# VISUALIZATIONS

This project will construct a data dashboard for all 194 Member states on their hepatitis B surface antigen prevalence. The goal is to create country profiles similar to those done by WPRO. See <http://hiip.wpro.who.int/portal/Healththemes/Immunization/Immunizationsubthemes/TabId/169/ArtMID/905/ArticleID/189/Default>

The dashboard should use data that goes from 1990 to 2015. (or as far back as possible.

Yellow shading notes data that is still pending as of 7/3/2017

## VIZ A – Country Demographics

### Data source

* From <http://www.un.org/en/development/desa/population/publications/database/index.shtml>

### Variables

* Total Population in 2015 (in 000s) – data from 1950 to 2015 (65 data points)
* Population under 5 years (in 000s) – data from 1950 to 2015 (in five year intervals, 13 data points)
* Births (in 000s) – data from 1950-1955 (in five year aggregations, 14 data points)
* Surviving infants in 2015 (in 000s) – could not find this data series, using infant mortality rate instead (in 000s) data from 1950 to 2015 (in five year intervals, 13 data points)
* Urban population %

### Temporal range

* From 1990 to 2015

### Visualization

* The current one is text which would probably be OK.
* But if time is available, a line graph showing change over time series with a user option to select (1) total population OR (2) pop under 5 years AND Surviving infants

## VIZ B - Hepatitis B Vaccine History and Schedule

### Data Source

* From file sent by Ximena, Note: schedule data is very spotty
* HepB3 Type from http://apps.who.int/immunization\_monitoring/globalsummary/schedules

### Variable

* Year Hep B vaccine was introduced in the entire country
* Year Hep B birth dose was introduced
* Schedule new file sent by Ximena
* HepB3 Type - I can get access to data at the link above, requested data from Ximena

### Temporal Range

* No temporal change, this data stays the same.

### Visualization

* A text table as in the sample link

## VIZ C – Hepatitis B Vaccination Coverage

### Data source

* From <http://apps.who.int/immunization_monitoring/globalsummary/timeseries/tswucoveragebcg.html>

### Variable

* Percentage of infants vaccinated with 3 doses of Hep B, 1980 - 2015
  + Using variable HepB\_BD, Hepatitis B birth dose estimates are for doses given within 24 hours after birth
* Percentage of infants vaccinated with Hep B birth dose, 1980 - 2015
  + Using Variable HepB3, Third dose of hepatitis B vaccine

### Temporal Range

* From 1990 to 2015

### Visualization

* Line graph show the two variables over time

## VIZ D - Hepatitis B Surface antigen estimates

### Data Source

* From file sent by Ximena,

### Variable for each country

* HBsAg prevalence measured in terms of estimated prevalence % for < 5 population, pre vaccination
* HBsAg prevalence measured in terms of estimated prevalence % for < 5 population, post vaccination
* HBsAg prevalence measured in terms of estimated prevalence % for general population, pre vaccination
* HBsAg prevalence measured in terms of estimated prevalence % for general population, post vaccination
* HBsAg prevalence measured in terms of number of carriers (‘000s) for < 5 population, pre vaccination
* HBsAg prevalence measured in terms of number of carriers (‘000s) for < 5 population, post vaccination
* HBsAg prevalence measured in terms of number of carriers (‘000s) for general population, pre vaccination
* HBsAg prevalence measured in terms of number of carriers (‘000s) for general population, post vaccination
* Number of carriers prevented ('000s) for < 5 population
* Number of carriers prevented ('000s) for general population
* Upper and lower confidence intervals for each variable (2\* 10 variables = 20 extra variables)

### Variable

* The same variables and confidence intervals are also provide for
  + Six WHO regions: AFRO, EMRO, EURO, PAHO, SEARO, WPRO
  + Four Income categories: High income, Low income, Lower middle income, Upper middle income

### Temporal Range

* No temporal change, this data stays the same.

### Visualization

* Graph 1: HBsAg prevalence measured in terms of estimated prevalence %, pre and post, < 5 and general population
  + 4 estimates each with 2 confidence intervals
  + Each estimate is represented by a column (not sure but that seems to make sense), on hover the estimated number and confidence intervals are shown
  + For each population group (<5 and general population) include a line between the pre and post measure to emphasize the change (reduction).
* Graph 2: HBsAg prevalence measured in terms of number of carriers (‘000s), pre and post, < 5 and general population
  + 4 estimates each with 2 confidence intervals
  + Each estimate is represented by a column (not sure but that seems to make sense), on hover the estimated number and confidence intervals are shown
  + For each population group (<5 and general population) include a line between the pre and post measure to emphasize the change (reduction).
* Graph 3: Number of carriers prevented ('000s), < 5 and general population
  + 2 estimates each with 2 confidence intervals
  + Each estimate is represented by a column (not sure but that seems to make sense), on hover the estimated number and confidence intervals are shown
* For all graph the data for the relevant region and income class should also be shown
* Please label the PRE and POST data as “Pre vaccination” and “2015 estimates”.

## VIZ E – Hepatitis B serological surveys

### Data Source

### seroprevalence studies for visualization.xlsx file

### Variable

* Information of surveys (about six different text fields)
* Some countries may have no surveys while others will have many, probably no more than ten

### Temporal Range

* No temporal change, this data stays the same.

### Visualization

* A text table as in the sample link with the following variables shown for each record
  + year: name of the variables are year start and year end
  + Location: name of the variable is level
  + Ages enrolled: name of variables are agestart and ageend
  + Sample size: name of variable is the same
  + HBsAg Prevalence (95% CI): variables are pHBsAg and low CI and high CI
* Ultimately they would like to make this searchable by the user . I told them that this would NOT be possible by the end of July.
  + Use case, show all studies in REGION X
  + Use case, show all studies involving AGE RANGE in COUNTRY Y
* Because some countries will have a very long list of surveys – show the first five surveys (most recent ones) and then have an option for the user to show more.
* A link by which some one could download all the survey data for a particular country (or search result, once that is set up in the next phase).
* Place this visualization at the bottom of the dashboard
* Ximena will send for each publication as supplied by WHO

## VIZ F – World Map

My thought is to allow the user to select from six variables. The first four are below and would use four categories > 8% highly endemic areas; 5-7% high intermediate; 2-4% low intermediate; <2% low endemic)

* HBsAg prevalence pre vaccination < 5 years-(Estimated prevalence %)
* HBsAg prevalence pre vaccination General population-(Estimated prevalence %)
* HBsAg prevalence post vaccination < 5 years-(Estimated prevalence %)
* HBsAg prevalence post vaccination General population-(Estimated prevalence %)

If you want, we could also include the following two variables (we'll define the categories based on the data)

* HBsAg prevalence number of carriers prevented ('000s) < 5 years
* HBsAg prevalence number of carriers prevented ('000s) General population

## Design input needed from the WHO

WHO will provide the following by July 11th:

* The name for this Dashboard, otherwise we will continue to use the working title “Visualization Dashboard for Hepatitis B”
* Any WHO logo or branding (as in the example dashboard), if you give us a link to a webpage with these we can get them.
* WHO will provide text to introduce this.
* Any color preferences, otherwise we will select them.

# Hosting

We will host an operational version of this dashboard accessible via an internet URL. Upon request we will provide the necessary files (including fonts, libraries, etc) so that WHO can host the dashboard on their website. It is the responsibility of WHO to make this operational.

# Timeline

A final working version by July 27, 2017 for the world hepatitis day: 28 July.