Storytelling with Slides

MACEPA Data fellowship program – Secondary Soft Skills
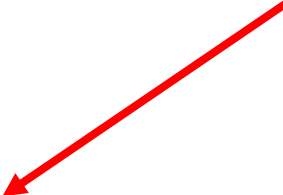
PATH

Storytelling with Slides

- Slides that tell a story are more likely to be understood and remembered by your audience, especially if there are non-technical staff involved.

- A good story has several key elements that we should aim to include in our slides:
  - An introduction that lays out key details to prime the reader so they can understand what is going on
  - a compelling middle with clear points of interest (and pictures!) that is broken up into digestible sections, each of which should have its own takeaway message
  - a conclusion that recaps the key findings, answers key questions, and perhaps sets out the next steps

- Let's look at a previous example of MACEPA work for the Zambia NMEC that tells a story, highlighting key elements as we go.

Introduction

- Here we work through a data-driven approach to stratification and sub-national tailoring of malaria interventions in Zambia

- We focus on 3 key malaria interventions
  - PBO nets
  - IRS
  - CHWs

- Decisions of where to implement different interventions are based on past intervention coverage, malaria burden and between-province equity

Introduction very clearly outlines the purpose of the presentation, what kind of data we are going to look at, and what the decisions coming out of it will be.
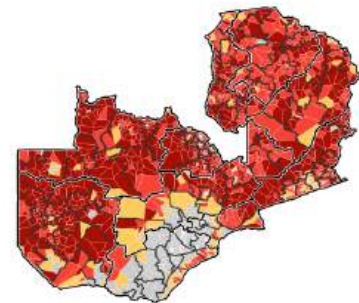
This about who your **audience** is
- How much of the context do they know?
- What acronyms are they familiar with?
- How much detail would resonate best with them?
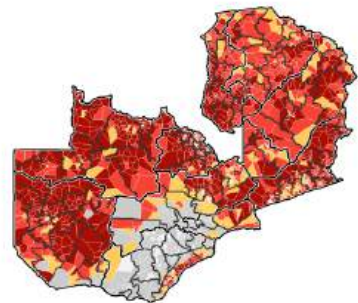- Are they more interested in the methods or the results?

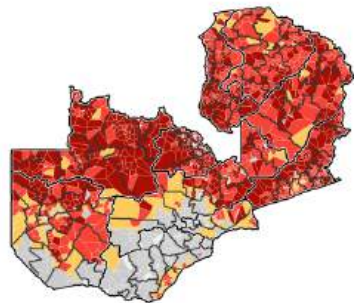# Overview of HFCA-level changes in malaria burden 2017-2021
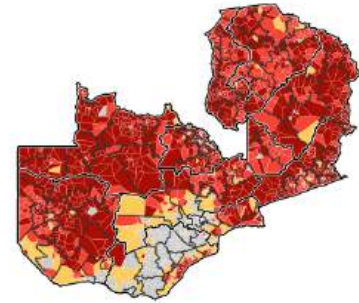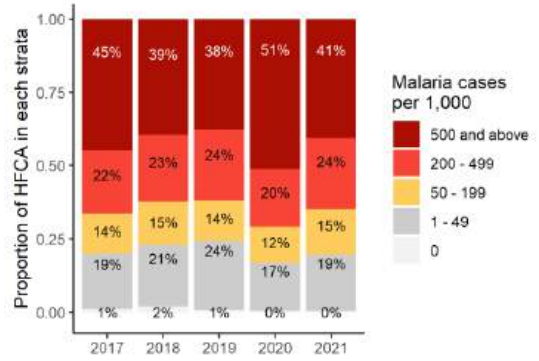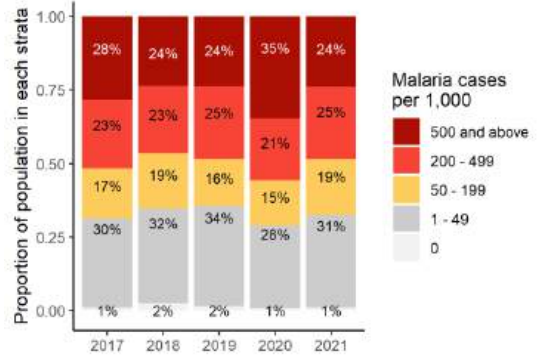
Big, clean figures with well labeled axes and legends combined with a simple title allow for slides that don't need their own text. This slide can be clearly explained by a presenter or shared for external review without additional context. Plan your verbal (out-loud) sentences to draw the reader's eye to key messages.

Clear aim with identifiable numeric goals

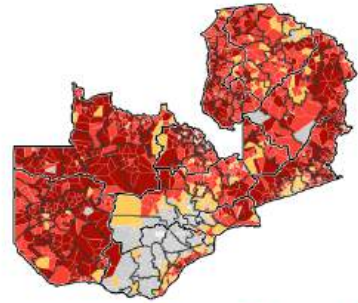Making your approach clear but not spending too much time on it is the ideal balance. Short digestible sentences, should be half a slide max.

Stating your assumptions for an analysis is very important. These are often the hardest elements to communicate because they are considered more important by the modelers than by the people listening to them.

Step 1: Targeting IRS

Aim: Based on the NMEC plan to target 600,000 structures in the 2022/2023 transmission season, we want to identify the HFCA to target with IRS to ensure high impact, high coverage, and equity between provinces

Approach
Starting with a district level analysis
1. Identify all areas in the strategy that could have IRS (levels 3,4)
2. From these select areas that had high IRS coverage in the last 2 years
3. From these, select the districts that had both high IRS coverage and the highest malaria burden

Then moving on to a HFCA level analysis
1. With the districts targeted in point 3 above, map IRS coverage at the HFCA level to further identify areas that had high IRS coverage in either of the last 2 years
2. Rank areas based on coverage and burden, and select the top X HFCA that make up X% of the population
3. Add in additional criteria to ensure there is some level of equity between around how much IRS each province receives

Rationale/assumptions for analysis:
- *IRS is likely to result in the greatest burden reduction in the highest transmission areas*
- *Spray areas that have conducted high coverage IRS in the last 2 years are likely to be able to conduct high coverage IRS again the future*
- *It is operationally unfeasible to conduct IRS in every district based on commodity supplies, or to target just a few HFCA across every district, therefore identifying target district and then within these districts, target HFCA allows for a targeted yet operationally feasible strategy*
- *It is important to ensure some level of equitable IRS coverage between provinces, rather that just target all resources to the highest incidence provinces, therefore we impose that each province receives at a minimum 5% of the national IRS commodities.*

District level analysis: Malaria incidence strata in the 2020/2021 transmission season and all areas that fall into levels 3 and 4

Malaria incidence strata
2020/2021 transmission season

Districts in levels 3 and 4
2020/2021 transmission season

Malaria cases
per 1,000

- 0
- 1 - 49
- 50 - 199
- 200 - 499
- 500 and above

Malaria cases
per 1,000

- Levels 0, 1 and 2
- Levels 3 and 4
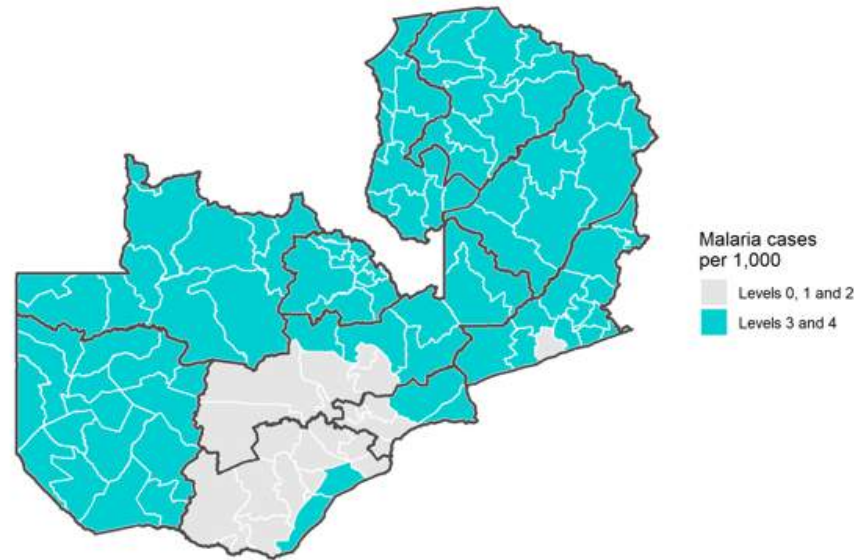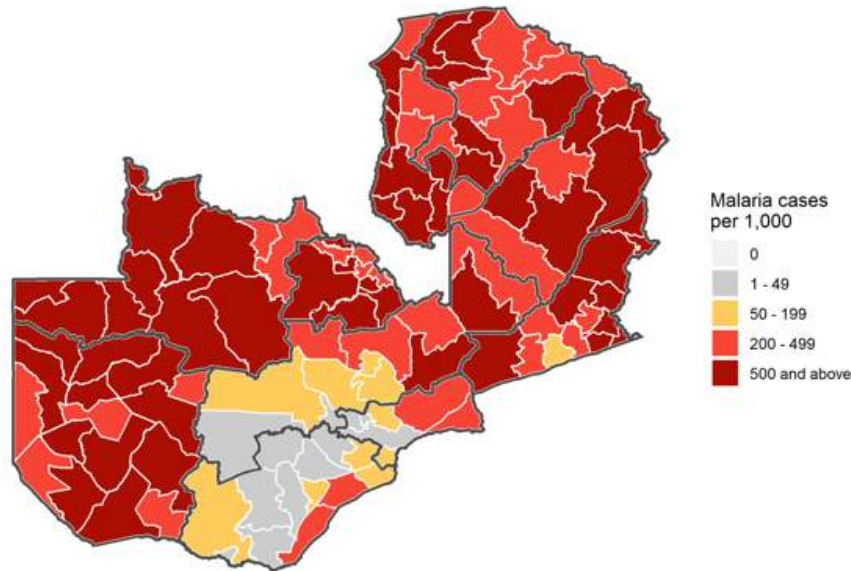
This title both explains the graphs and also identifies where we are in the process identified in the previous slide.

This step identifies districts that have the highest malaria burden and may benefit from IRS the most

A label detailing what the purpose of this step is exactly boils down the slide into one sentence.

This is a complex slide but it sets up an important element of the final takeaways. The caption clearly explains what the plots are showing in one sentence.

Clear and short identification of the purpose of this step/slide
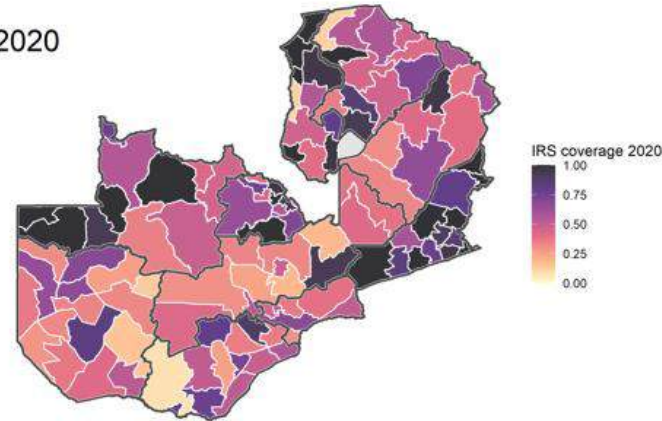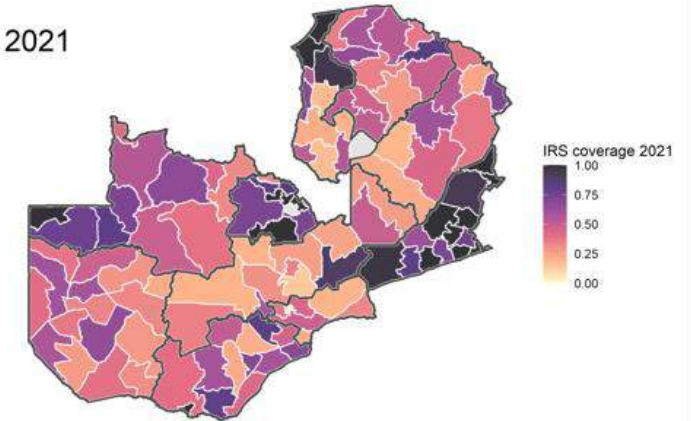
IRS coverage data from 2020 and 2021

Here we show the IRS coverage levels from the last 2 years

In the lower row, we highlight either:
- Districts that had **>60%** coverage in either 2020 or 2021
- Districts that had **>80%** coverage in either 2020 or 2021

This step identifies districts that have the capacity for high coverage IRS programs

2020

2021

IRS coverage 2020
1.00
0.75
0.50
0.25
0.00

IRS coverage 2021
1.00
0.75
0.50
0.25
0.00

District that had >60% IRS coverage in either 2020 or 2021

District that had >80% IRS coverage in either 2020 or 2021

recent_good_irs_60
1.00
0.75
0.50
0.25
0.00

recent_good_irs_80
1.00
0.75
0.50
0.25
0.00

37% of population

27% of population

These annotations outline the stakes or the importance of the maps. If we don't quantify the takeaway from the chart, it won't resonate with decision makers. Think about what a useful value/statistic is to draw out from your graph to help with the explanation of the graph

These smaller plots from previous slides show the throughline of how the targeting criteria have evolved. A consistently identifiable theme that builds throughout the presentation helps to reinforce the message.

District that had >60% IRS coverage in either 2020 or 2021

District that had >80% IRS coverage in either 2020 or 2021

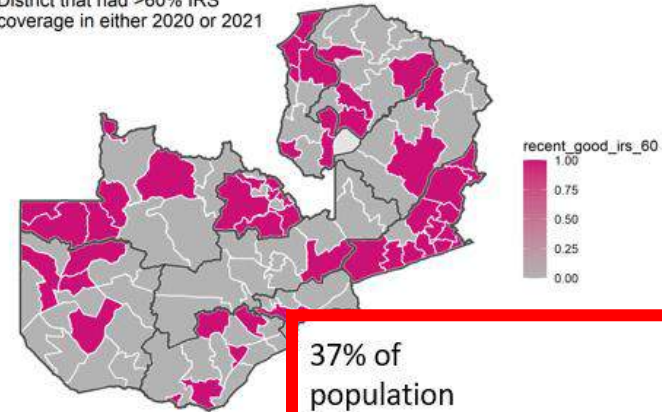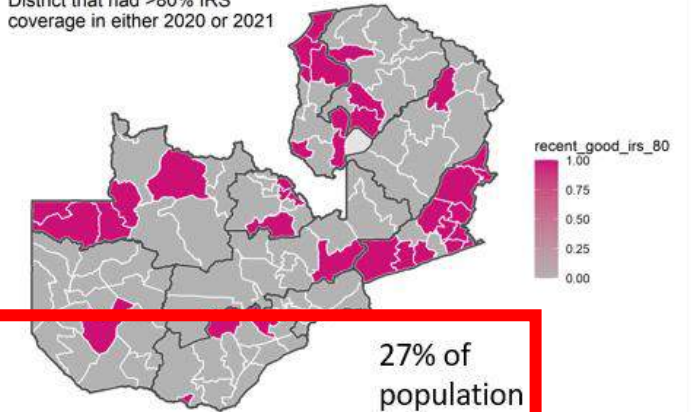Malaria incidence strata 2020/2021 transmission season
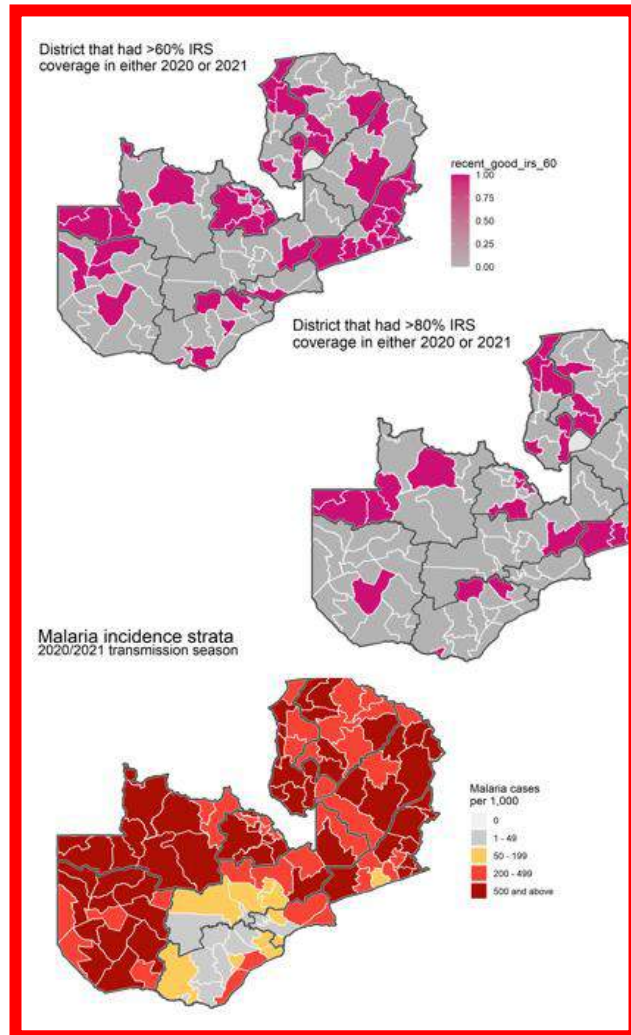
Districts that had both high IRS coverage and the highest malaria burden

By combining information of IRS coverage and malaria burden, we define 4 new strata for IRS suitability based on both high burden and high historical coverage

Malaria incidence strata (2020/2021) and IRS coverage (2019/2020 or 2020/2021)

Burden and IRS coverage
- Level 3, irs coverage 60 – 80%
- Level 4, irs coverage 60 – 80%
- Level 3, irs coverage > 80%
- Level 4, irs coverage > 80%
- NA
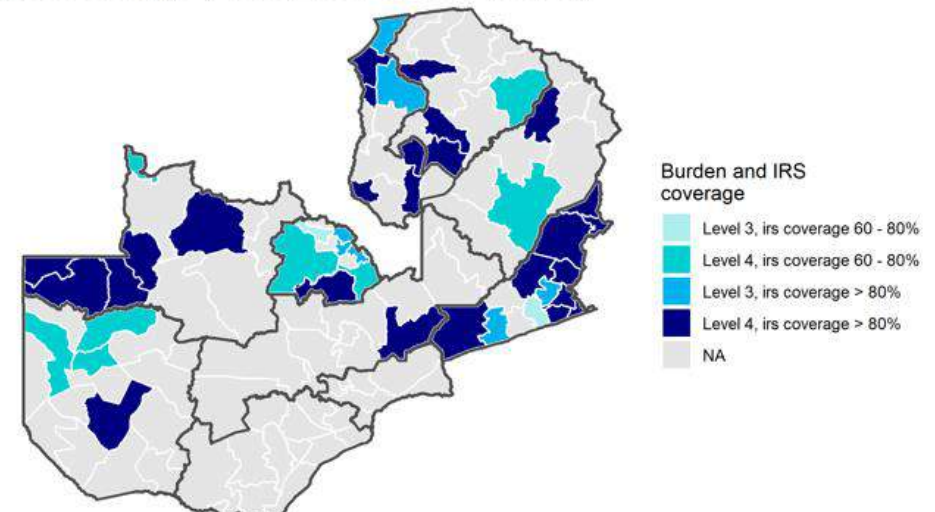
On the next slide we can drill down into population residing in each of these IRS/burden strata

Seeding the next step in the process allows you to keep the presentation flowing while reinforcing the link to the message you've been building.

HFCA-level analysis 1: Malaria incidence strata in the 2020/2021 transmission season and all areas that fall into levels 3 and 4

The plot on the left shows HFCA level IRS coverage (using spray area population estimates from Akros)
Combining this with the target districts identified previously, we now have the following HFCA to select from
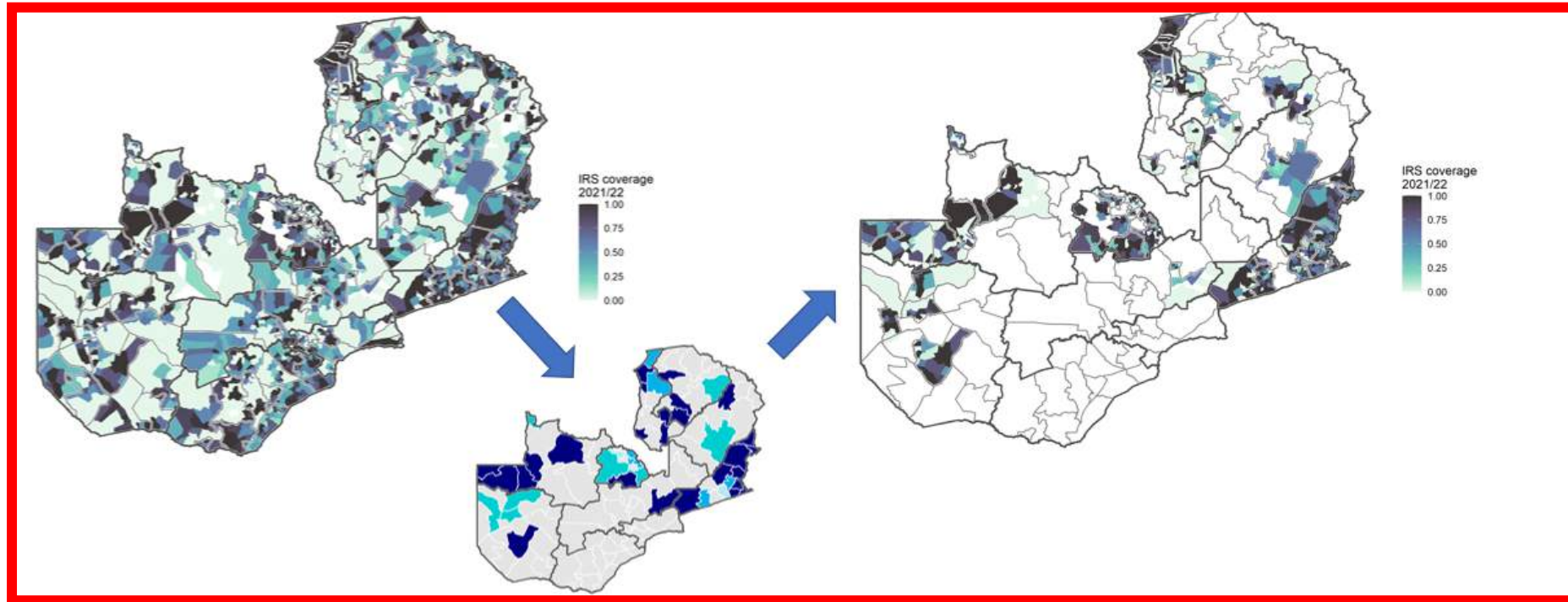
Don't be afraid to use arrows, shapes, and other annotations to show how one step in the process can lead to another! These illustrations greatly enhance readability while minimizing text on the slide.

Step 2: Targeting PBO nets

Aim: To identify the HFCA and populations that should receive PBO nets to ensure all population have access to some form of vector control

Approach
Simply identify and quantify all HFCA that will not receive IRS

Rationale/assumptions for analysis:
- *There is adequate budget to procure all PBO nets (i.e. no standard LLINs)*
- *All individuals should have access to some form of vector control*

Option: scale back mass PBO LLIN distribution in very low transmission urban areas

Approach
Estimate the potential number of LLINs 'saved' by assuming that in low transmission urban areas, LLINs are only distributed to individuals presenting at health facilities with malaria

Rationale
- Scarce resources to procure malaria commodities could be better invested in area with higher malaria burden and/or areas with lower access to treatment

Similar to the last "Step" slide, keeping the consistent headings of the aim, the approach and the rationale/assumptions. This signposting helps to ground the viewer in the process.

Presenting multiple options in a similar format can be useful for comparison.

HFCAs targeted for PBO nets, number of people needing a net, and number of nets needed

We can also break down this estimate of the number of nets needed into rural and urban needs per province

Nationally, this adds up to

5.8m nets needed for rural residents
3.8m nets needed for urban residents

The bolded takeaway messages have been boiled down to very concrete numbers that can be explained in more detail later.

Q: What other key messages could be highlighted from this graph?

Western — 0.1m | 0.6m
Southern — 0.2m | 0.9m
Northwestern — 0.2m | 0.3m
Northern — 0.2m | 0.7m
Muchinga — 0.1m | 0.5m
Lusaka — 1.6m | 0.3m
Luapula — 0.2m | 0.4m
Eastern — 0.1m | 0.7m
Copperbelt — 0.8m | 0.2m
Central — 0.3m | 1.2m

name
Rural
Urban

Number of LLINs needed

0   500000   1000000   1500000   2000000
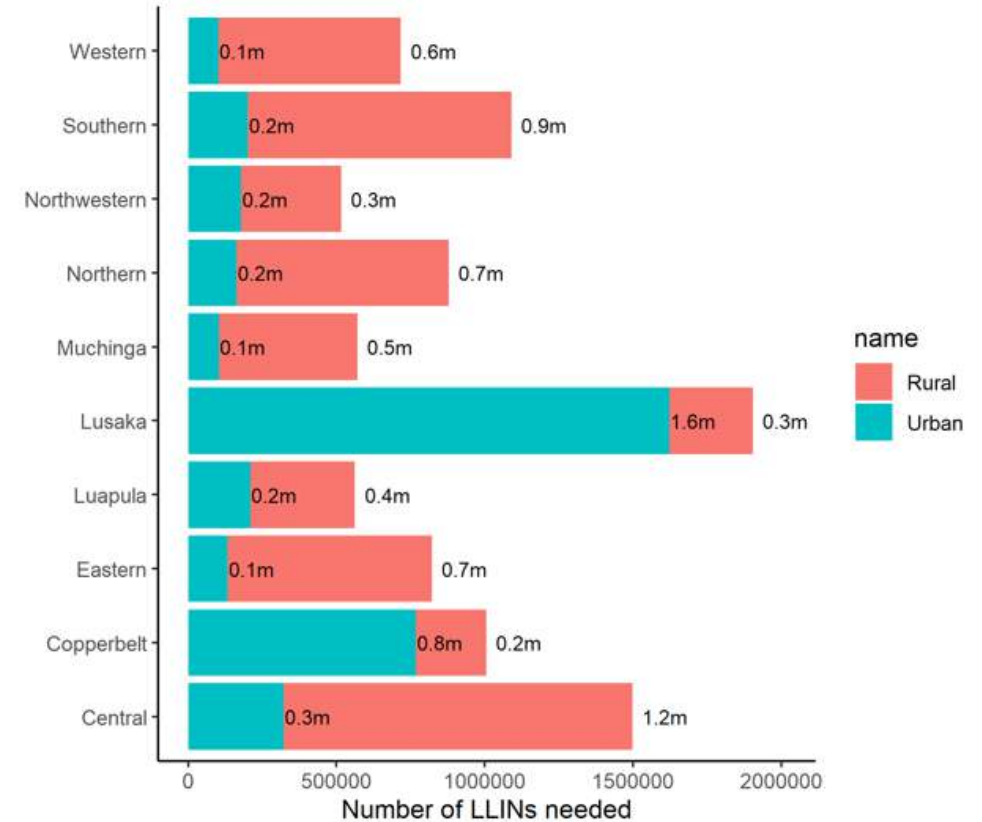
Potential number of nets saved by not doing mass LLIN distribution in low transmission urban areas (and switching to reactive distribution to symptomatic individuals)

Low transmission districts
Oct 2020 to Sep 2021

Malaria cases per 1,000: 0 | 1 - 49 | 50 - 199 | 200 - 499 | 500 and above

Urban/rural and HFCA incidence
- Rural and < 50 cases/1,000
- Rural and > 50 cases/1,000
- Urban and < 50 cases/1,000
- Urban and > 50 cases/1,000

Approximately 3.5 **million individuals** reside in the darker blue areas (urban and low transmission)

Stopping mass LLIN distribution in low transmission urban HFCA

If mass LLIN distribution was stopped in these HFCA, *1.94m fewer LLINs would be required* (assuming 1 net per 1.8 individuals)

Replacing mass LLIN distribution with distribution to symptomatic individuals at health facilities

In the 2020/2021 transmission season, there were approximately *29,000 malaria cases* amongst these 3.5 million individuals in the dark blue HFCA

Therefore, if LLINs were just distributed to individuals with symptomatic malaria, *29,000 nets would be needed* – considerably less than the 1.94 million nets needed in a mass campaign

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Annotations:

Graphical inset follows the same formatting of the previous maps and is shown directly coming from a highlighted area of a previous figure to emphasize the logical throughline of the earlier slides.

The different scenarios are in bold to guide the discussion, while the takeaway message is clearly highlighted.

This is a very actionable and clear insight for a policymaker, that explains the benefits of the proposed approach from the slide title.

Step 3: Identifying the number of new CHWs needed to achieve national targets

Aim: To estimate the number of additional CHWs needed to reach national coverage targets

Approach

We quantify the total number of registered CHWs on DHIS2 and the total number of 'active' CHWs reporting data into DHIS2. We then estimate how many additional CHWs would be needed to achieve national targets

Rationale/assumptions for analysis:

- *The national coverage target is 1 CHW per 500 population in rural areas and 1 CHW per 2,000 population in urban areas*
- *An 'active' CHW is currently defined as anyone who has submitted 3 or more data reports into DHIS2 in any one year since 2018*
- *For each district we use rasterized population data to estimate the proportion of the population in each district that reside in urban, peri-urban and rural areas*

Number of current active CHWs
based on any CHW registered in DHIS2

Current number of active CHWs
- [0,5]
- (5,50]
- (50,100]
- (100,200]
- (200,415]

Same aim/approach/assumptions framework used throughout the presentation

These assumptions make sure to highlight the methods choices that most impact the analysis and interpretation of the results.
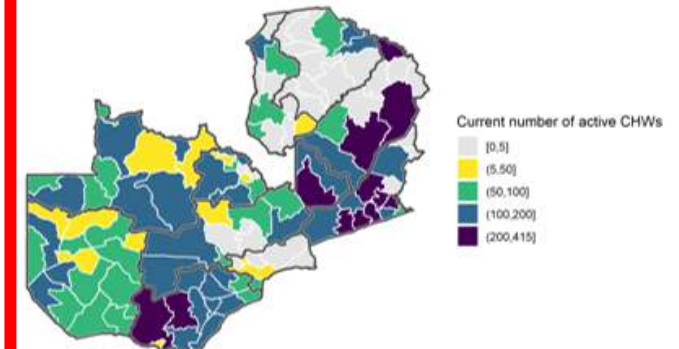
A quick graphic makes sure that everyone has an understanding of the current country trends.

If a slide deck is shown multiple times, it can be helpful to highlight where and why changes are made between versions.
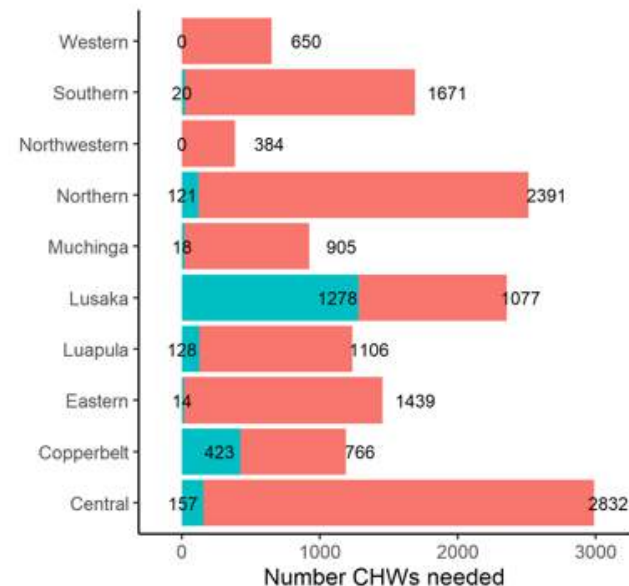
Number of CHWs needed to meet national targets of 1 CHW per 500 rural population and 1 CHW per 2,000 urban population

Number of CHWs needed to meet national targets
CHWs with >=3 monthly reports in DHIS2 in a year any time since 2020
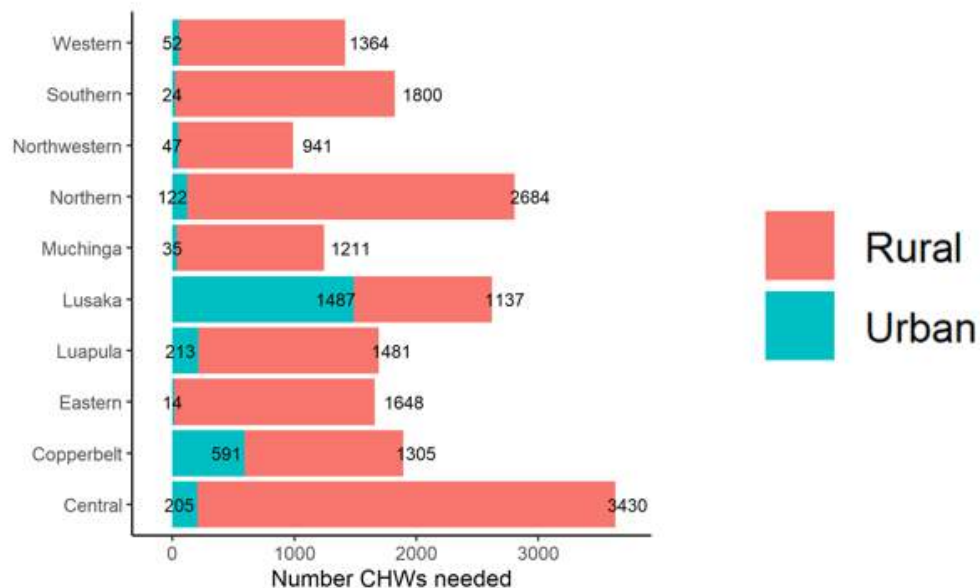
Number of CHWs needed to meet national targets
based on any CHW registered in DHIS2

An additional 19,793 CHWs needed to meet national targets based on current active CHWs

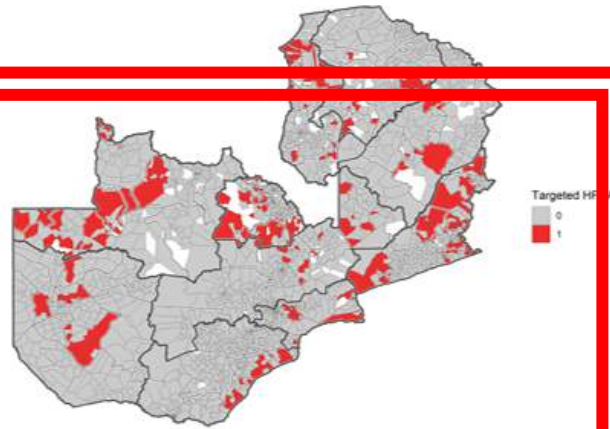An additional 15,380 CHWs needed to meet national targets based on all CHWs in DHIS2

The total numbers for both scenarios are clearly outlined for the country and for each province, making the takeaways actionable.

A good conclusions slide includes high-level story "beats" from each subsection of the presentation, reducing each to a key take-home message that can be easily remembered.
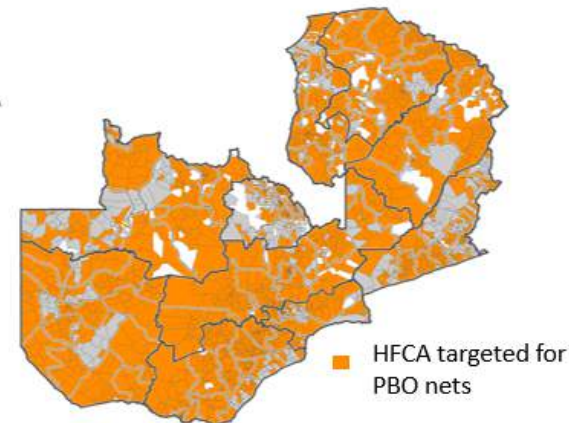
Conclusions

IRS
An IRS strategy that targets areas with high burden, good historical IRS coverage, alongside a focus on equity between provinces
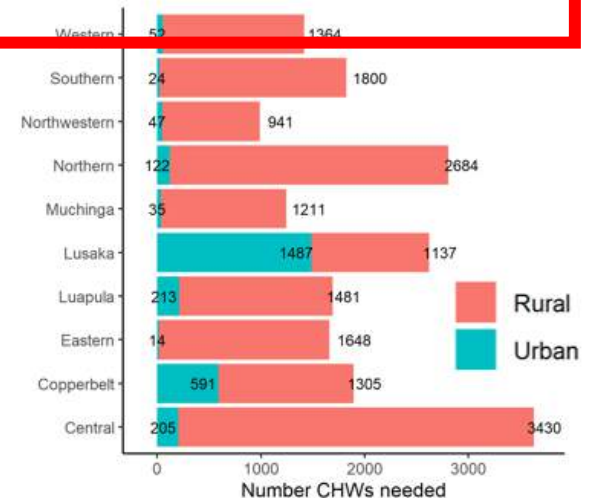
LLINs
Assuming all HFCA that do not get IRS get a LLIN results in an estimated **9.6m** nets needed. If low burden urban areas only receive reactive distributions to symptomatic individual, **7.7m** nets are needed.

CCM
Assuming a national target of 1 CHW per 500 rural population and 1 CHW per 2,000 urban population, an additional *19,793* CHWs are needed

Choosing a champion or standout graphic from each section to highlight will help the audience remember the process that led to the final output.

Targeted HFCA
0
1

~ 600,000 structures targeted

HFCA targeted for PBO nets

Western 52 1364
Southern 24 1800
Northwestern 47 941
Northern 122 2684
Muchinga 35 1211
Lusaka 1487 1137
Luapula 213 1481
Eastern 14 1648
Copperbelt 591 1305
Central 205 3430

Rural
Urban

0 1000 2000 3000
Number CHWs needed

Overall Takeaways (1)

- Always think about your audience
  - How much context do they have of what you're presenting to them
  - What acronyms/jargon do they know
  - How long is the talk and how much detail should you go into

- How will the slides be 'consumed' – if you're planning to present directly, you can keep slides more sparse and plan to speak on more of the key messages and details. However, if it's a deck that will be emailed, you may need to use more text.
  - And where is it being presented? If it's in a large room and/or on a bad projector, make sure all text is readable

- Keep it concise – most audiences aren't interested in the wrong turns you took to get to the interesting results – keep this about what they *need* to know

- Remember not to overwhelm your audience – most people go away from a talk only remembering a couple of key points – make sure your conclusions are concise and cover your key messages

- Think about what the key message of every slide is, and edit the graph to ensure that message is clearly portrayed - use bold, different colors, different graph styles to make your point, consider making the title say the main results of the slide

Overall Takeaways (2)

- Use colored text boxes, bold text, and standout graphics to highlight your key messages on each slide. Each slide can be summarized in a sentence.

- Being consistent with your terminology and your slide set-ups across sections will help readers remember your key messages. If you are inconsistent, people will just latch onto those perceived mistakes and ignore your key points.

- Using labels creatively to reduce text helps readers focus on your figures.

- Prepare 1-2 sentence verbal accompaniments for the key point of each figure that could be distilled just by looking at it.

- Break your presentation into relevant sections that can each be summarized in your conclusion slide. Signpost these sections clearly throughout the presentation.