**Extracting the necessary data for answering a question regarding the ITN model for GBD2019.**

**Data**

National level annual manufacture, delivery and distribution data were used in the ITN model for GBD2019.

Table 1: data sources used in the ITN model for GBD2019

|  |  |
| --- | --- |
| Data | source |
| manufacturer delivery of nets | Alliance for Malaria Prevention’s Net Mapping Project (https://netmappingproject.  allianceformalariaprevention.com/). |
| Distribution | Reports from NMCPs to WHO (personal communication), data collected by the  African Leaders Malaria Alliance (https://alma2030.org/), and prospective malaria  operational plans from countries receiving PMI funding (https://www.pmi.gov/  resource-library/mops/fy-2020). |
| National-level-aggregated survey data | MIS (https://www.malariasurveys.org/) |
| Household-level survey data | DHS (https://dhsprogram.com/) and MICS (https://mics.unicef.org/) |

To answer questions from Shayla Smith from IHME client services:

For specific states below in Nigeria

1. the year of the most recent mass bed net campaign included

The distribution information is available at National label. LLINs and ITN distribution campaign included in the model. The most recent year for LLINs was 2016 and 2007 for ITNs.

Table 2: ITN distribution in Nigeria at national level

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Country | Year | Total | LLIN | ITN |
| Nigeria | 2003 | 917964 | 696482 | 221482 |
| Nigeria | 2004 | 4324230 | 3279000 | 1045230 |
| Nigeria | 2005 | 5086934 | 1807934 | 3279000 |
| Nigeria | 2006 | 8853589 | 3766655 | 5086934 |
| Nigeria | 2007 | 3225594 | 1003573 | 2222021 |
| Nigeria | 2008 | NA | 6700000 | NA |
| Nigeria | 2009 | NA | 19300000 | NA |
| Nigeria | 2010 | NA | 18866196 | NA |
| Nigeria | 2011 | NA | 18141631 | NA |
| Nigeria | 2012 | NA | 14448634 | NA |
| Nigeria | 2013 | NA | 8559372 | NA |
| Nigeria | 2014 | NA | 23328225 | NA |
| Nigeria | 2015 | NA | 27628073 | NA |
| Nigeria | 2016 | NA | 9896250 | NA |
| Nigeria | 2017 | NA | NA | NA |

Note: LLIN: Pre-treated nets with an effective insecticidal lifespan of at least 3 years; ITN: Treated nets obtained or retreated within the past 12 months. LLINs and ITNs simply named nets.

1. the specific bed net coverage rate estimate for the state used in GBD 2019.

Net coverage rate was defined to have access and use rates.

Access: calculated at household level assuming two people per net from household net counts and household sizes in nationally representative surveys

Use: is the proportion of people who sleep under a net, measured in surveys by listing which people in a household slept under each net the night prior to the survey.

Table 3: Nets access and use for all states in Nigeria used in the malaria modelling used in GBD 2019

|  |  |  |
| --- | --- | --- |
| States | Access | Use |
| Abia | 0.398 | 0.291 |
| Adamawa | 0.385 | 0.298 |
| Akwa Ibom | 0.490 | 0.366 |
| Anambra | 0.389 | 0.305 |
| Bauchi | 0.596 | 0.535 |
| Bayelsa | 0.308 | 0.268 |
| Benue | 0.382 | 0.355 |
| Borno | 0.510 | 0.453 |
| Cross River | 0.516 | 0.452 |
| Delta | 0.239 | 0.208 |
| Ebonyi | 0.556 | 0.477 |
| Edo | 0.209 | 0.182 |
| Ekiti | 0.297 | 0.253 |
| Enugu | 0.403 | 0.314 |
| Federal Capital Territory | 0.336 | 0.270 |
| Gombe | 0.481 | 0.378 |
| Imo | 0.295 | 0.213 |
| Jigawa | 0.700 | 0.678 |
| Kaduna | 0.606 | 0.565 |
| Kano | 0.691 | 0.654 |
| Katsina | 0.683 | 0.636 |
| Kebbi | 0.575 | 0.547 |
| Kogi | 0.291 | 0.243 |
| Kwara | 0.358 | 0.353 |
| Lagos | 0.383 | 0.339 |
| Nassarawa | 0.438 | 0.381 |
| Niger | 0.460 | 0.447 |
| Ogun | 0.475 | 0.427 |
| Ondo | 0.231 | 0.198 |
| Osun | 0.343 | 0.302 |
| Oyo | 0.473 | 0.441 |
| Plateau | 0.523 | 0.458 |
| Rivers | 0.413 | 0.318 |
| Sokoto | 0.519 | 0.513 |
| Taraba | 0.358 | 0.324 |
| Yobe | 0.563 | 0.511 |
| Zamfara | 0.618 | 0.588 |

Table 4: ITN distribution for added countries and years of distribution

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Country | Year | Total | LLIN | ITN |
| Chad | 2010 | NA | 353495 | NA |
|  | 2011 | NA | 3495086 | NA |
|  | 2012 | NA | NA | NA |
|  | 2013 | NA | 230043 | NA |
|  | 2014 | NA | 6321676 | NA |
|  | 2015 | NA | 1218640 | NA |
|  | 2016 | NA | 384606 | NA |
|  | 2017 | NA | 6886534 | NA |
| DRC | 2000 | 70000 | 35000 | 35000 |
|  | 2001 | 400000 | 200000 | 200000 |
|  | 2002 | 583650 | 291825 | 291825 |
|  | 2003 | NA | 338856 | NA |
|  | 2004 | NA | 877131 | NA |
|  | 2005 | NA | NA | 791135 |
|  | 2006 | 3153026 | 2981026 | 172000 |
|  | 2007 | 1793337 | 1793337 | 0 |
|  | 2008 | 5653162 | 5653162 | 0 |
|  | 2009 | NA | 7853284 | NA |
|  | 2010 | 2275207 | 2275207 | 0 |
|  | 2011 | 12033092 | 12033092 | 0 |
|  | 2012 | 18644449 | 18644449 | 0 |
|  | 2013 | 7947747 | 7947747 | 0 |
|  | 2014 | NA | 13918109 | NA |
|  | 2015 | NA | 15419488 | NA |
|  | 2016 | NA | 31439920 | NA |
|  | 2017 | NA | 8412959 | NA |
| Guinea | 2002 | 20000 | 10000 | 10000 |
|  | 2003 | 104200 | 52100 | 52100 |
|  | 2004 | 92000 | 33000 | 59000 |
|  | 2005 | 175500 | 175500 | 0 |
|  | 2006 | 177689 | 120500 | 57189 |
|  | 2007 | NA | 312500 | NA |
|  | 2008 | 246000 | 246000 | 0 |
|  | 2009 | NA | NA | NA |
|  | 2010 | NA | 73862 | NA |
|  | 2011 | NA | 48942 | NA |
|  | 2012 | NA | 90188 | NA |
|  | 2013 | NA | 5268245 | NA |
|  | 2014 | NA | 73145 | NA |
|  | 2015 | NA | 741450 | NA |
|  | 2016 | NA | 8236154 | NA |
|  | 2017 | NA | 523328 | NA |
| Togo | 2002 | 34000 | 34000 | 0 |
|  | 2003 | 88000 | 88000 | 0 |
|  | 2004 | 986000 | 986000 | 0 |
|  | 2005 | 24578 | 24578 | 0 |
|  | 2006 | 65235 | 65235 | 0 |
|  | 2007 | 43946 | 43946 | 0 |
|  | 2008 | 1683279 | 1683279 | 0 |
|  | 2009 | NA | NA | NA |
|  | 2010 | NA | 247263 | NA |
|  | 2011 | 2547606 | 2547606 | 0 |
|  | 2012 | 329999 | 329999 | 0 |
|  | 2013 | 468575 | 468575 | 0 |
|  | 2014 | 4042425 | 4042425 | 0 |
|  | 2015 | NA | 8600 | NA |
|  | 2016 | NA | 155660 | NA |
|  | 2017 | NA | 4706417 | NA |
| Uganda | 2005 | NA | 319000 | NA |
|  | 2006 | NA | 1999449 | NA |
|  | 2007 | 1622001 | 1622001 | 0 |
|  | 2008 | 2273413 | 2273413 | 0 |
|  | 2009 | 876054 | 876054 | 0 |
|  | 2010 | 7400000 | 7400000 | 0 |
|  | 2011 | 709000 | 709000 | 0 |
|  | 2012 | 1000747 | 1000747 | 0 |
|  | 2013 | 13219306 | 13219306 | 0 |
|  | 2014 | 10615631 | 10615631 | 0 |
|  | 2015 | NA | 1442500 | NA |
|  | 2016 | NA | 899823 | NA |
|  | 2017 | NA | 23797483 | NA |

Table 5: Nets access and use at country level used in the malaria modelling used in GBD 2019

|  |  |  |
| --- | --- | --- |
| Country | Access | Use |
| Democratic Republic Of The Congo | 0.594 | 0.591 |
| Chad | 0.648 | 0.313 |
| Guinea | 0.648 | 0.586 |
| Togo | 0.939 | 0.795 |
| Uganda | 0.730 | 0.704 |