

Understanding ITN Use: What do your numbers really mean?

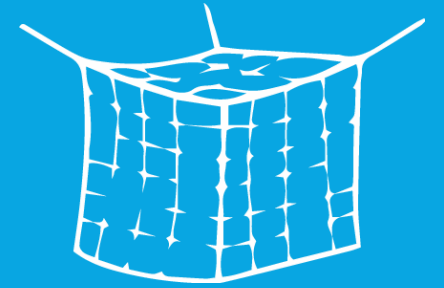
Wednesday, February 21, 8-9 a.m. EST

Moderated by Donald Dickerson: Senior Malaria Technical Advisor USAID
Presenter: Hannah Koenker, VectorWorks Project Director, Johns Hopkins Center for Communication Programs



Overview

- ITN indicators: ownership, access and use
- ITN Access and Use Report
- Trends
- Using the available data to inform programming



ITN Indicator Review

Our goal

Universal Access

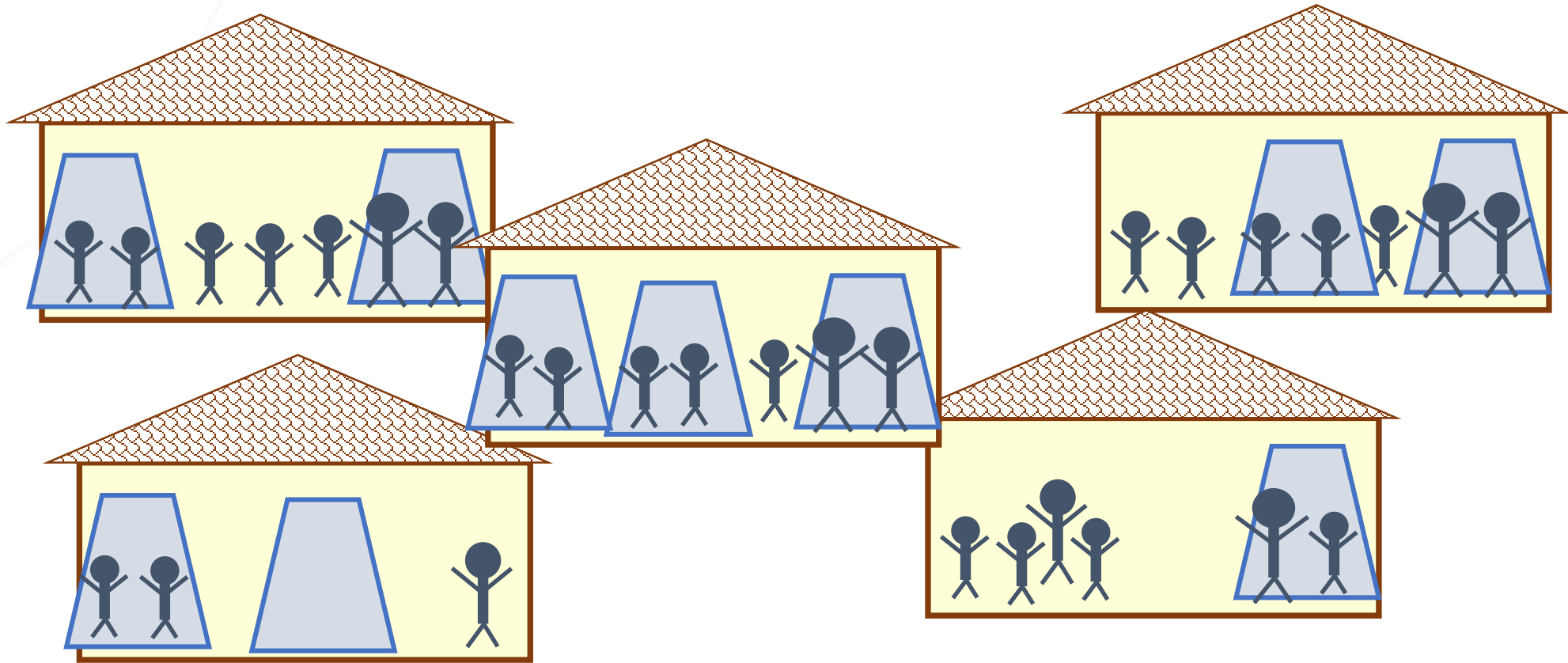
ITN use

Universal coverage

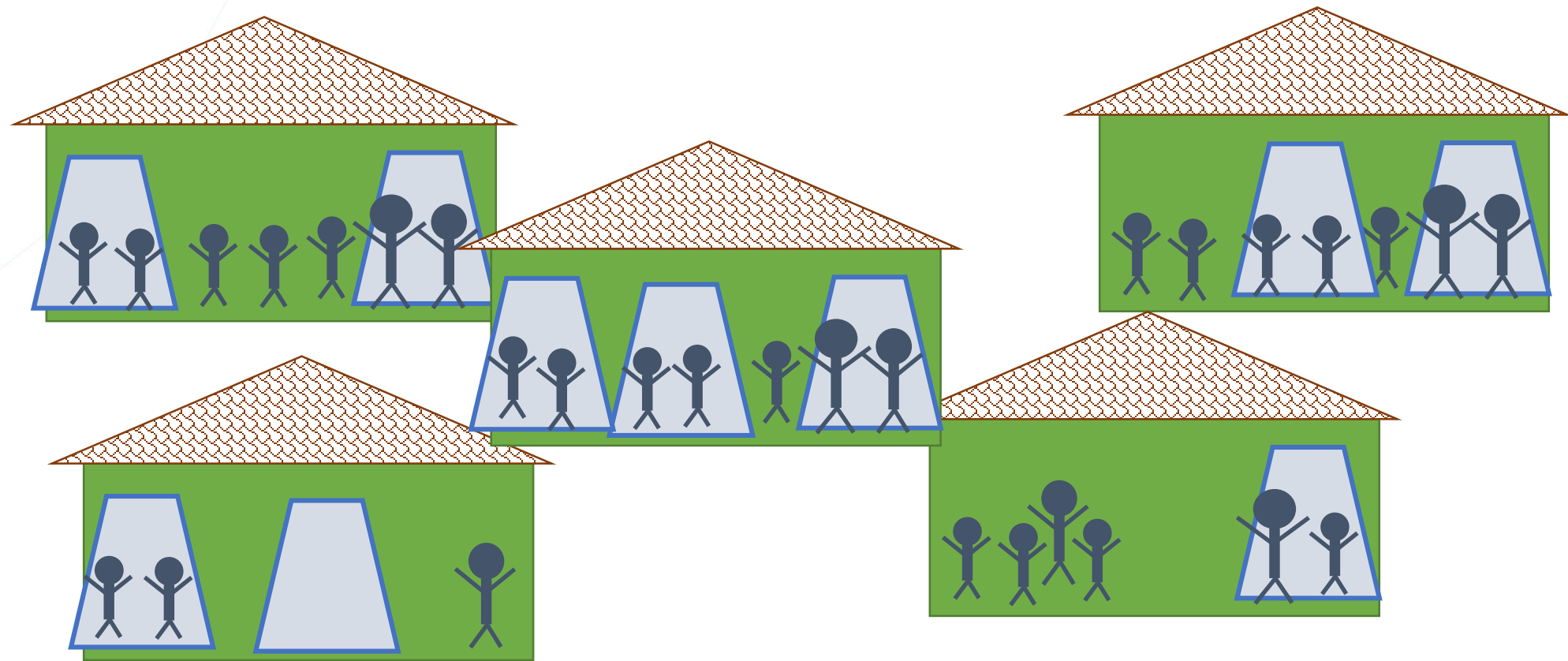
What is “coverage”?

- We have three indicators for ownership/possession
- They tell different stories

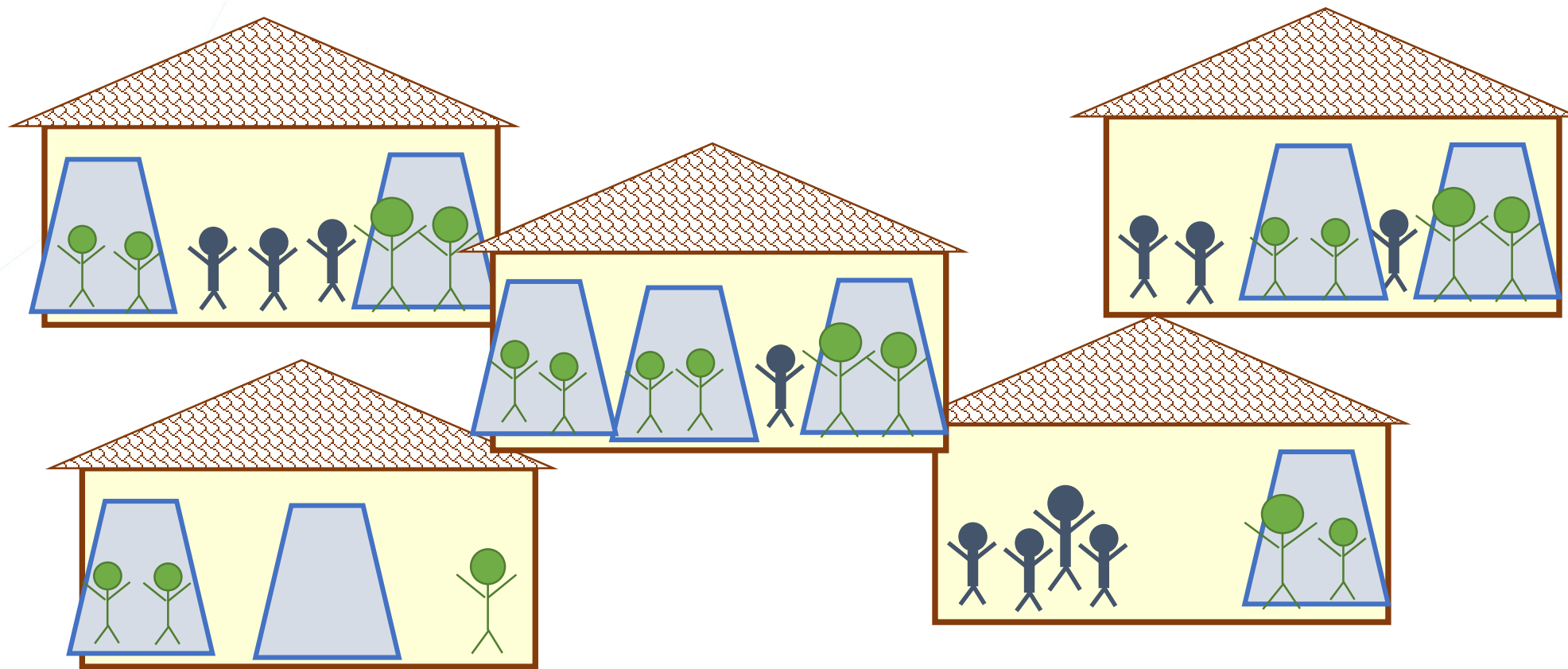
A village of 5 houses and 30 people



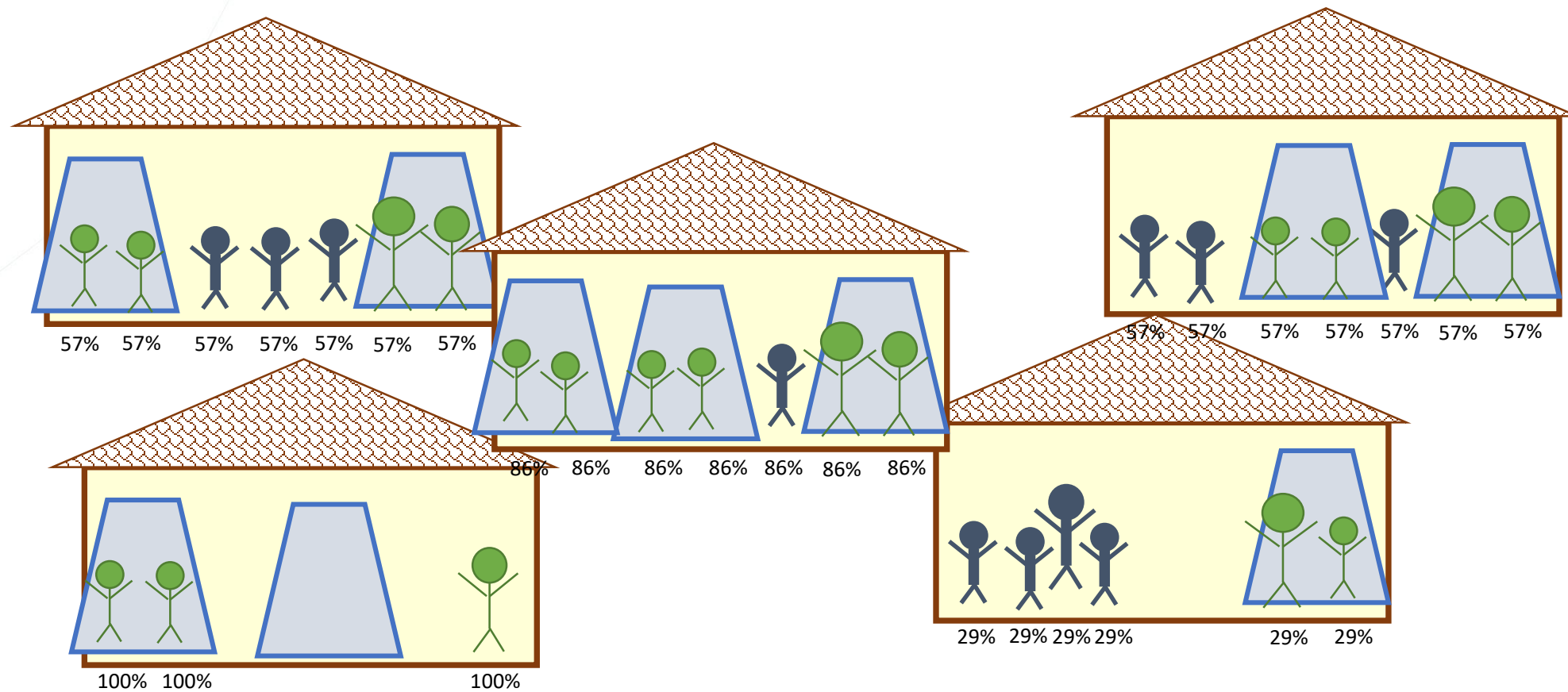
% of households owning at least 1 ITN:
5 out of 5 = 100%



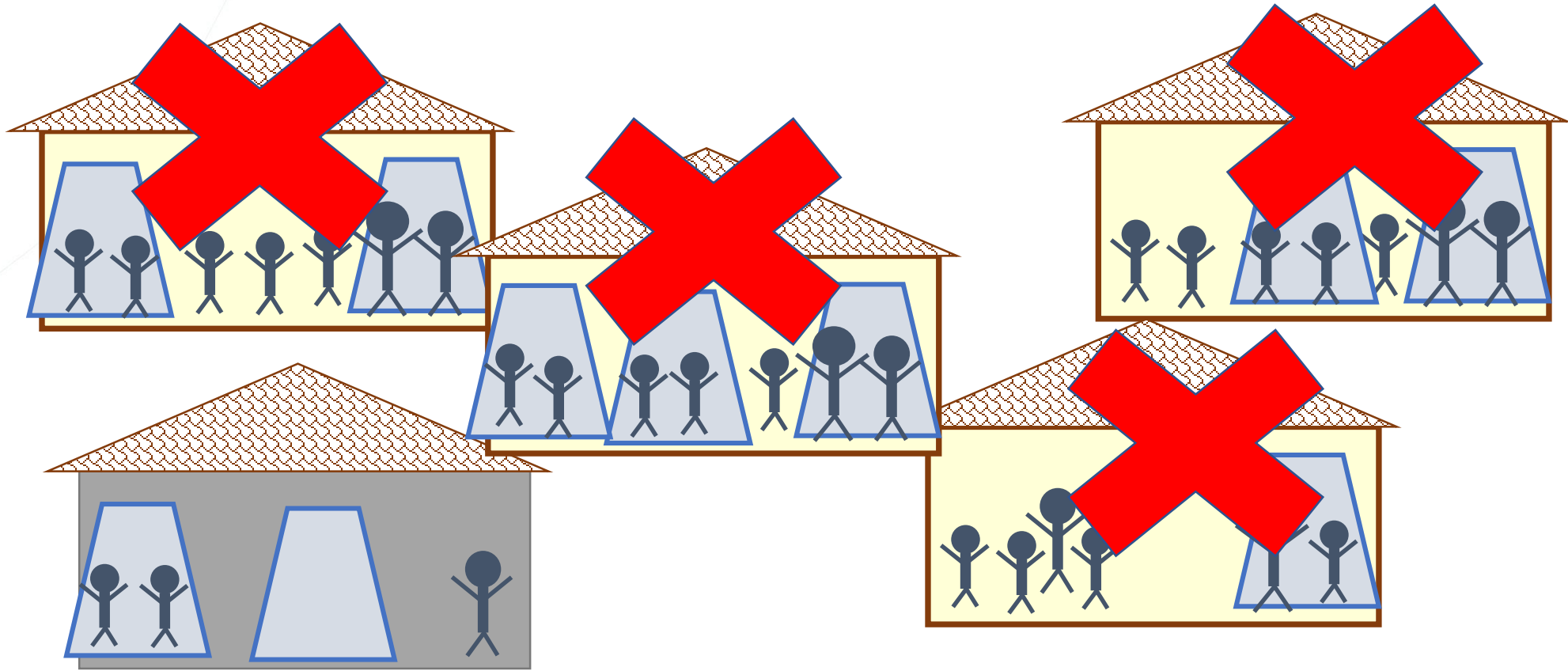
% of population with access to an ITN:
19 people out of 30 = 63%



% of population with access to an ITN: 19 people out of 30 = 63%



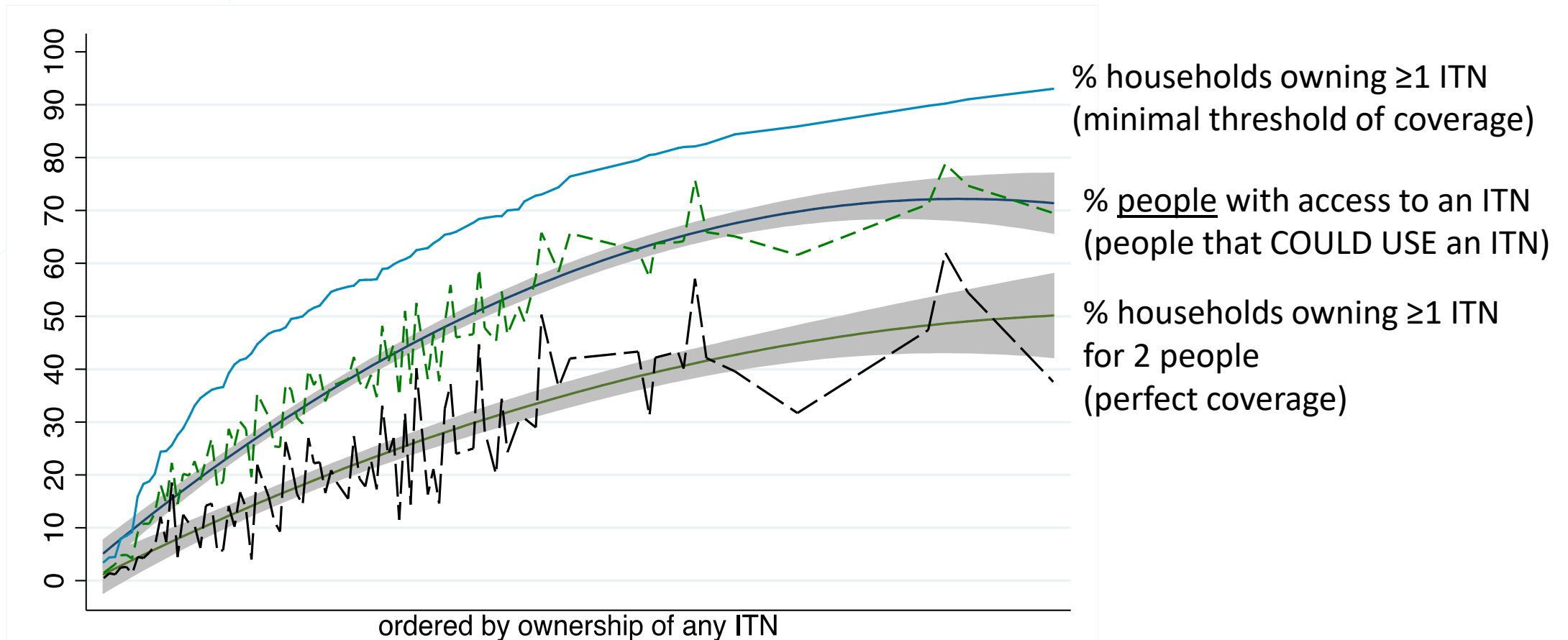
% of households owning at least 1 ITN for every 2 people:
1 out of 5 = 20%



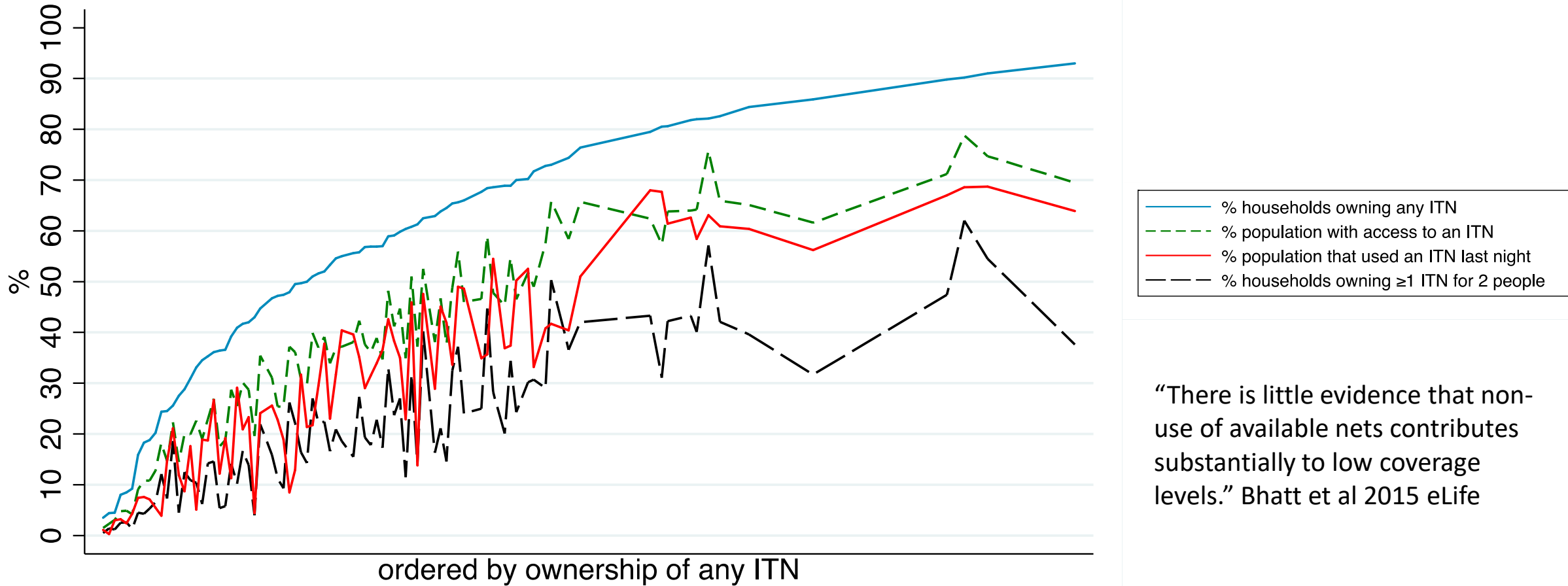
Are we doing well or terrible?

- % hh owning ≥ 1 ITN – 100%
- % population with access to an ITN – 63%
- % hh owning ≥ 1 ITN for every 2 people – 20%

Each indicator has its limits



ITN use is driven by ITN access



“There is little evidence that non-use of available nets contributes substantially to low coverage levels.” Bhatt et al 2015 eLife

Clearing up how ITN use is asked in surveys

- Respondents are NOT asked if they slept under a net the previous night! Because this would bias the results.
- Instead, for each net found in the household, a series of questions are asked (brand, source, etc). Then, 'did anyone sleep under this net last night'.
- If yes, then 'who slept under this net last night'? The line numbers of family members are entered, based on the listing of household members at the beginning of the survey.
- In the data cleaning/prep stage, our friends at Measure DHS then generate an individual-level variable in the dataset, which is yes/no for net use the previous night.

Calculating ITN Use Given Access

- Divide the proportion of people using a net by the proportion of people with access to a net

$$\frac{\% \text{ population that used an ITN the previous night}}{\% \text{ population with access to an ITN}}$$

- This is an accurate representation of the net-use gap in terms of behavior, and answers the question:
 - What proportion are actually using an ITN, out of people who could use one?



ITN Access and Use Report

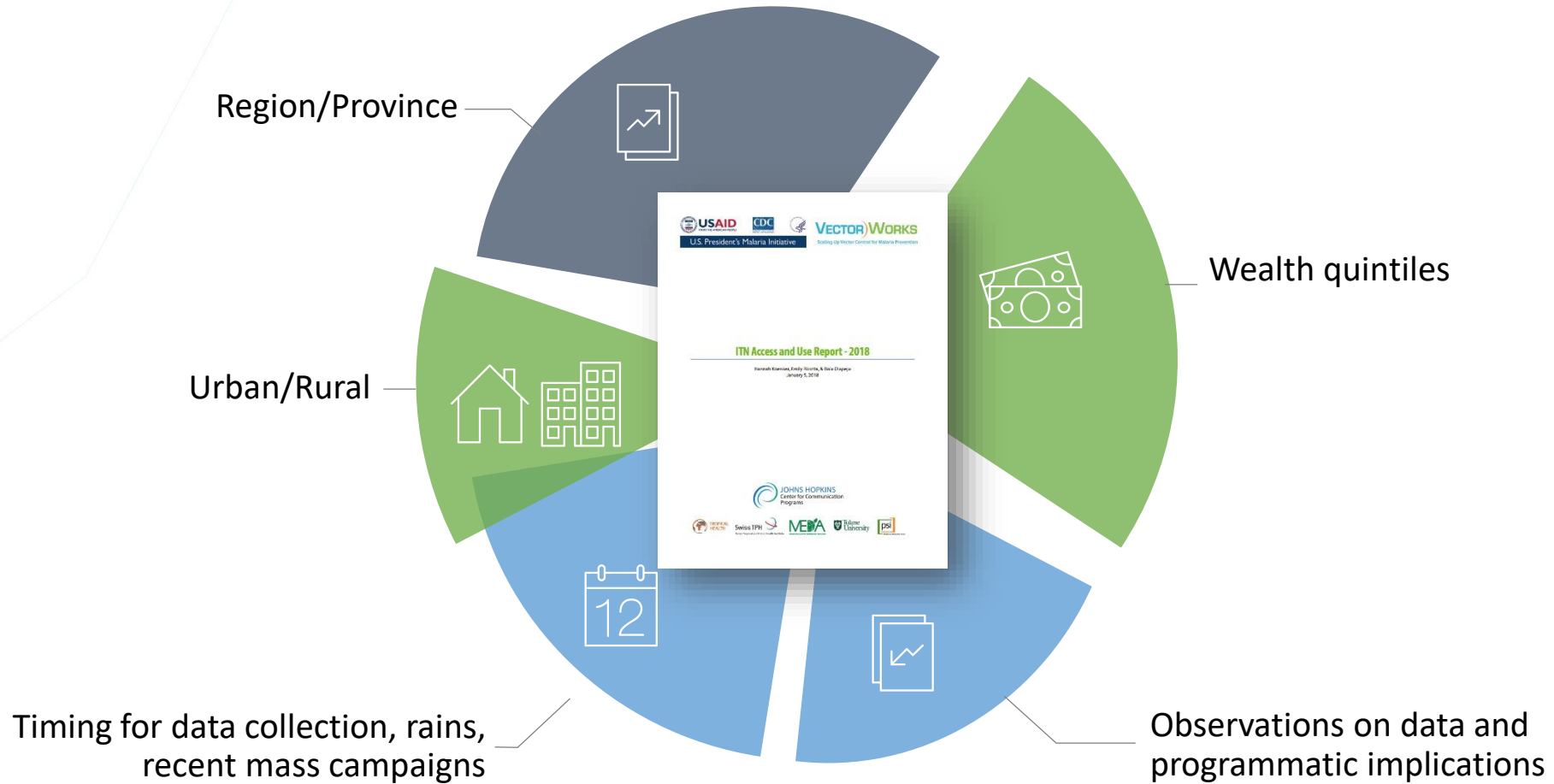
www.vector-works.org/resources/

ITN Access and Use Report

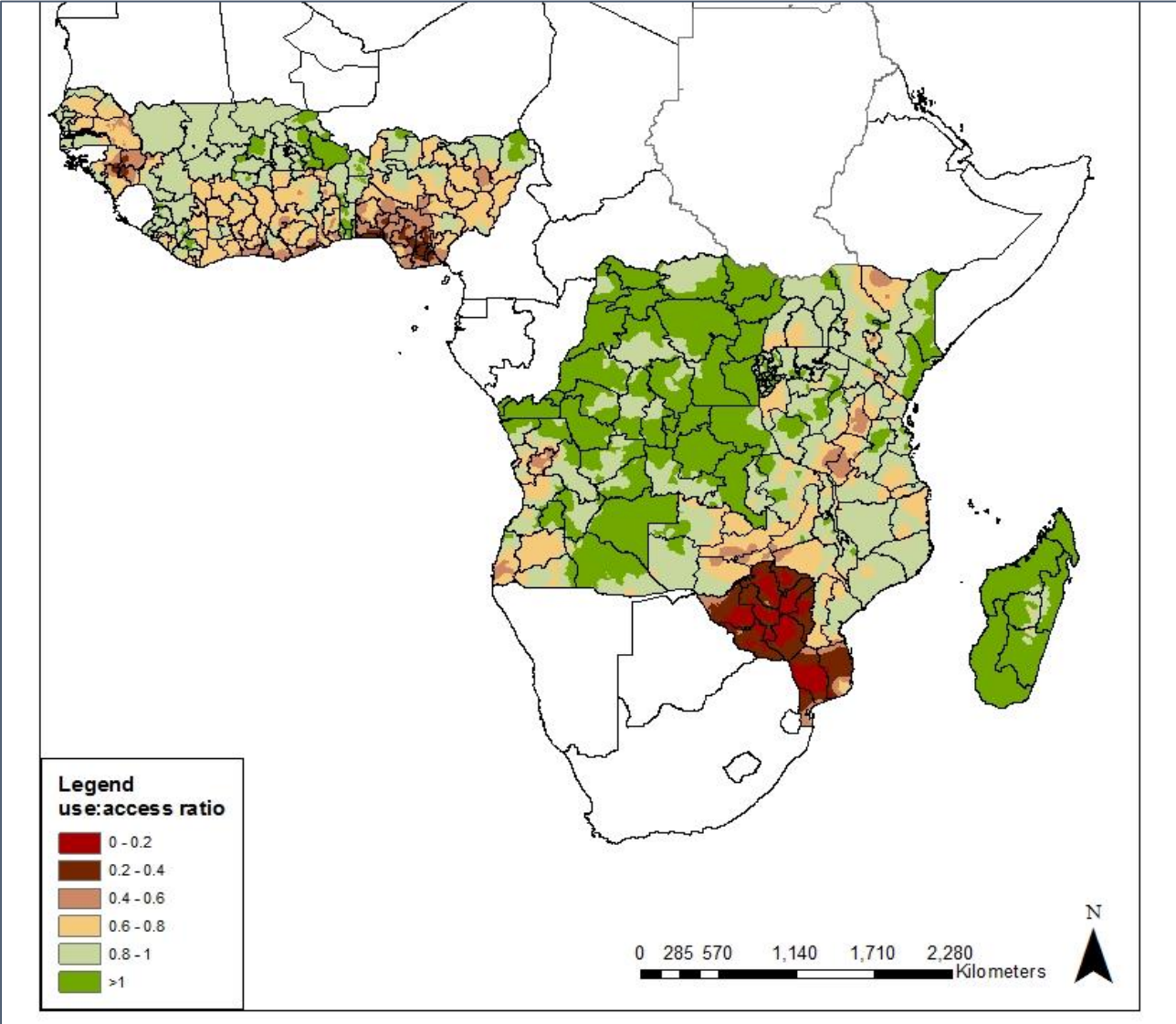
- 103 household surveys
- 44 countries
- Interpolated maps for PMI-focus countries (separate file)
- Updated at least quarterly with recently released MIS and DHS data
 - Check back often!



Looking for patterns and trends



Geography is important



National Results

Note 1: Color coding of use:access ratios and explanation

≥0.80	Use:access ratio is good, with at least 80% of those with access to an ITN using one the previous night
≥0.60- <0.80	Use:access ratio is below target level; improvements should be made
<0.60	Use:access ratio is poor; explore reasons for non-use of available nets, such as dry season, low-transmission area, and IRS activities.

Table 1: National results for ITN ownership, access, use, and use:access ratio in PMI Focus Countries

Country Survey Year	% of households owning ≥1 ITN	% of population with access to an ITN within their own household	% of population that used an ITN the previous night	Ratio of use:access
Angola MIS 2006-7	27.5%	14.5%	11.9%	0.82
Angola MIS 2011	34.5%	19.0%	18.9%	0.99
Benin DHS 2006	24.5%	14.7%	14.7%	1.00
Benin DHS 2011-12	81.8%	64.0%	62.6%	0.98
Cambodia DHS 2005	4.5%	3.1%	3.0%	0.96
DRC DHS 2007	9.2%	4.2%	4.3%	1.03
DRC MICS 2010	51.0%	30.1%	30.9%	1.03
DRC DHS 2013-2014	70.0%	46.5%	50.2%	1.08
Ghana DHS 2008	41.7%	30.1%	20.9%	0.69
Ghana MICS 2011	49.3%	38.0%	27.8%	0.73
Ghana DHS 2014	68.3%	59.0%	35.7%	0.60
Guinea DHS 2005	3.5%	1.5%	1.1%	0.77
Guinea DHS 2012	47.4%	25.3%	18.9%	0.75
Kenya DHS 2008	55.7%	42.3%	35.1%	0.83
Kenya DHS 2014	58.9%	48.2%	42.6%	0.88
Kenya MIS 2015	62.5%	52.5%	47.6%	0.91
Lao MICS 2012	47.9%	40.2%	40.9%	1.02
Liberia MIS 2009	47.2%	25.4%	22.8%	0.90
Liberia MIS 2011	49.7%	30.8%	32.1%	1.04
Liberia DHS 2013	54.6%	37.0%	31.7%	0.86
Madagascar DHS 2008	57.0%	34.7%	36.6%	1.05
Madagascar MIS 2011	80.5%	57.3%	68.4%	1.19
Madagascar MIS 2013	69.2%	47.8%	55.0%	1.15
Malawi DHS 2010	56.8%	37.6%	29.0%	0.77

Values over 1.00 indicate more than 2 people share an ITN, on average



Country Results

Uganda

Three surveys were available in Uganda, the 2009 MIS, the 2011 DHS, and the 2014-2015 MIS. Fieldwork for the 2009 survey was conducted in November and December of 2009. Fieldwork for the 2011 DHS was conducted from June to November 2011. Fieldwork for the MIS was conducted from December 2014 through February 2015. Uganda has two rainy seasons. It typically rains from March to May and September to November, leaving December to February and June to August dry. Different regions were sampled in both of these surveys, making comparison between years difficult. In 2009, 121 of 4,421 households reported being sprayed with IRS (3%). In 2011, 753 of 9,033 (8%) reported IRS. In 2014-15, 432 of 5,325 (8%) reported IRS. Uganda implemented under-five ITN distribution in 2010, and mass distributions in 2013-2014.

	2009 MIS	2011 DHS	2014- 15 MIS	2009 MIS	2011 DHS	2014- 15 MIS	2009 MIS	2011 DHS	2014- 15 MIS	2009 MIS	2011 DHS	2014- 15 MIS
	% of households owning ≥1 ITN			% of population with access to an ITN within their own household			% of population that used an ITN the previous night			Ratio of use:access		
Region												
Central 1 ^s	35%	59%	81%	24%	49%	72%	17%	35%	59%	0.71	0.71	0.82
Central 2	24%	60%	82%	14%	49%	71%	9%*	37%	59%	0.64	0.76	0.83
Kampala	49%*	57%	86%	45%*	52%	78%	38%*	44%*	71%*	0.84	0.85	0.90
East Central	34%	38%*	82%	21%	25%*	67%	18%	19%*	62%	0.86	0.76	0.92
Mid Eastern	59%*		95%*	36%		79%	31%*		71%*	0.86		0.90
North East	77%*		97%*	53%*		81%*	50%*		81%*	0.94		1.00
Eastern		56%			38%*			35%			0.92	
North		67%			46%			36%			0.78	
Karamoja		57%			37%*			35%			0.95	
Mid Northern	64%*		94%*	43%*		84%*	31%*		75%*	0.72		0.90
West Nile	52%	82%*	96%*	32%	60%*	85%*	31%*	46%*	72%*	0.97	0.77	0.86
Western		69%*			52%			41%			0.79	
Mid Western	34%		94%*	22%		81%	16%		76%*	0.73		0.94
Southwest		58%	97%*		43%	90%*		30%	63%		0.70	0.70

Country Results

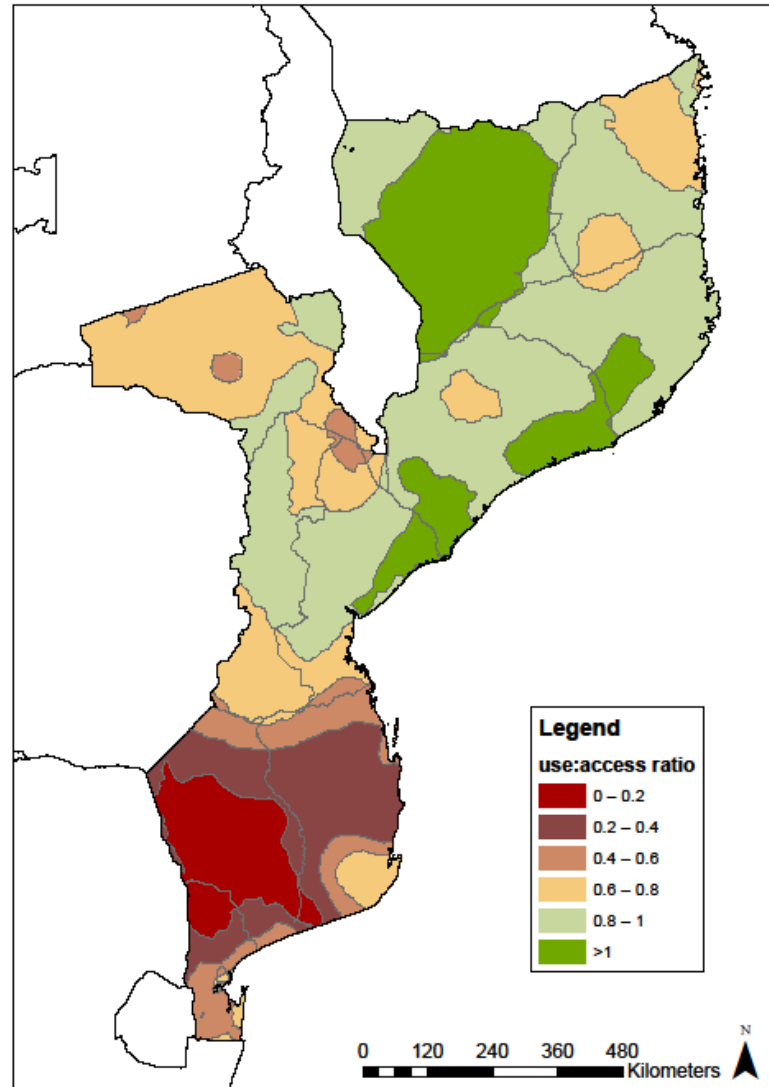
	2009 MIS	2011 DHS	2014- 15 MIS	2009 MIS	2011 DHS	2014- 15 MIS	2009 MIS	2011 DHS	2014- 15 MIS	2009 MIS	2011 DHS	2014- 15 MIS
	% of households owning ≥1 ITN			% of population with access to an ITN within their own household			% of population that used an ITN the previous night			Ratio of use:access		
South	44%			31%			23%			0.74		
Wealth Quintile												
Poorest [§]	47%	55%	91%	30%	37%	77%	27%	33%	72%	0.90	0.89	0.94
Poorer	44%	58%	94%*	30%	42%*	82%*	24%	33%	73%	0.80	0.79	0.89
Middle	49%	60%	93%	33%	43%*	80%	26%	33%	70%	0.79	0.77	0.87
Richer	45%	62%*	88%	29%	47%*	79%	21%	34%	64%*	0.72	0.72	0.81
Richest	49%	63%*	85%*	36%	54%*	76%	29%	42%*	64%*	0.81	0.78	0.84
Residence												
Urban [§]	46%	59%	84%	37%	51%	76%	30%	42%	65%	0.81	0.82	0.86
Rural	47%	60%	92%*	31%	44%*	79%	25%	34%*	69%	0.81	0.77	0.87
IRS												
No [§]	46%	59%	90%	31%	44%	79%	26%	35%	68%	0.81	0.79	0.87
Yes	54%	72%*	94%	37%	53%*	82%	28%	41%*	73%	0.76	0.77	0.88

*p-values<0.05 compared to reference group (denoted with §)

Observations

Due to the 2013 universal coverage campaign, the 2014 results are vastly improved in all indicators, and the use:access ratio increased from 2011 to 2014. The percent of the population with access to a net is one of the highest observed among PMI countries. The Southwest region continues to be an under-performer for net use, however. Net access and use both increased between surveys in the majority of regions, wealth quintiles, and residence types. Earlier trends of wealthier households having better ownership, access, and use of ITNs was reversed in 2014. Urban residences had

Mozambique use:access ratio DHS 2011



Trends

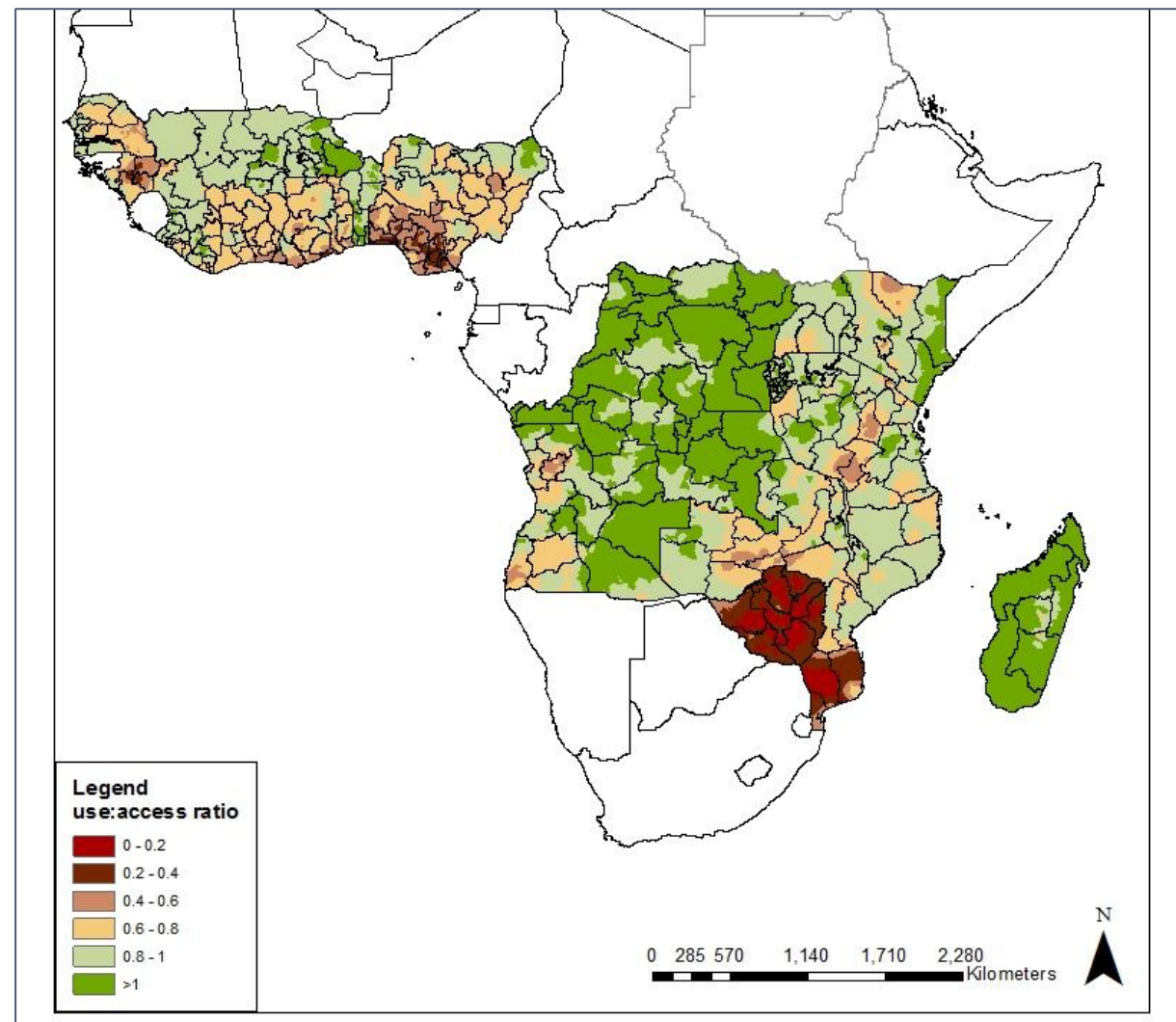


Key Questions

1. Are people using nets?
2. Are families still prioritizing <5 and PW?
3. Are they using nets all year round?
4. Are the most at risk people using ITNs?
5. What are the determinants of ITN use, once we control for access?

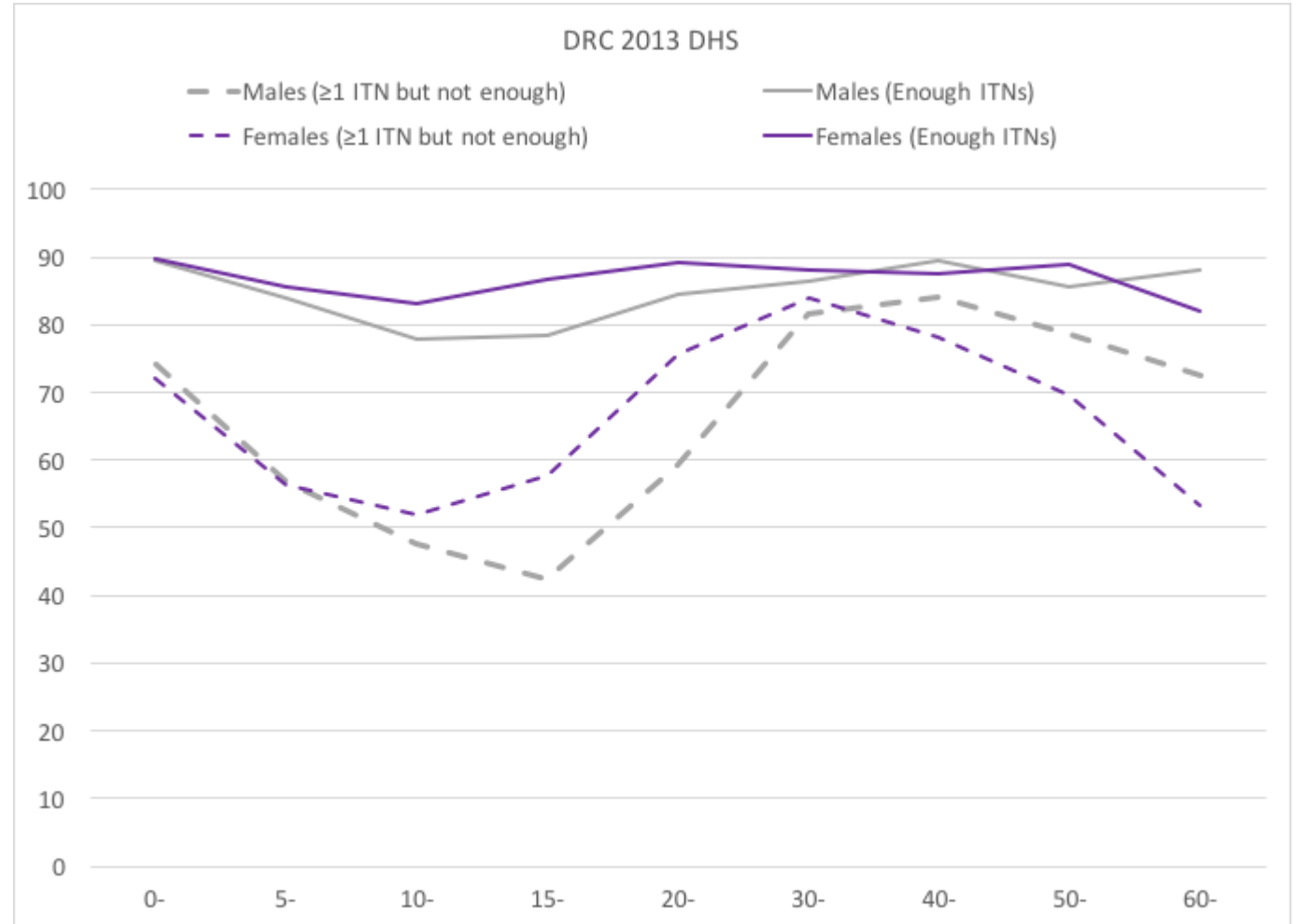
1. Are people using nets?

- By and large, yes, in most countries
- But we must look in more detail!



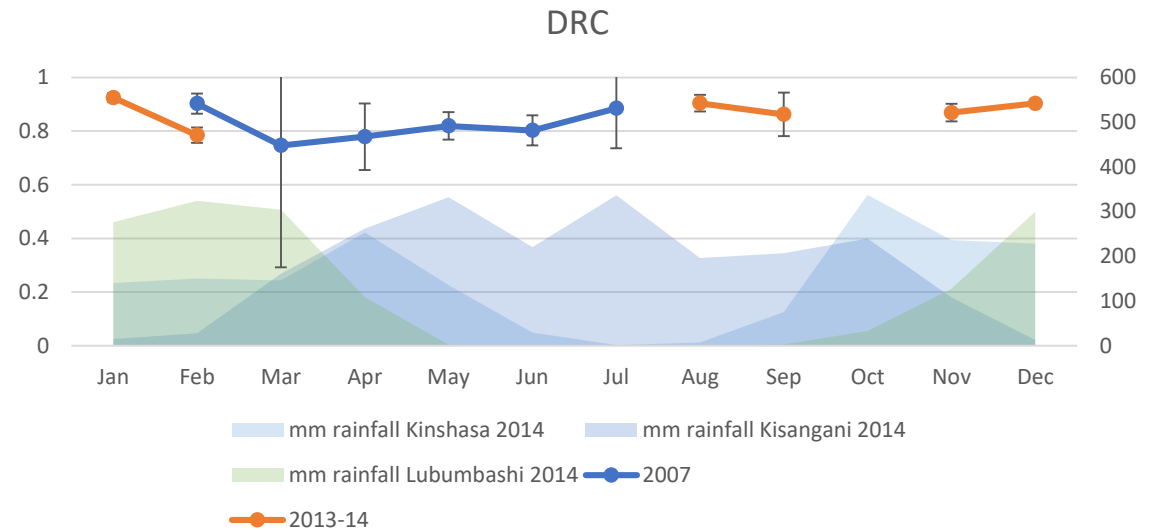
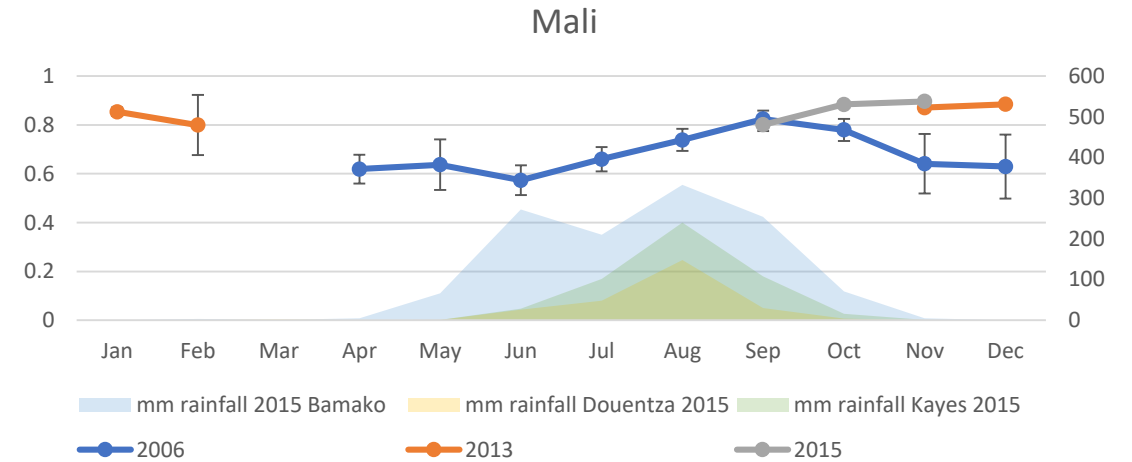
2. Are families still prioritizing under fives and pregnant women?

- Absolutely.
- When families have some, but not enough ITNs, they prioritize <5s and women of reproductive age



3. Are they using nets all year round?

- Yes, in most countries
- But there are declines in usage in dry season in many countries

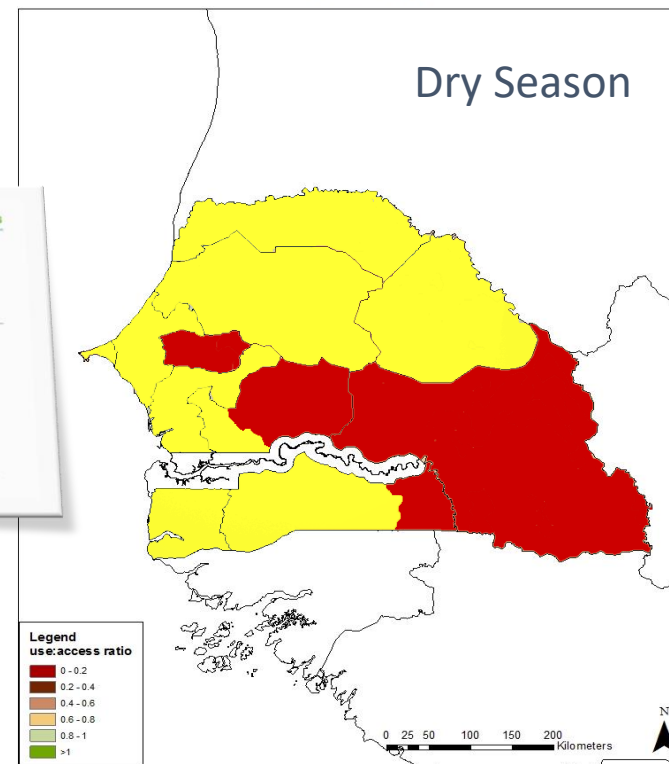


Seasonal Trends

Strong seasonal influence among those with access in many countries



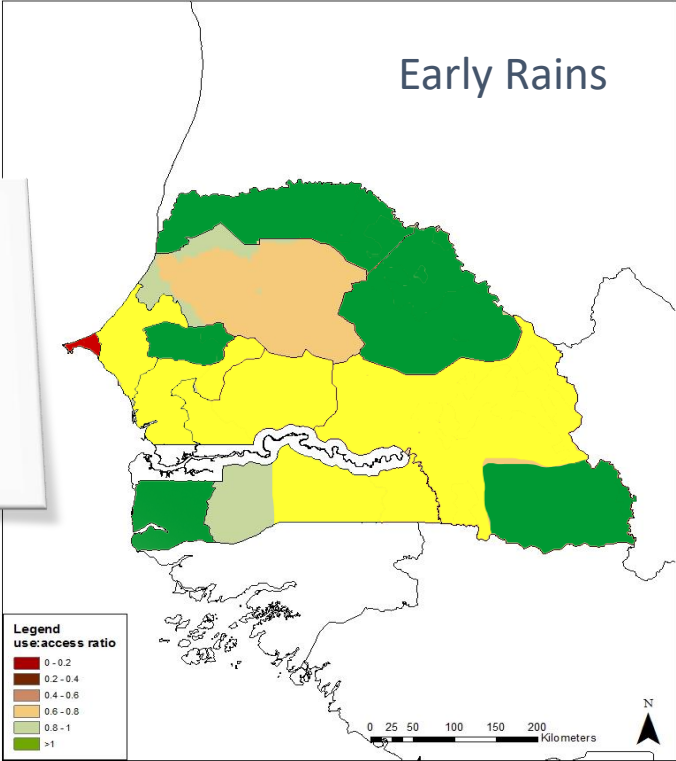
Senegal use:access ratio
cDHS 2016



Seasonal Trends



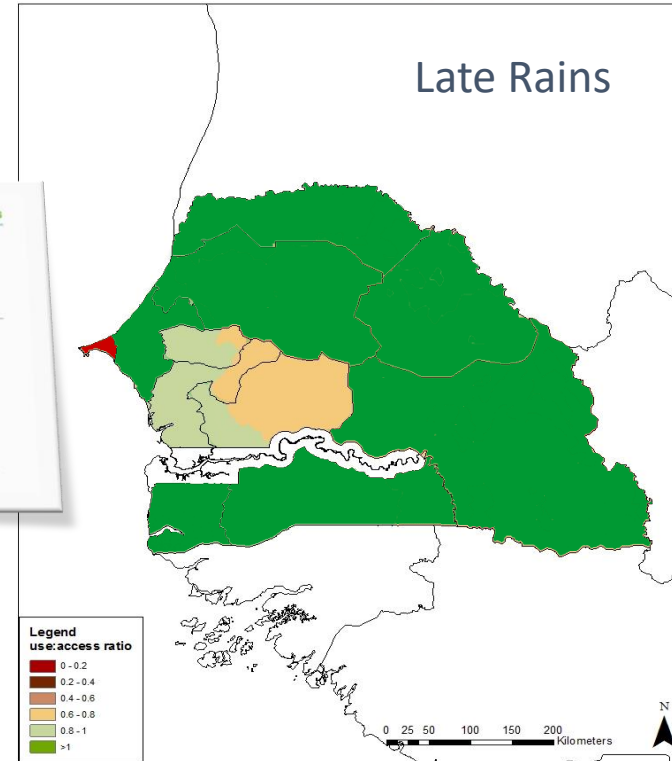
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Seasonal Trends

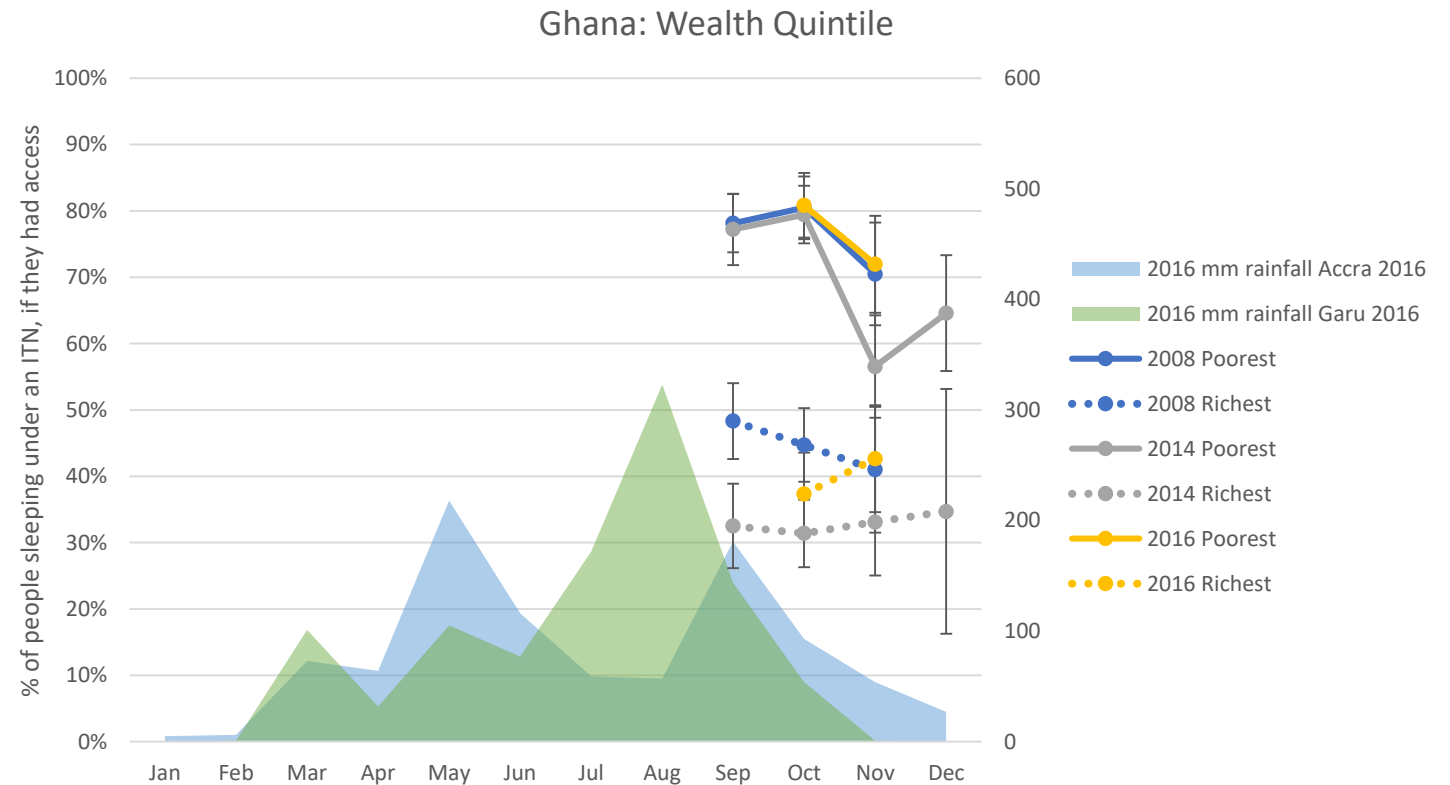


Senegal use:access ratio
cDHS 2016



4. Are the most at risk people using ITNs?

- The most at risk – poorest, rural – tend to use the ITNs they have much more than people at lower risk

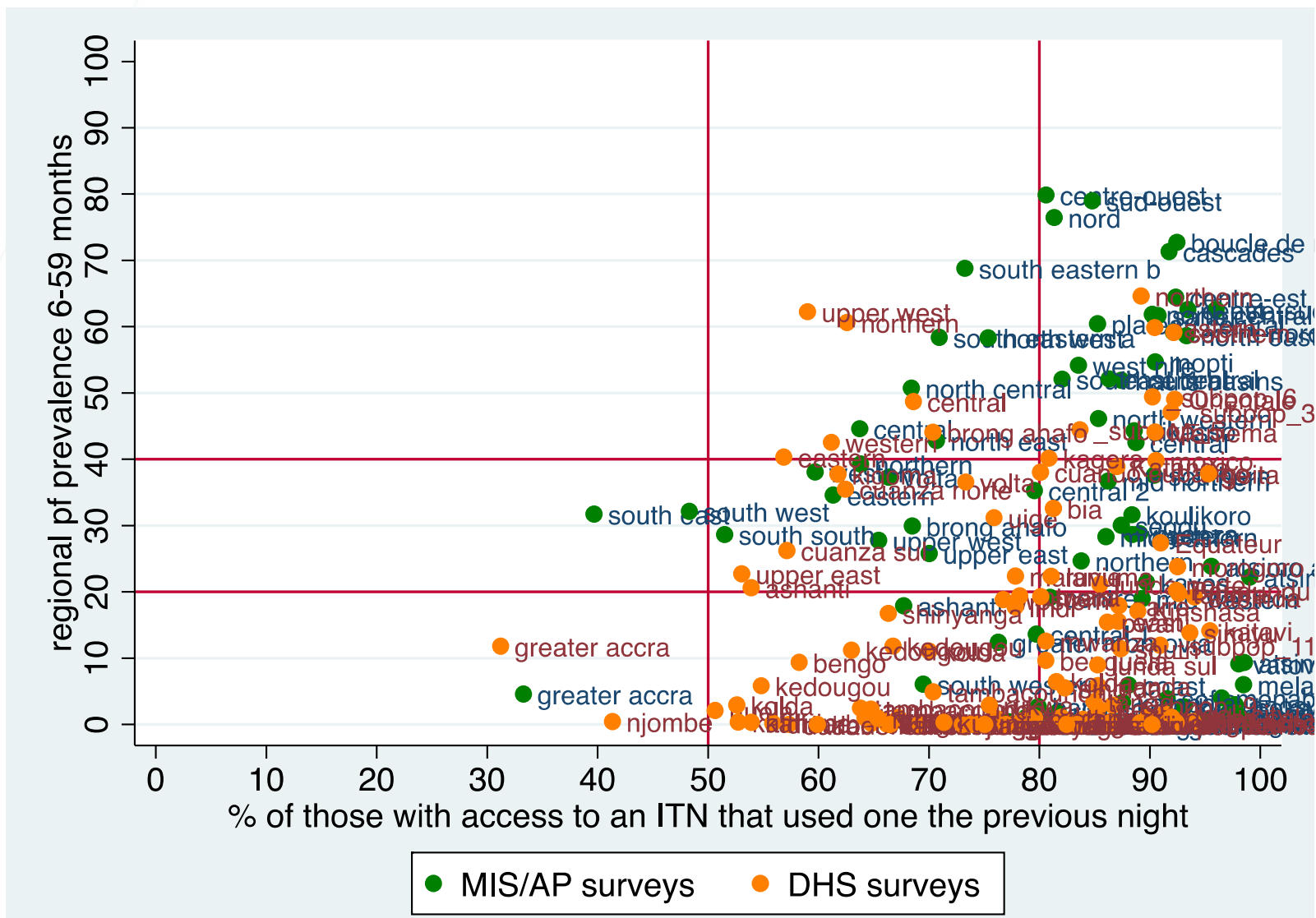


5. What are the determinants of ITN use, once we've controlled for access?

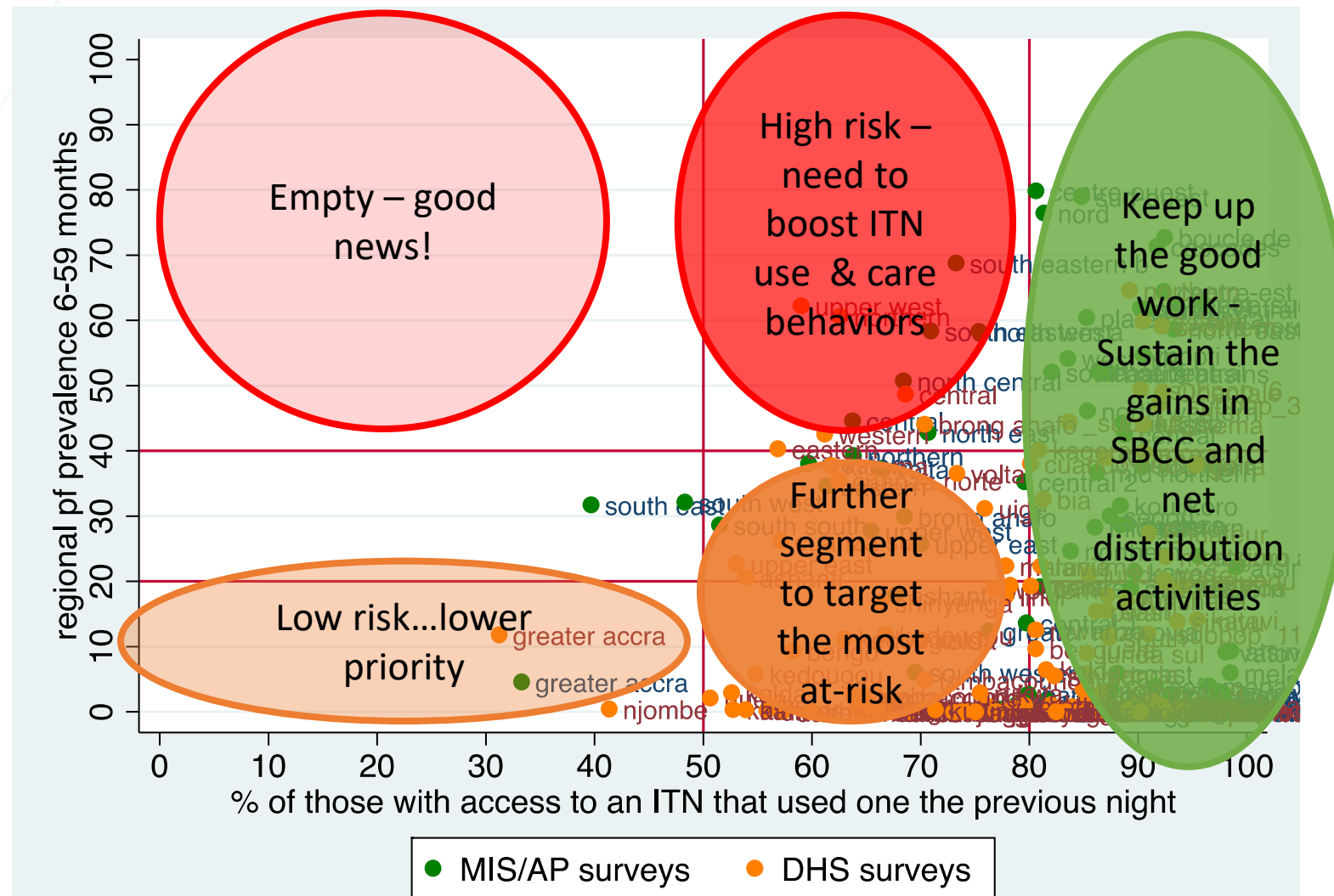
- Season / month of interview
- Region
- Wealth quintile

Gaps

Where are the gaps (2014-2017)?



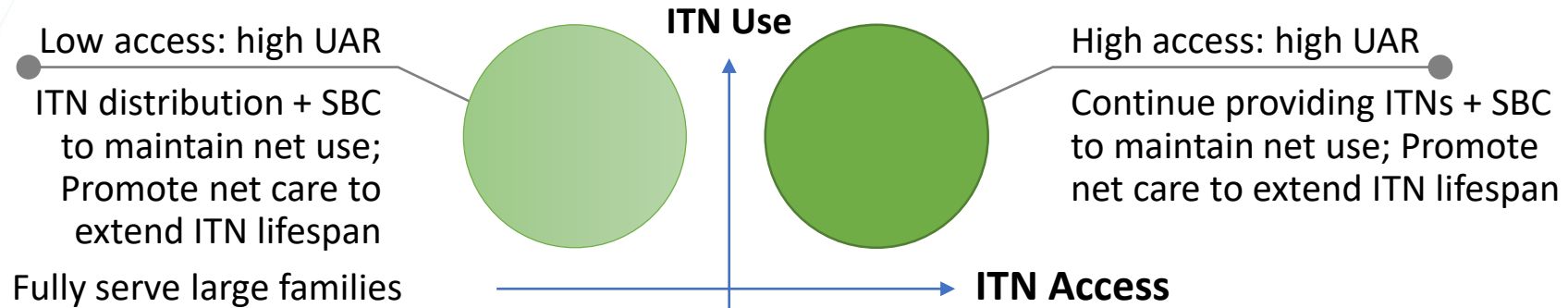
Where are the gaps (2014-2017)? An approach to segmentation...





Using the data for programming

What to do if...



● **Low access: high UAR**
 ITN distribution + SBC to maintain net use; Promote net care to extend ITN lifespan
 Fully serve large families

● **High access: high UAR**
 Continue providing ITNs + SBC to maintain net use; Promote net care to extend ITN lifespan

● **Low access: low UAR**
 ITN distribution + targeted SBC for specific barriers to use

● **High access: low UAR**
 Continue providing ITNs; Use barrier analysis and formative research to inform SBC approach; Segment further

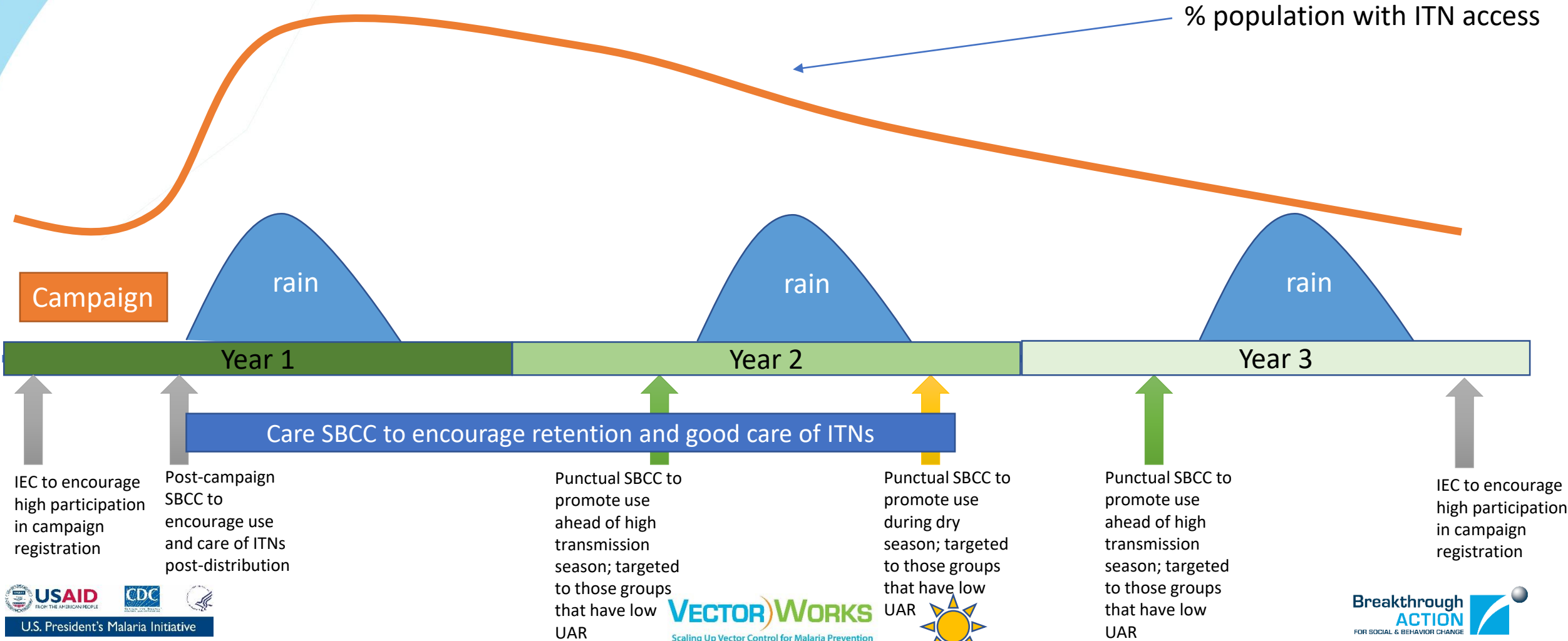
Check seasonal and wealth quintile use patterns
 Emphasize year-round use



Check seasonal and wealth quintile use patterns
 Emphasize year-round use



'Whole Life' SBCC strategy for ITNs



Questions?