

Maximizing existing data to strengthen program design, evaluation, and impact

**Maximiser les données existantes pour renforcer la
conception, l'évaluation et l'impact des programmes**

Maximizing use of existing data to strengthen program design, evaluation, and impact

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Do NGOs need baseline surveys?

Audience Question:

- Have you been involved in household surveys?



Do NGOs need baseline surveys?

- **Why do them?**

- Project planning
- Monitoring

- **Why NOT do them?**

- Cost
- Staff time
- Respondent burden
- Publically available data already exist, like DHS and MICS

Demographic and Health Surveys (DHS) and Multiple Indicator Cluster Surveys (MICS)

Audience Question:

- Have you heard of DHS and MICS?



DHS and MICS

- **Demographic and Health Surveys (DHS) - USAID**
- **Multiple Indicator Cluster Surveys (MICS) - UNICEF**
- Household surveys
- Maternal, newborn and child health
- Data for over 90 low- and middle-income countries
- Available online on request and for free

Can DHS/MICS data be used?

- **Advantages of DHS/MICS**
 - Highly standardized data collection and analysis methods
 - Large sample sizes
 - Methods comparable across years and countries

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- **Challenges of DHS/MICS**

- Not representative at lower geographical levels (village, district)
- Collected every 3-10 years

Hypotheses

- Publically available data can provide estimates of baseline conditions similar to those reported in NGO baseline reports when matched as closely as possible for location, year, and season of data collection
- The impact of differences in year, geographical level, and season varies across health indicators

Methods

- Analyses performed in three parts:

NGO vs DHS/MICS

139 indicators
46 NGO baseline reports
23 countries
2,174 pairs of indicators

DHS vs DHS

Same indicators
2 DHS cycles per country
7 countries
117,875 pairs of indicators

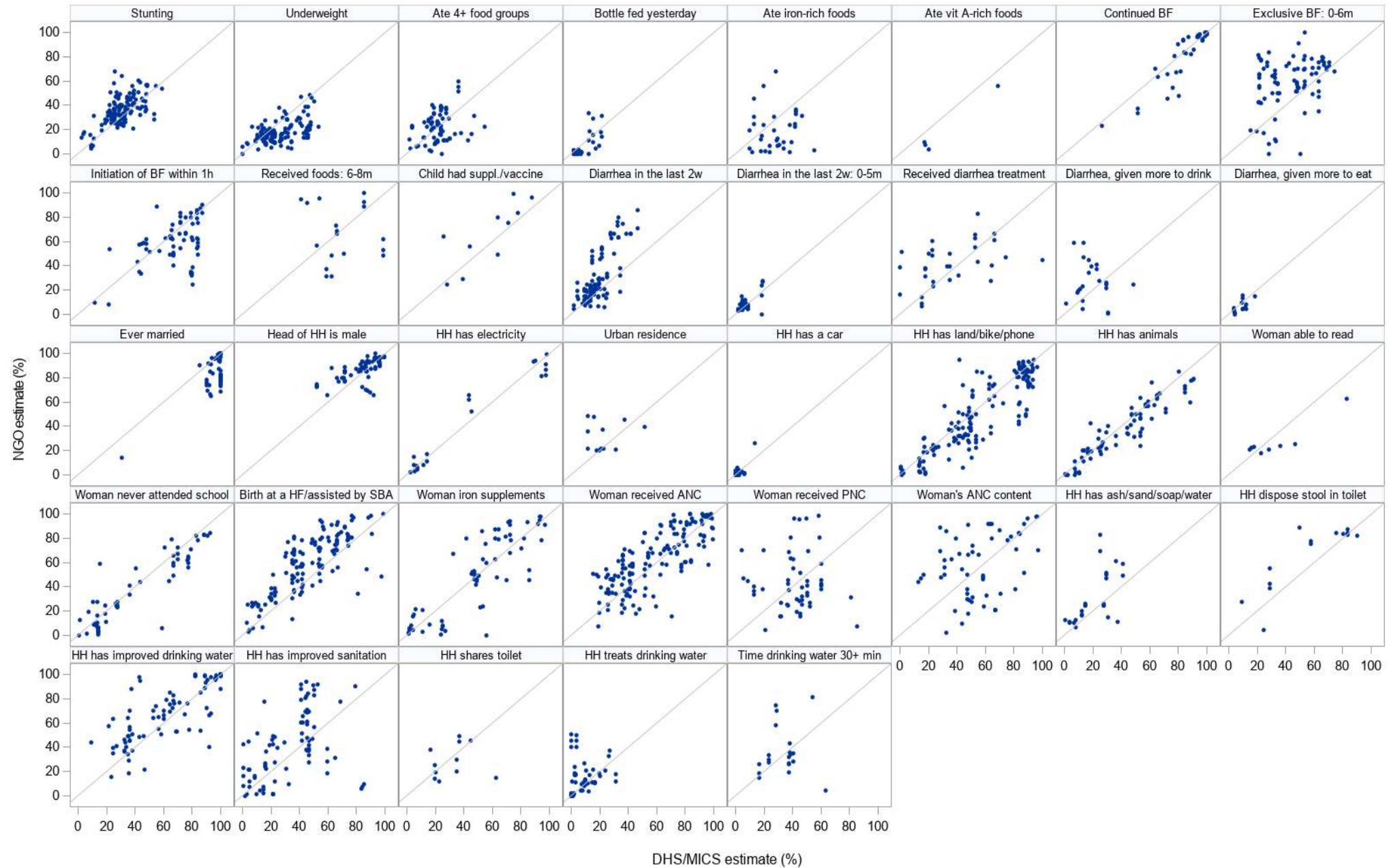
Simulations

Sampling error only
Samples from a "true" prevalence of 1%, 2%, 3%, up to 99%
1,000 iterations at each true prevalence

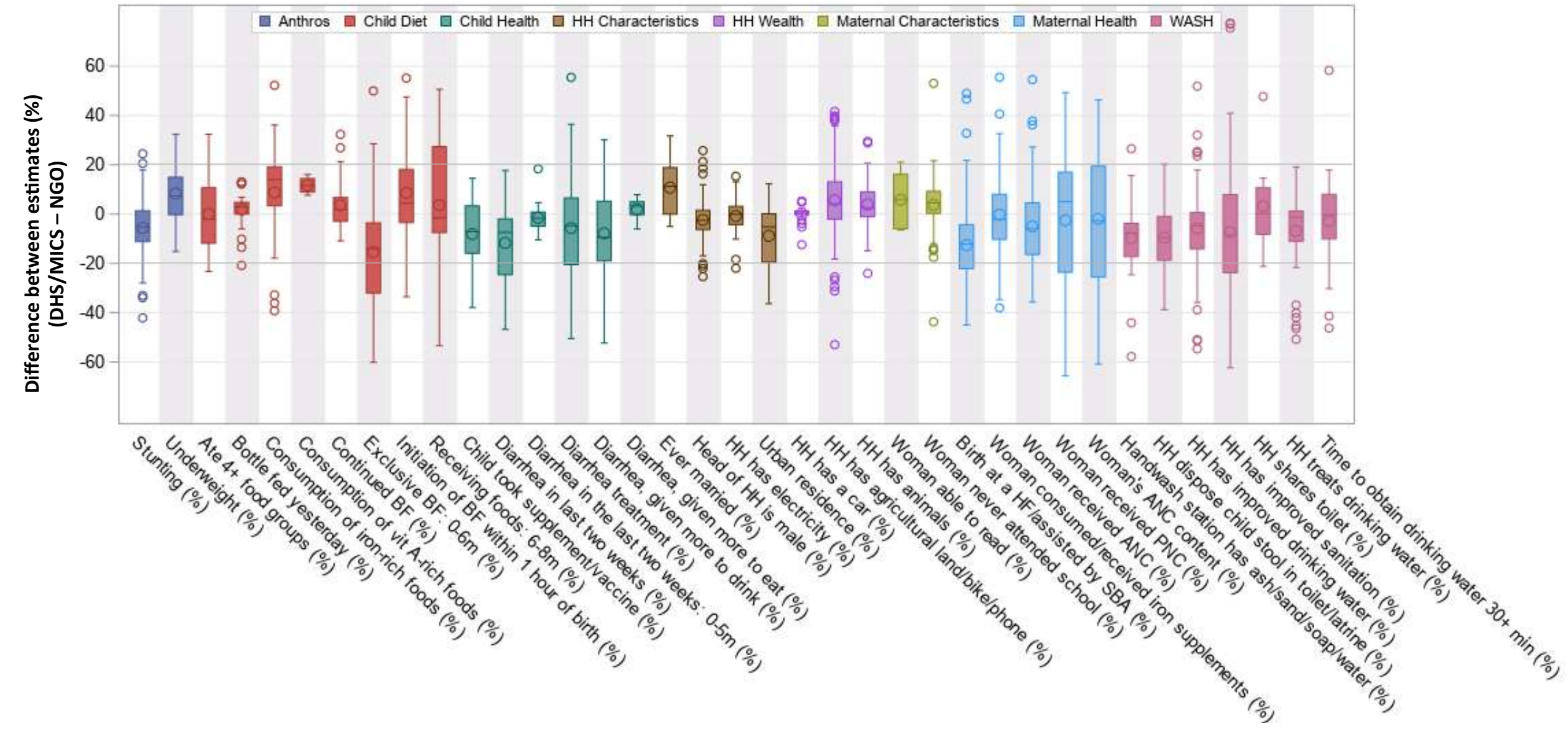
Methods

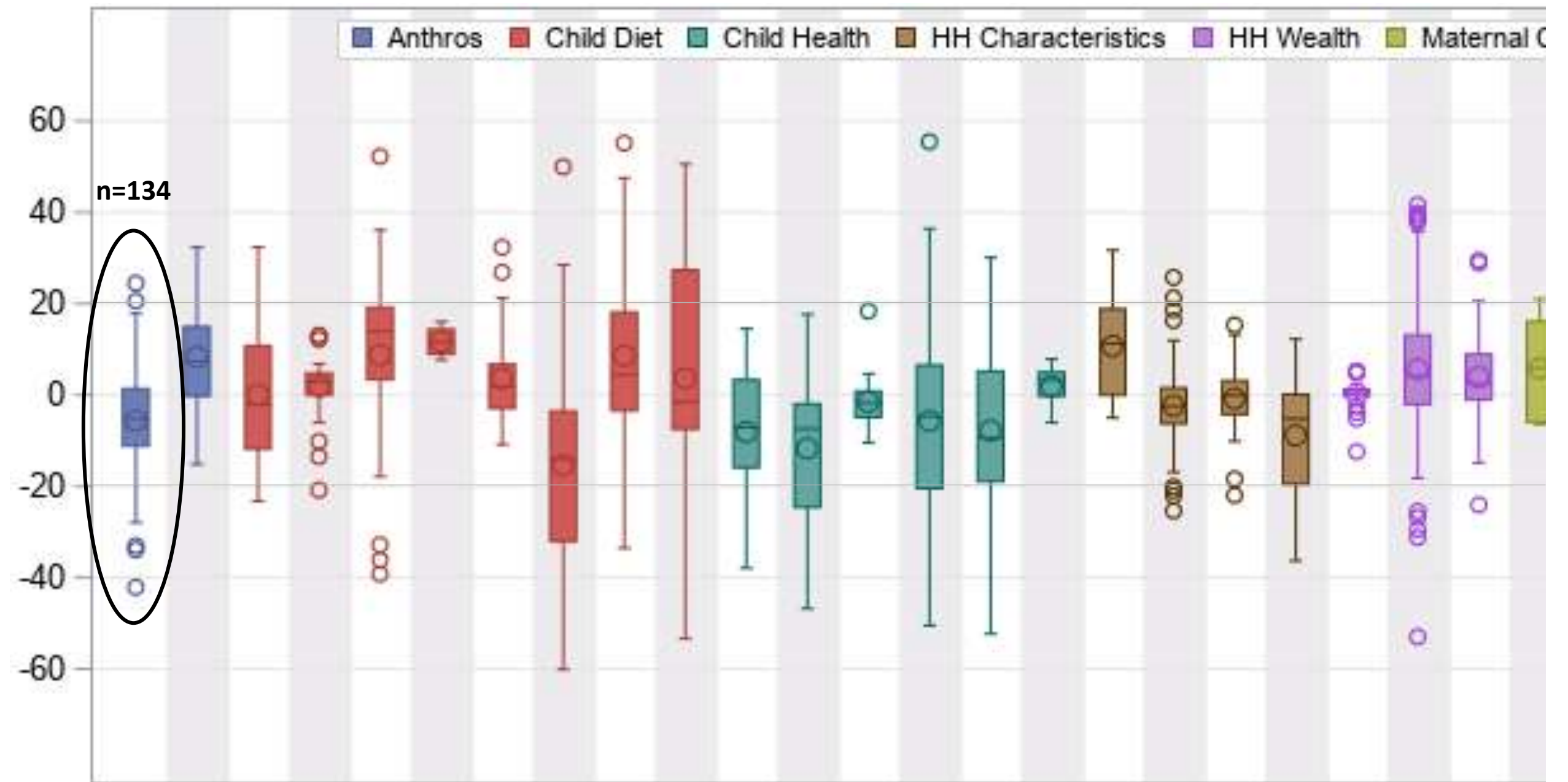
- **Comparison of estimates**
 - Difference = DHS/MICS – NGO
 - Absolute Difference = | DHS/MICS – NGO |
- Graphs
- ANOVA models
- Mixed models (not mixed methods!)

NGO estimate by the DHS/MICS estimate by subgroup of indicators.



Difference between estimates by subgroup of indicators from the NGO vs DHS/MICS.





Partition of variance of absolute difference between estimates by indicator/subgroup, geographical level difference, and year difference from the DHS/MICS vs NGO.

		Predicted variable: <u>Absolute difference between estimates</u>				
		Percent variance due to (%):				
	Model	n	Indicator/ Subgroup	Geo. level difference	Year difference	Other
Indicator	1	2,060	17.5	-	-	82.5
	2	2,060	17.2	0.0	0.7	82.1
	3	1,787	18.0	0.1	0.8	81.1
	4	979	14.9	0.2	0.3	84.6
Subgroup	1	2,060	16.0	-	-	84.0
	2	2,060	15.7	0.1	0.5	83.7
	3	2,048	15.8	0.1	0.5	83.6
	4	979	12.4	0.1	0.3	87.2

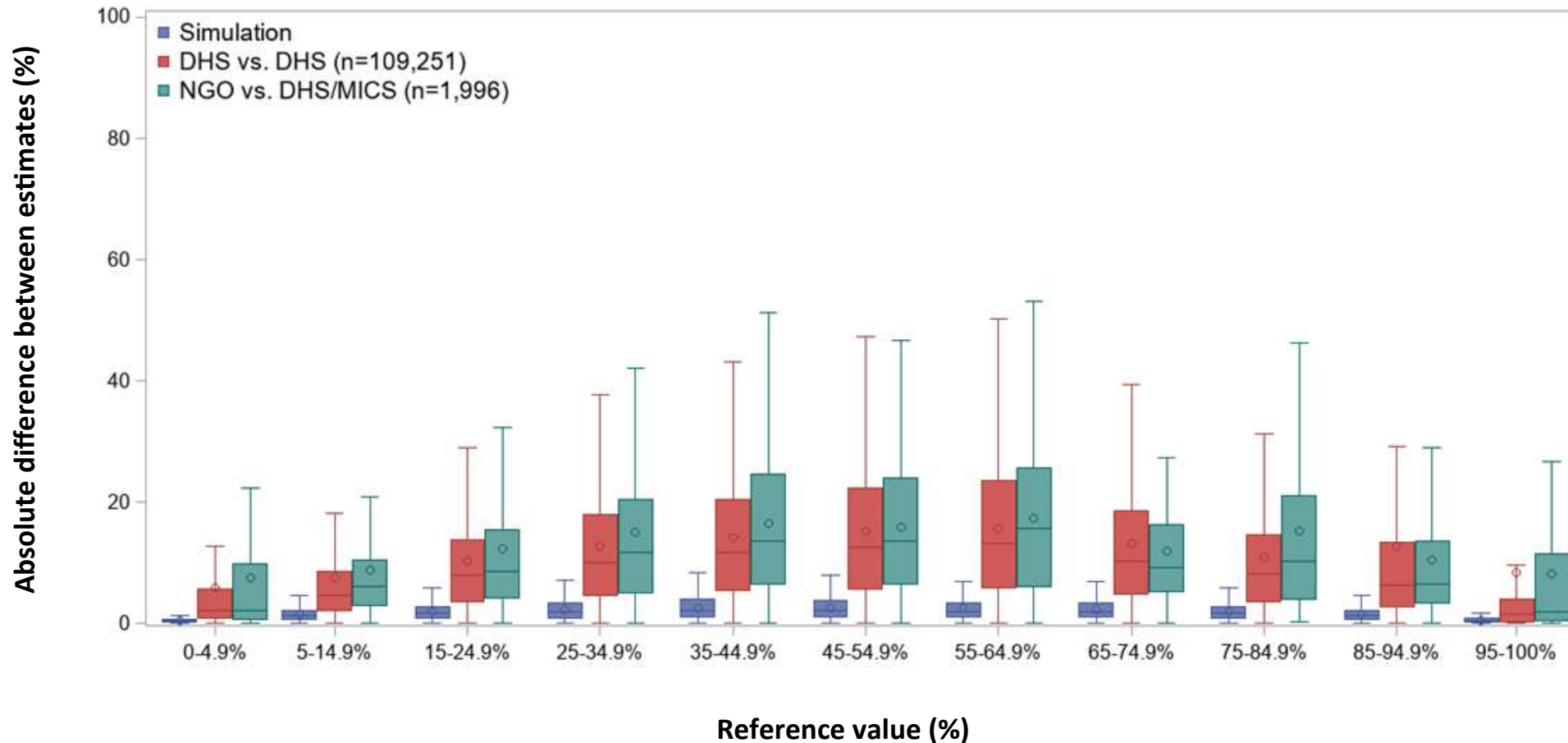
Model 1: Unadjusted (only indicator or subgroup as the independent variable)

Model 2: Adjusted for geographical level and year difference

Model 3: Adjusted for geographical level difference and year difference, excluding indicators/subgroups with number of pairs <10

Model 4: Adjusted for geographical level and year difference, excluding DHS indicators <25% and >75%

Absolute difference between estimates by the indicator reference value from the **Simulation**, **DHS vs DHS**, and **NGO vs DHS/MICS**.



Result of linear regression of the variance of the difference between estimates by subgroup from DHS vs DHS.

Geographical level:

1: village

2: district

3: province

4: region

5: country

Example: Stunting (%)

Variance (v) = $60 + 9.2 * \text{year diff} + 28.3 * \text{geo level diff}$

year difference=1 and level difference=1:

$$v = 60 + 9.2 * 1 + 28.3 * 1 = 97.5$$

SD = 9.9%

if Stunting prevalence = 40% then we may expect:

Stunting ($\pm 1\text{SD}$) = 40% \pm 9.9%

year difference=5 and level difference=2:

$$v = 60 + 9.2 * 5 + 28.3 * 2 = 162.6$$

SD = 12.7%

Discussion and conclusion

- **Large differences between NGO and DHS/MICS estimates**
 - Higher agreement in the extremes
 - Only 30% of the pairs of indicators were within 5% difference
- **Why?**
 - Not measuring the same underlying true value
 - Not measuring the indicators in the same way
 - Measuring the indicators with high technical error of measurement

Discussion and conclusion

Should NGOs forego primary data collection for baselines?

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Yes, when:

- estimate is expected to be <15% or >85%;
- DHS/MICS data collected within past year, and the sample size is >500;
- the indicator of interest is one of the few with consistent similarity between DHS/MICS and NGO estimates;
- the NGO has tolerance for estimates of low or unknown accuracy and does not need estimates for 100+ indicators.

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 - Note that implementation plans in case studies were not adjusted following baseline surveys. They already knew what needed to be done.

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 - Note that implementation plans in case studies were not adjusted following baseline surveys. They already knew what needed to be done.
 - Project impact monitoring can be done without a baseline household survey....

Acknowledgements

- This project is brought to you in partnership with **Global Affairs Canada** and **CanWaCH**
- Thanks to the **DHS** and **MICS** for sharing of data
- We'd like to sincerely thank all the **NGOs** that shared their baseline reports with us

Acknowledgements

- Alive&Thrive
- BORN
- CARE
- CMMB
- Eficor
- IntraHealth
- NIMS
- NIOPH
- NIOPH
- Oxfam
- PLAN
- Red Cross
- The World Bank
- World Vision
- WUSC

Case study from Vietnam

Tran Hung Minh

Center for Creative Initiatives in Health and Population



CanWaCH
Canadian Partnership for
Women and Children's Health

CanSFE
Partenariat canadien pour la
santé des femmes et des enfants



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Objective

- This study aims to make comparisons between data collected from an NGO baseline survey and the Multiple Indicator Cluster Survey (MICS) in Vietnam in order to show the margin of differences between these two sources of data and better understand the results of the main study

Methods

Step 1

Identify a list of common indicators that are available in both data sources

Step 2

Review questionnaires of both surveys and definition/measurement of each indicator

Step 3

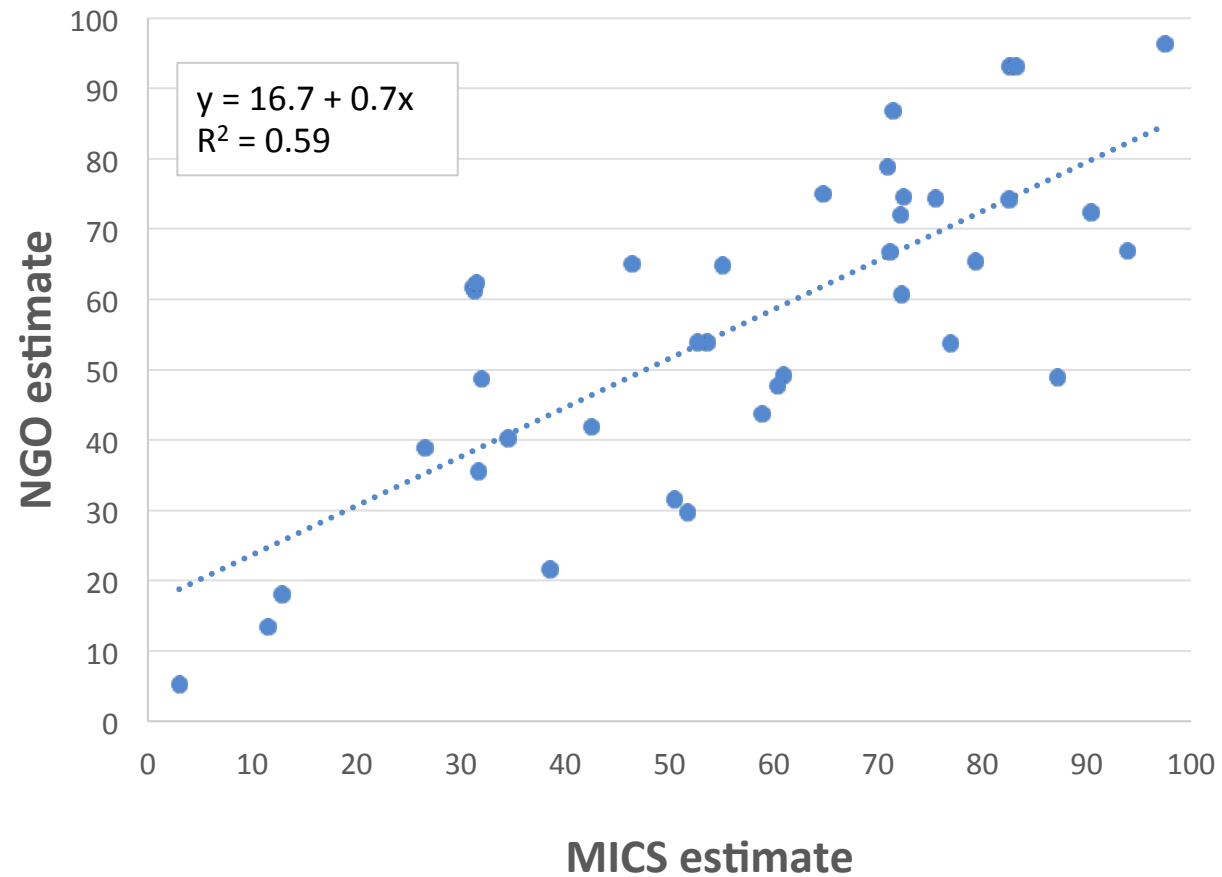
Run the data analysis for each data source

Step 4

Extract data into an excel file for comparison

Findings

MICS estimates (2013.5) by NGO estimates (2016)

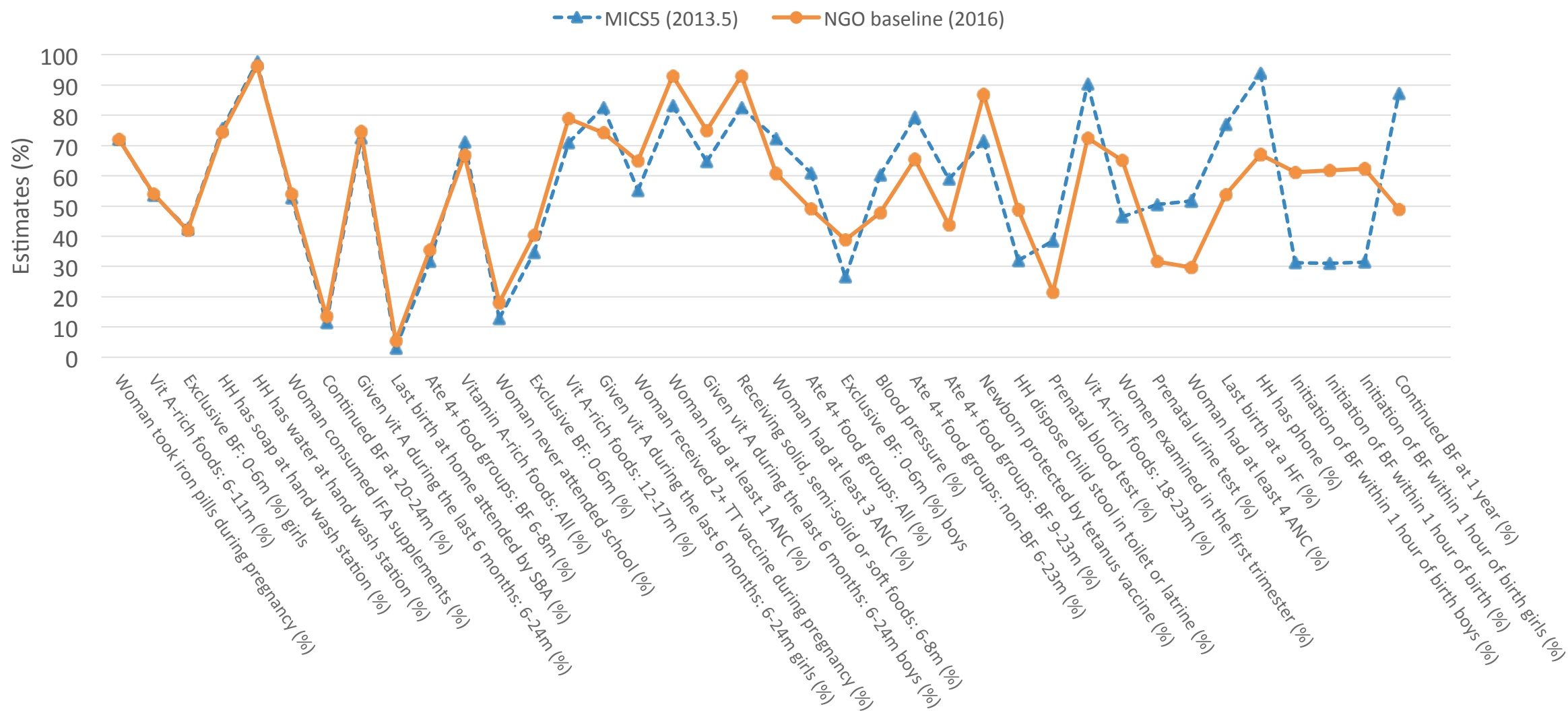


Findings

Group	Indicator	MICS5 (2013.5)		NGO baseline (2016)		Absolute difference (MICS-NGO)
		n	Estimate	n	Estimate	
Child diet	Ate 4+ food groups: All (%)	167	60.9	415	49.2	11.8
Child diet	Consumption of vitamin A-rich foods: 6-23m (%)	167	71.1	385	66.8	4.3
Child diet	Continued BF at 1 year (%)	50	87.2	65	49.0	38.2
Child diet	Continued BF at 20-24m (%)	28	11.5	111	13.5	2.0
Child diet	Exclusive breastfeeding: 0-6m (%)	73	34.5	67	40.3	5.8
Child diet	Initiation of BF within 1 hour of birth (%)	230	31.1	441	61.7	30.5
Child diet	Receiving solid, semi-solid or soft foods: 6-8m (%)	27	82.6	81	93.1	10.5
Child health	Given vitamin A during the last 6 months: 6-24m (%)	1128	72.4	383	74.7	2.3
Maternal characteristics	Woman never attended school (%)	230	12.8	452	18.1	5.3
Maternal health	Woman consumed IFA supplements (%)	230	52.6	319	53.9	0.8
Maternal health	Blood pressure (%)	230	60.3	421	47.7	12.6
Maternal health	Woman took iron pills during pregnancy (%)	230	72.1	446	72.0	0.1
Maternal health	Women examined in the first trimester (%)	230	46.4	421	65.1	18.6
WASH	HH dispose child stool in toilet or latrine (%)	234	32.0	452	48.7	16.6
WASH	HH has soap at hand wash station (%)	1257	75.5	414	74.4	1.1
WASH	HH has water at hand wash station (%)	1257	97.5	414	96.4	1.1

MICS and NGO estimates by indicator

The indicators are sorted from the smallest to the largest absolute difference between MICS and NGO estimates



Discussion

- The large differences appeared in certain types of indicators which may be influenced by recent interventions/policies, for example:
 - The large absolute differences among the indicators related to breastfeeding could be a result of the recent application of MOH policy about forbidding to sell or advertise formula milk in hospitals
- The differences between the two sources of data indicate that if the NGO were to use MICS instead of their own data, they may think the project should be implemented differently and measuring project impact would be challenging.

Acknowledgements

- This project is brought to you in partnership with **Global Affairs Canada** and **CanWaCH**
- Thank you to UNICEF for making the **MICS** data available



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Nepal Case study for the project “Maximizing use of existing data to strengthen program design, evaluation, and impact”

Report and presentation prepared by Naomi Saville, Freelance Consultant

Data compiled by Milena Nardocci, TRANSNUT - *Université de Montréal*

and Peter Berti, HealthBridge Foundation of Canada



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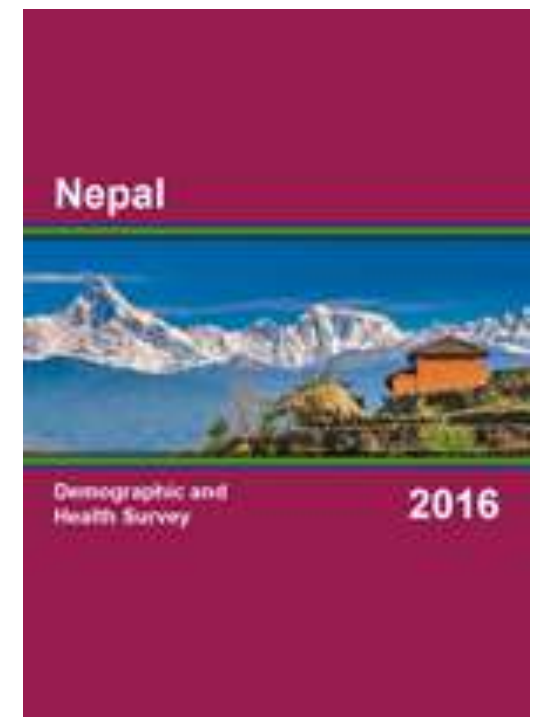
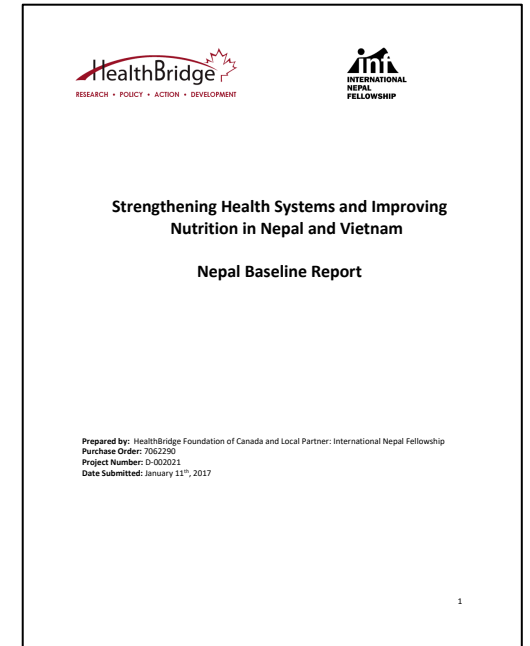


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Overall objective

- INF's **MNCH project's 2016 baseline (NGO)** data from district in Province 5 in the plains of Nepal
- Publicly available **2016 Nepal Demographic Health Survey (DHS)** data
- Test the hypothesis that publicly available data can substitute project-specific baseline data for selected indicators



Dataset 1: Nepal 2016 Demographic Health Survey (“DHS”)

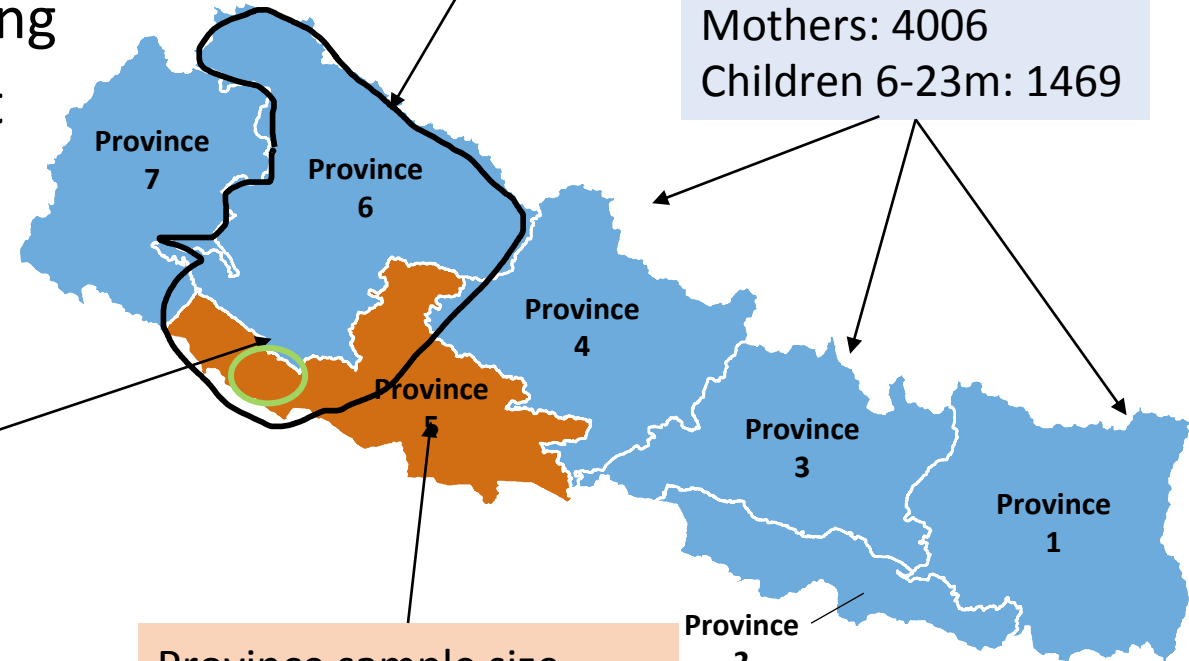
- Nationally representative survey sampled with population proportion to size sampling across, Nepal disaggregated into different levels:
 - Country
 - Province
 - Region
 - District
- Data collection 19th June 2016 to 31st Jan 2017

District sample size
Households: 180
Mothers: 81
Children 6-23m: 34

Region sample size
Households: 518
Mothers: 218
Children 6-23m: 81

Country sample size
Households: 11040
Mothers: 4006
Children 6-23m: 1469

Province sample size
Households: 1631
Mothers: 651
Children 6-23m: 247

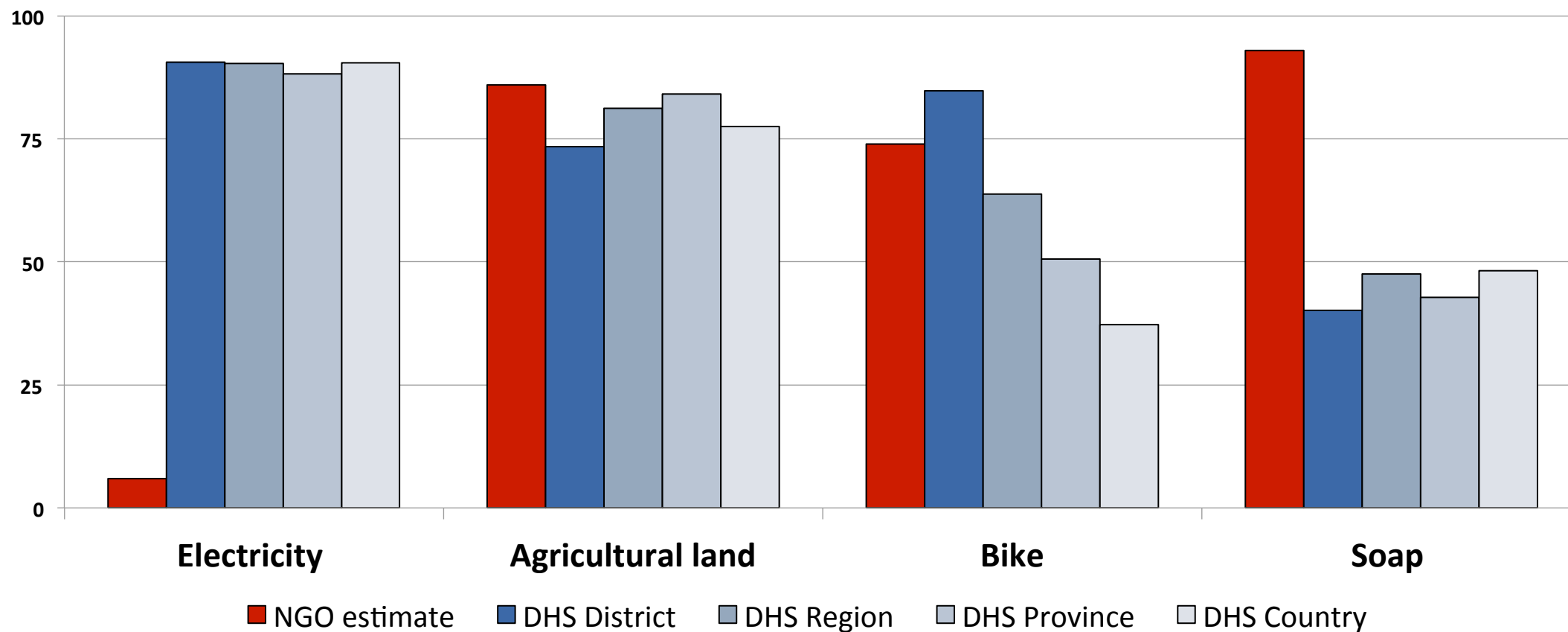


Dataset 2: Maternal Newborn and Child Health 2016 project baseline (“NGO”)

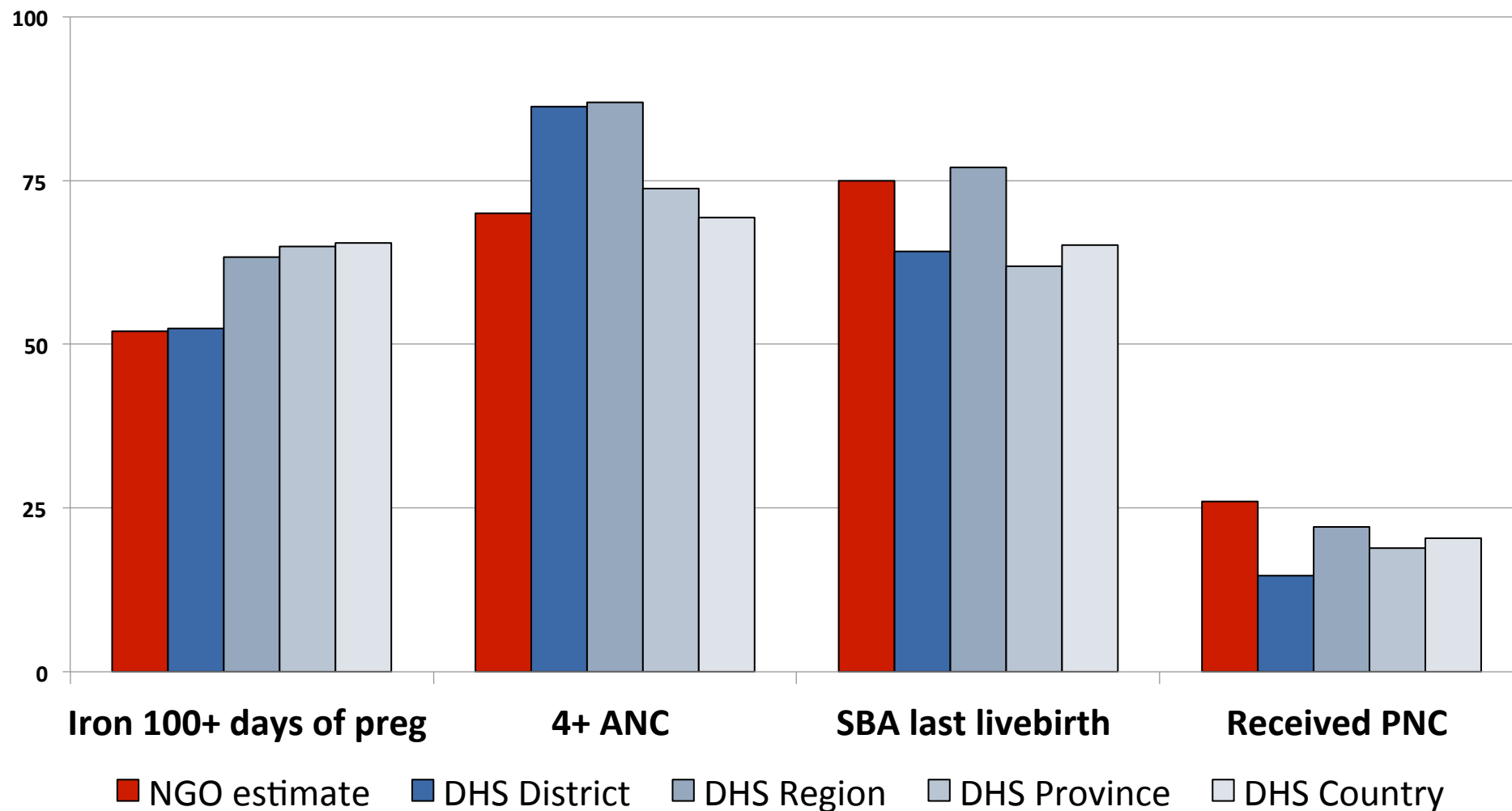
- Survey of target populations sampled with population proportion to size sampling
 - 543 mothers
 - 381 children under 24 months
 - 118 children 6 to 11 months
- The 150-question questionnaire on standard MNCH survey questions
- Data collection 6th to 12th November 2016



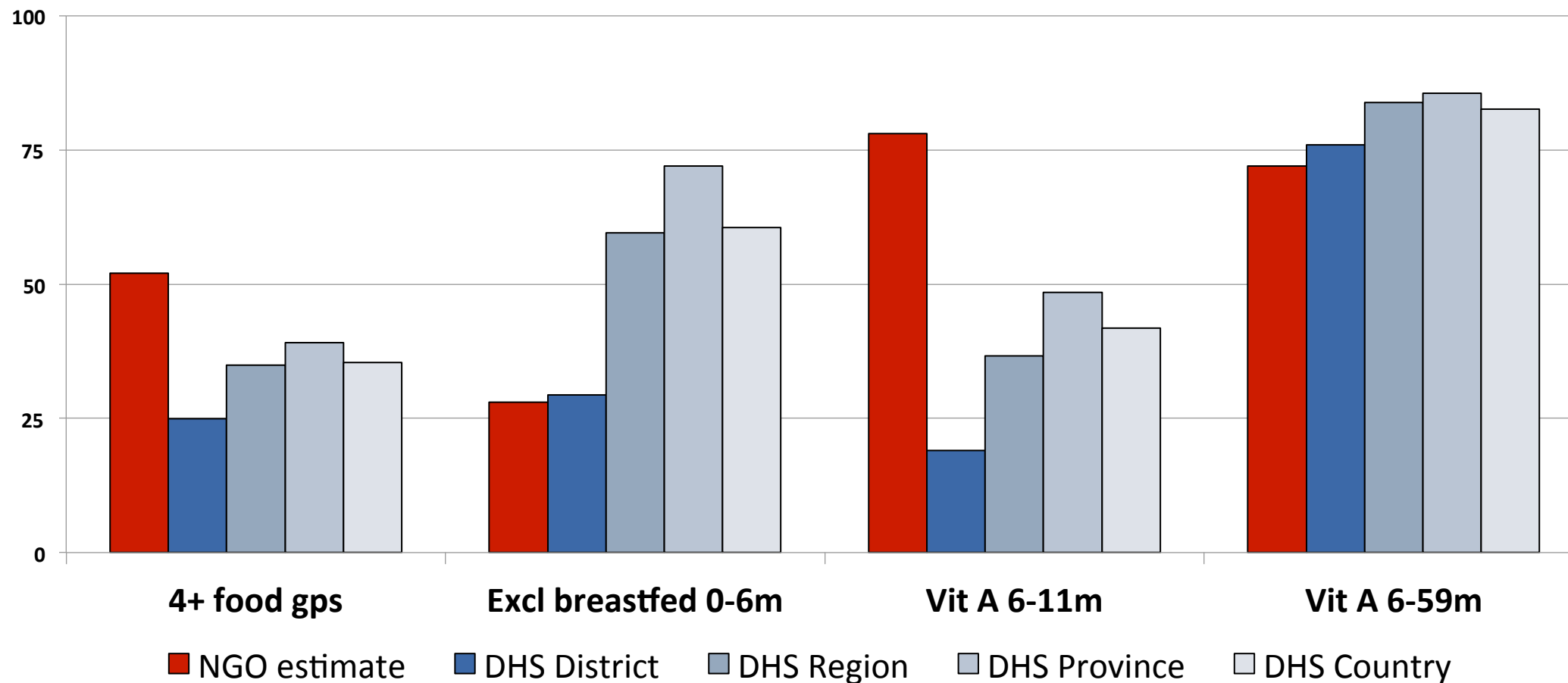
Estimates (%) of household indicators in NGO and different DHS population subgroups



Estimates (%) of maternal indicators in NGO and different DHS population subgroups



Estimates (%) of child indicators in NGO and different DHS population subgroups



Spearman rank correlations between NGO and DHS estimates, by indicator category and geographic level

	Maternal health (n=10)	Child health (n=6)	Household Indicators (n=7)
1. District	0.85*	0.54	-0.32
2. Region	0.90*	0.66	-0.07
3. Province	0.84*	0.66	-0.07
4. Country	0.84*	0.66	0.04

*p<.003

Discussion

- For maternal health care uptake indicators:
 - **the correlation was highest for regional level data**
 - median absolute difference between NGO and DHS estimates were
 - lowest for country level DHS
 - followed by Province level DHS
- Sample sizes in District DHS and subgroups of child age too small
- Use of DHS data to set NGO targets would have changed them substantially
- *BUT* DHS 2016 data collection had not completed at the time of NGO planning so could not have been used (older DHS only could have been used)

Conclusions

- Nationally available datasets could be drawn upon in Nepal, prioritising larger sample size subgroups for comparison
- NGO Maternal health estimates were closer to DHS than child or household indicators
- National level data **cannot substitute** for well-designed, contextualised mixed method NGO baseline studies which explore
 - project beneficiaries' problems
 - ways of overcoming them and barriers to doing so

Acknowledgements

- This project is brought to you in partnership with **Global Affairs Canada** and **CanWaCH**
- Thanks to the International Nepal Fellowship (**INF**) and Health Research & Development Forum (**HRDF**) for collecting the baseline data and sharing it and to all the respondents for their time
- Thanks to **New Era** for collection of the DHS data and to **DHS** for sharing of data



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Discussion

Ideas for next steps:

- Examine how NGO baselines are used to modify implementation plans
- Compare NGO to NGO
- Intensive case study of single country – DHS/MICS, government data, multiple NGOs, academics, etc

Discussion

Audience Question:

- What adjustments do you make to implementation plans based on results of household baseline survey?

Discussion

Audience Question:

- Do you think you would use DHS or MICS the next time you have a survey to do?

Contact

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