

KENYA - Monitoring and assessing the impact of vaccinations and other childhood interventions for both boys and girls

African Population and Health Research Center - APHRC

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Overview

Identification

ID NUMBER
APHRC-IVP-2010-v1.01

Version

VERSION DESCRIPTION

PRODUCTION DATE
2014-12-19

NOTES

Version 1.0: Edited, anonymous dataset for Data Documentation Working Group

Version 1.1 (February 2015): This version has additional surveys conducted in 2014. Datasets edited, anonymised and study materials added.

Overview

ABSTRACT
OBJECTIVE

The overall objective is to assure evidence-based policies for vaccine and preventive drug delivery in low-income countries (LIC) in order to reduce child morbidity and mortality.

Hypotheses: Current practice is to consider health issues as independent problems - e.g. TB, malaria, HIV, measles, rotavirus diarrhoea, vitamin A or iron deficiency - that can be solved with specific interventions which have separate and additive effects. However, our interventions in childhood may have a more general impact on the immune system with far-reaching consequences for survival - the so-called non-specific effects (NSE)^{1,2}. These NSE often differ for boys and girls. Taking the non-specific and sex-differential effects of vaccines and micronutrients into consideration in the planning of health intervention policies could contribute importantly to better child health.

BACKGROUND

Both observational studies and randomised clinical trials (RCT) conducted by the Bandim Health Project (BHP) group in West Africa have shown consistently that the main childhood interventions with vaccines and micronutrients used by the international health community have NSE, i.e. effects which are not explained by the prevention of the targeted infection or deficiency. These effects are often sex-differential²⁻⁷. The effects can be major; high-titre measles vaccine (HTMV) was associated with 2-fold higher mortality for girls², and providing BCG at birth halved neonatal mortality among low-birth-weight (LBW) children. WHO recommends schedules for delivery of vaccines and micronutrients. These schedules are often not followed. Many children receive vaccines out-of-sequence; e.g. BCG simultaneously with diphtheria-tetanus-pertussis vaccine (DTP), DTP with measles vaccine (MV), or DTP after MV. Such variations have very different NSE on overall mortality⁸⁻¹¹ though it has not yet been recognised.

RELEVANCE

The implication of NSE is that interventions ought to be monitored or tested for their overall effect on mortality in different environments. Hence, more data on NSE in other environments are needed. For this to happen, we need more study sites and researchers involved in such research. The present proposal will train a small network of young scientists in monitoring and assessing the NSE of vaccines and other interventions. In the initial phase, monitoring systems will be set up at six Health and Demographic Surveillance System (HDSS) sites within the INDEPTH Network. Risk factors for delay in uptake of childhood interventions will be examined with emphasis on possible differences between boys and girls. We will examine the causes of out-of-sequence vaccinations. The impact of major variations in implementation will be examined. If NSE are similar in other LICs, the effect on child survival is expected to be very large. In a longer perspective, we will therefore train

the sites in implementing trials assessing potential variations in policy. In conclusion, the proposal will establish a research training network in order to provide better evidence-based policies for delivery of vaccines and other health interventions in LIC.

METHODS

- The project follows up all children born in the DSS area since September 2010 and their mothers, for a period of 3 years (Jan 2011 - Dec 2013)
- We administer structured questionnaires to the eligible children's mothers or their guardians to collect information on morbidity, health seeking behavior, cause of death (for those who have died)
- We collect anthropometric measurements from all children every round to monitor nutritional status and growth
- Through the NUHDSS, we collect socioeconomic, demographic, migration and pregnancy outcome data for all the mothers and their households

DATA COLLECTED

- Background characteristics
- Antenatal care, delivery and post natal care
- Birth histories for the mothers
- Child's vital health Status
- Breastfeeding and child feeding practices
- Anthropometric measurements for children
- Detailed Vaccination history of the child
- Child morbidity and health seeking practices

KIND OF DATA

Sample survey data [ssd]

UNITS OF ANALYSIS

The unit of analysis is the Child

Scope

NOTES

The scope of the Survey includes:

- Background characteristics
- Antenatal care, delivery and post natal care
- Birth histories for the mothers
- Child's vital health Status
- Breastfeeding and child feeding practices
- Anthropometric measurements for children
- Vaccination history

- Child morbidity and health seeking practices
- Post partum sexual activity
- Postpartum contraceptive use

KEYWORDS

Maternal Health, Child Health, Routine Vaccination, Childhood intervention

Coverage

GEOGRAPHIC COVERAGE

Two urban informal settlements, Korogocho and Viwandani, in Nairobi City (the capital city) of Kenya.

UNIVERSE

The survey covered all mothers who gave birth from september 2010 in the Demographic Surveillance Area

Producers and Sponsors

PRIMARY INVESTIGATOR(S)

Name	Affiliation
African Population and Health Research Center	APHRC

OTHER PRODUCER(S)

Name	Affiliation	Role
Dr Peter Aaby	Bandim Health Project	Primary Investigator
Dr Catherine Kyobutungi	APHRC	Co-Investigator
Dr Elizabeth Kimani	APHRC	Co-Investigator

FUNDING

Name	Abbreviation	Role
DANISH INTERNATIONAL DEVELOPMENT AGENCY	DANIDA	Funder

OTHER ACKNOWLEDGEMENTS

Name	Affiliation	Role
Residents of Korogocho and Viwandani Slums		Study Subjects
Bandim Health Project		Collaborator
Peter Aaby	Bandim Health Project	PI

Metadata Production

METADATA PRODUCED BY

Name	Abbreviation	Affiliation	Role
African Population and Health Research Center	APHRC	APHRC	Metadata Producer

DATE OF METADATA PRODUCTION

2014-12-19

DDI DOCUMENT VERSION
Version 1.1 (February 2015).

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APHRC-IVP-2010-v1.01

Sampling

Sampling Procedure

All NUHDSS female members who gave birth since September 2010 and their children were enrolled in the study. No samples were drawn.

Weighting

Sample weights were not used.

Questionnaires

Overview

DATA COLLECTION

Once recruited into the study, the mother and child are followed up approximately every 4 months

QUESTIONNAIRES

A recruitment questionnaire is administered during the first visit, an update 1 questionnaire is administered during the first follow up visit, update 2 during the second follow up visit and so on. the content of the questionnaires keep changing from recruitment questionnaire to the subsequent follow up visits. but from update 3 onward the questionnaires are the same as documented below;

RECRUITMENT (First Visit)

Data Collected

- Consent
- Background characteristics
- Antenatal care, delivery and post natal care
- Birth histories for the mothers
- Child's vital health Status
- Breastfeeding and child feeding practices
- Anthropometric measurements for mother and child
- Vaccination history
- Child morbidity and health seeking practices
- Post partum sexual activity
- Postpartum contraceptive use
- Future intentions
- Perception of HIV risk and condom use
- Migration and poverty
- Exposure calendar

UPDATE 1 (Second Visit)

Data Collected (comparing update 1 to recruitment questionnaires)

- Consent (same)
- Background characteristics (same)
- OBA voucher questions (new questions added)
- Child's vital health Status (question 4.10 dropped)
- Breastfeeding and child feeding practices
- Anthropometric measurements for mother and child (same)
- Vaccination history (same)
- Child morbidity and health seeking practices (same)
- Post partum sexual activity (question 8.1p added, questions 8.2 dropped)
- Postpartum contraceptive use (questions 9.1, 9.2, 9.3, 9.7p, 9.8, 9.9, 9.10 dropped)
- Future intentions (only question 10.6 remained)
- Perception of HIV risk and condom use (only questions 11.8, 11.9 remains)
- Exposure calendar (same)
- Migration and poverty (questions 15.1, 15.2, 15.3 dropped)

UPDATE 2 (Third Visit)

Data Collected (comparing update 2 to update 1 questionnaires)

- Consent (same)
- Background characteristics (same)
- OBA voucher questions (dropped)
- Child's vital health Status (same)
- Breastfeeding and child feeding practices (questions 5.18, 5.19 dropped)
- Anthropometric measurements for mother and child (same)
- Vaccination history (same)
- Child morbidity and health seeking practices (same)
- Post partum sexual activity (same)
- Postpartum contraceptive use (same)
- Future intentions (same)
- Perception of HIV risk and condom use (same)
- Exposure calendar (same)
- Migration and poverty (same)

UPDATE 3 (Fourth Visit)

Data Collected (comparing update 3 to update 2 questionnaires)

- Consent (same)
- Background characteristics (same)
- Child's vital health Status (same)
- Anthropometric measurements for mother and child (same)
- Child morbidity and health seeking practices (same)
- Post partum sexual activity (same)
- Postpartum contraceptive use (same)
- Future intentions (same)
- Perception of HIV risk and condom use (same)
- Exposure calendar (same)
- Migration and poverty (same)

UPDATE 4 (Fifth Visit)

Data Collected (comparing update 4 to update 3 questionnaires)

- Consent (same)
- Background characteristics (same)
- Child's vital health Status (same)
- Anthropometric measurements for mother and child (same)
- Child morbidity and health seeking practices (same)
- Post partum sexual activity (same)
- Postpartum contraceptive use (same)
- Future intentions (same)
- Perception of HIV risk and condom use (same)
- Exposure calendar (same)
- Migration and poverty (same)

UPDATE 5 (Sixth Visit)

Data Collected (comparing update 5 to update 4 questionnaires)

- Consent (same)
- Background characteristics (same)
- Child's vital health Status (same)
- Anthropometric measurements for mother and child (same)
- Child morbidity and health seeking practices (same)
- Post partum sexual activity (same)
- Postpartum contraceptive use (same)
- Future intentions (same)

- Perception of HIV risk and condom use (same)
- Exposure calendar (same)
- Migration and poverty (same)

UPDATE 6 (Seventh Visit)

Data Collected (comparing update 6 to update 5 questionnaires)

SAME

UPDATE 7 (Eight Visit)

Data Collected (comparing update 7 to update 6 questionnaires)

SAME

UPDATE 8 (Nineth Visit)

Data Collected (comparing update 8 to update 7 questionnaires)

SAME

UPDATE 9 (Tenth Visit)

Data Collected (comparing update 9 to update 8 questionnaires)

SAME

Data Collection

Data Collection Dates

Start	End	Cycle
2011-03-01	2014-07-31	1
2011-08-19	2012-01-31	2
2012-02-01	2012-05-12	3
2012-05-14	2012-10-15	4
2012-10-15	2013-01-30	5
2013-04-24	2013-08-31	6
2013-09-02	2013-12-03	7
2013-12-04	2014-04-30	8

Data Collection Mode

Face-to-face [f2f]

Questionnaires

DATA COLLECTION

Once recruited into the study, the mother and child are followed up approximately every 4 months

QUESTIONNAIRES

A recruitment questionnaire is administered during the first visit, an update 1 questionnaire is administered during the first follow up visit, update 2 during the second follow up visit and so on. the content of the questionnaires keep changing from recruitment questionnaire to the subsequent follow up visits. but from update 3 onward the questionnaires are the same as documented below;

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- Anthropometric measurements for mother and child
- Vaccination history
- Child morbidity and health seeking practices
- Post partum sexual activity
- Postpartum contraceptive use
- Future intentions
- Perception of HIV risk and condom use
- Migration and poverty
- Exposure calendar

UPDATE 1 (Second Visit)

Data Collected (comparing update 1 to recruitment questionnaires)

- Consent (same)
- Background characteristics (same)

- OBA voucher questions (new questions added)
- Child's vital health Status (question 4.10 dropped)
- Breastfeeding and child feeding practices
- Anthropometric measurements for mother and child (same)
- Vaccination history (same)
- Child morbidity and health seeking practices (same)
- Post partum sexual activity (question 8.1p added, questions 8.2 dropped)
- Postpartum contraceptive use (questions 9.1, 9.2, 9.3, 9.7p, 9.8, 9.9, 9.10 dropped)
- Future intentions (only question 10.6 remained)
- Perception of HIV risk and condom use (only questions 11.8, 11.9 remains)
- Exposure calendar (same)
- Migration and poverty (questions 15.1, 15.2, 15.3 dropped)

UPDATE 2 (Third Visit)

Data Collected (comparing update 2 to update 1 questionnaires)

- Consent (same)
- Background characteristics (same)
- OBA voucher questions (dropped)
- Child's vital health Status (same)
- Breastfeeding and child feeding practices (questions 5.18, 5.19 dropped)
- Anthropometric measurements for mother and child (same)
- Vaccination history (same)
- Child morbidity and health seeking practices (same)
- Post partum sexual activity (same)
- Postpartum contraceptive use (same)
- Future intentions (same)
- Perception of HIV risk and condom use (same)
- Exposure calendar (same)
- Migration and poverty (same)

UPDATE 3 (Fourth Visit)

Data Collected (comparing update 3 to update 2 questionnaires)

- Consent (same)
- Background characteristics (same)
- Child's vital health Status (same)
- Anthropometric measurements for mother and child (same)
- Child morbidity and health seeking practices (same)
- Post partum sexual activity (same)
- Postpartum contraceptive use (same)
- Future intentions (same)
- Perception of HIV risk and condom use (same)
- Exposure calendar (same)
- Migration and poverty (same)

UPDATE 4 (Fifth Visit)

Data Collected (comparing update 4 to update 3 questionnaires)

- Consent (same)
- Background characteristics (same)
- Child's vital health Status (same)
- Anthropometric measurements for mother and child (same)
- Child morbidity and health seeking practices (same)
- Post partum sexual activity (same)
- Postpartum contraceptive use (same)

- Future intentions (same)
- Perception of HIV risk and condom use (same)
- Exposure calendar (same)
- Migration and poverty (same)

UPDATE 5 (Sixth Visit)

Data Collected (comparing update 5 to update 4 questionnaires)

- Consent (same)
- Background characteristics (same)
- Child's vital health Status (same)
- Anthropometric measurements for mother and child (same)
- Child morbidity and health seeking practices (same)
- Post partum sexual activity (same)
- Postpartum contraceptive use (same)
- Future intentions (same)
- Perception of HIV risk and condom use (same)
- Exposure calendar (same)
- Migration and poverty (same)

UPDATE 6 (Seventh Visit)

Data Collected (comparing update 6 to update 5 questionnaires)

SAME

UPDATE 7 (Eight Visit)

Data Collected (comparing update 7 to update 6 questionnaires)

SAME

UPDATE 8 (Nineth Visit)

Data Collected (comparing update 8 to update 7 questionnaires)

SAME

UPDATE 9 (Tenth Visit)

Data Collected (comparing update 9 to update 8 questionnaires)

SAME

Data Collectors

Name	Abbreviation	Affiliation
African Population & Health Research Center	APHRC	

Data Processing

Data Editing

Data editing took place at a number of stages throughout the processing, including:

- a) Office editing and coding
- b) During data entry
- c) Structure checking and completeness
- d) Secondary editing

Detailed documentation of the editing of data can be found in the "Standard Procedures Manual" document provided as an external resource.

Some corrections are made automatically by the program (80%) and the rest by visual control of the questionnaire (20%).

Other Processing

Data entry for the first five rounds of data collection was performed manually at APHRC's headquarters on desktop computers using an in-house built system with a Visual Basic.Net front-end and a Microsoft SQL Server back-end. For the last 3 rounds data collection was done using netbooks. Double data entry was carried out on 10% of the questionnaires.

Data were processed in clusters (cohort and updates), with each cluster being processed as a complete unit through each stage of data processing. Each cluster goes through the following steps:

- 1) Questionnaire reception
- 2) Office editing and coding
- 3) Data entry
- 4) Structure and completeness checking
- 5) Verification entry
- 6) Comparison of verification data
- 7) Back up of raw data
- 8) Secondary editing
- 9) Edited data back up

After all clusters are processed, all data is concatenated together and then the following steps are completed for all data files:

- 10) Exported to STATA
- 11) Recoding of variables needed for analysis
- 13) Structural checking of STATA files
- 14) Data quality tabulations
- 15) Production of analysis tabulations

Details of each of these steps can be found in the Standard Procedures Manual.

Data Appraisal

Estimates of Sampling Error

No estimation of sampling error was done.