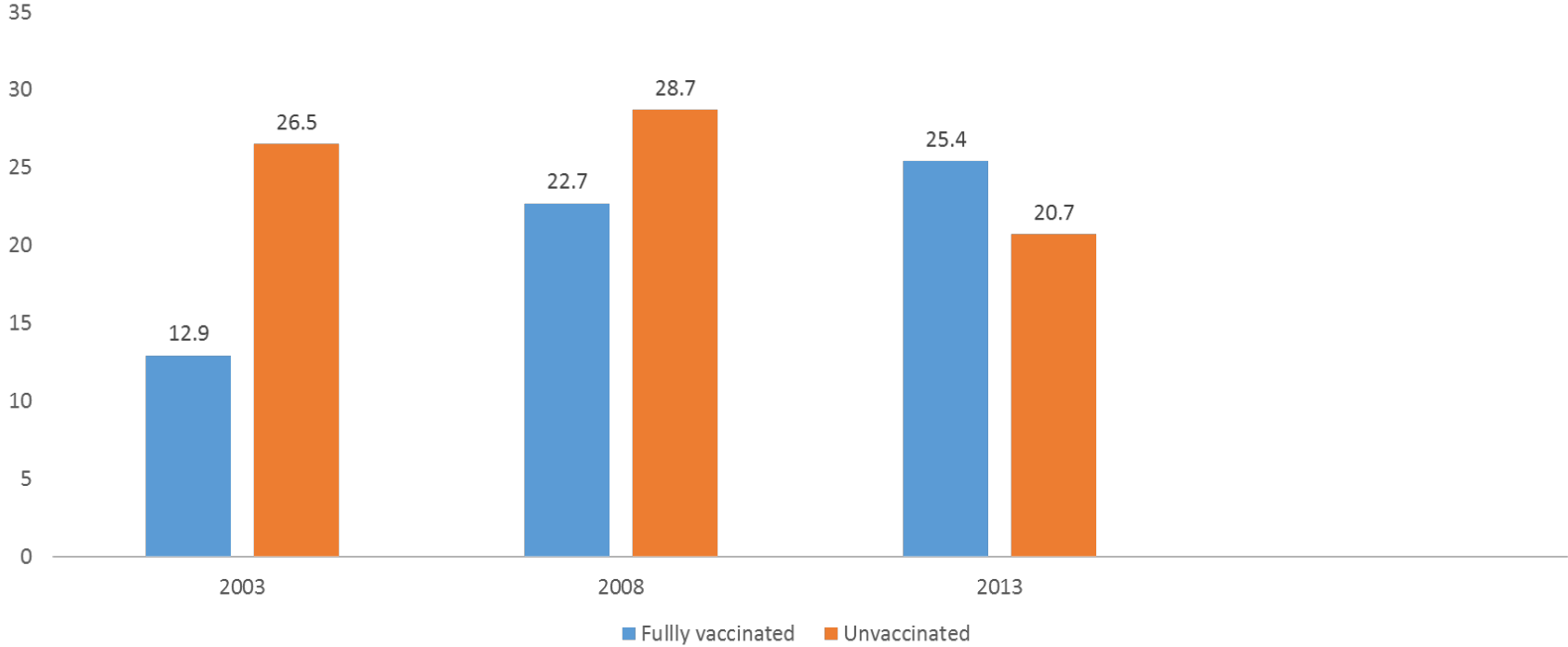
## Policy on vaccination - Nigeria

- ❑ Reach Every Ward
- ❑ Proposed in 2002 by WHO as Reach Every District (Expert opinion)
- ❑ Adapted in 2004 in Nigeria
- ❑ Goal: *“the provision of regular, effective, quality and sustainable routine immunization activities in every ward, so as to improve immunization coverage.” (USAID, 2009)*

## REW Components

- ❑ Effective planning and management of resources
- ❑ Reaching all target populations including under-served
- ❑ Supportive supervision
- ❑ Monitoring for action through utilization of data quality self assessment tools at all governing levels.
- ❑ Linking services with communities

# Vaccination coverage trend



## Impact of REW in Nigeria

- ❑ Improvement in coverage from 12.9% to 25.7% in 10 years \*\*
- ❑ 6% drop in unvaccinated in 10 years \*\*
- ❑ Variation between geopolitical zones – 9.6% in NW to 52% in SS\*\*
- ❑ Within geopolitical zones 1.3% in Sokoto to 35.3% in Kaduna (NW) \*\*
- ❑ Within States: CRS - 22% in Odukpani to 66% in Calabar Mun\*
- ❑ Settings
  - ❑ Rural/Urban
  - ❑ Hard to reach

\*\*(*NDHS, 2013*)

\* (*Unpublished data from TRL Project, 2016*)

## Vaccination status by location

VACCINATION STATUS	Rural (%)	Urban (%)	Total (% of Total)
Not vaccinated	173 (68.1)	81 (31.9)	254 (100)
Partial	608 (50)	609 (50)	1217 (100)
Up-to-date	548 (48.6)	579 (51.4)	1127 (100)
<b>TOTAL</b>	1329	1269	2598 (100)
$X^2$ 32.8; $p = <0.001$			
<i>(Data from baseline survey of vaccination status, Nigeria, CRS 2016: unpublished)</i>			



# Barriers to coverage - Nigeria

## Hesitancy

- Religion / culture
- Misconceptions
- Negative experience

Adverse event

## Health system

- Access
- Resources including logistics

## War / conflicts

## Mistrust

# Polio Eradication Program

- ❑ Nigeria accounted for 50% of all cases of Polio in 2012
  
- ❑ Polio campaigns
  - Microplanning for National Immunization Days
  
- ❑ Strengthening of community links through traditional and religious leaders
  
- ❑ Delisted from polio endemic countries on 25<sup>th</sup> Sep, 2015
  
- ❑ 2 cases identified Aug 2016
  
- ❑ Source – Borno State, a conflict zone

## Overcoming barrier for Polio eradication

- ❑ Strong hesitancy in the North prolonged Polio eradication in Nigeria
- ❑ Involvement of traditional and religious leaders part of the success of mileage achieved
- ❑ Similar report from Republic of Congo on Paster Paul 2, the Elephant King of Kitawala Filadelphie sect.

## Strengthening community link

- ❑ Involvement of traditional/religious leaders successful in Polio eradication
  - Identify the unimmunized and partially immunized
  - allay fears
  - address misconceptions
  - gain community trust
- ❑ Impact evaluation of use of TRL ongoing in Nigeria
- ❑ Grant from 3ie
- ❑ Explore use in routine vaccination
- ❑ Means of sustaining gains in coverage

## Conclusion

- ❑ High quality evidence should inform policy
- ❑ Policymakers more inclined to contextualized evidence irrespective of quality
- ❑ Other types of evidence need to be considered.
- ❑ However, evidence or expert hunches, effective monitoring is needful.



Evidence or guesswork?  
Bridge the gap!

Thank you



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