Overview of Data Visualization

Turning Data into Art

The purpose of visualization is insight, not pictures.

- Henry D Hubbard

Visualizations act as a campfire around which we gather to tell stories.

- Al Shalloway

Above all else, show the data.

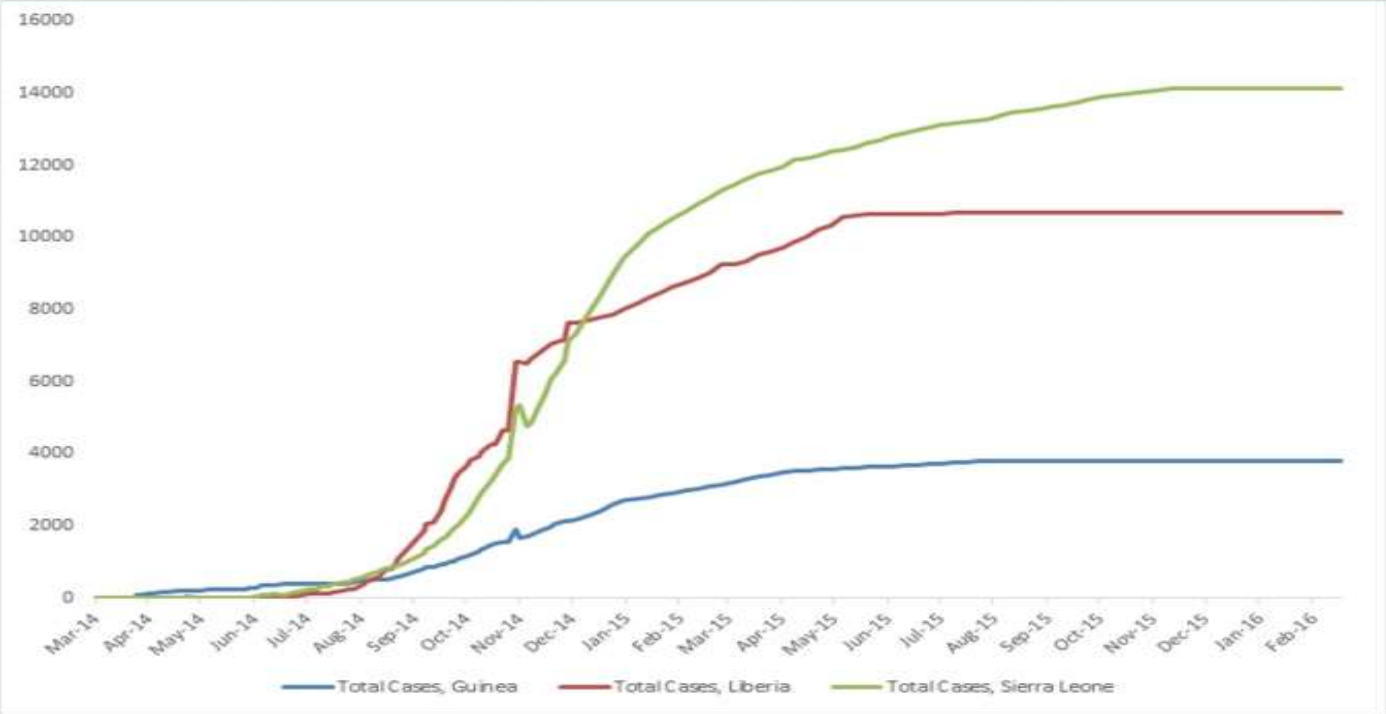
- Edward Tufte

Data from 2014 Ebola Outbreak

WHO report date	Total Cases, Guinea	Total Deaths, Guinea	Total Cases, Liberia	Total Deaths, Liberia	Total Cases, Sierra Leone	Total Deaths, Sierra Leone
7/24/14	415	314	224	127	454	219
7/28/14	427	319	249	129	525	224
7/31/14	460	339	329	156	533	233
8/3/14	472	346	391	227	574	252
8/4/14	485	358	486	255	646	273
8/8/14	495	367	554	294	717	298
8/12/14	506	373	599	323	730	315
8/13/14	510	377	670	355	783	334
8/15/14	519	380	786	348	810	348
8/19/14	543	394	834	466	848	365
8/21/14	579	396	972	576	907	374
8/22/14	607	406	1082	624	910	392
8/28/14	648	430	1378	694	1026	422
9/6/14	812	517	1871	1089	1261	491
9/8/14	862	555	2046	1224	1361	509
9/12/14	861	557	2081	1137	1424	524
9/16/14	936	595	2407	1296	1620	562
9/18/14	942	601	2710	1459	1673	562
9/22/14	1008	632	3022	1578	1813	593
9/24/14	1022	635	3280	1677	1940	597
9/26/14	1074	648	3458	1830	2021	605
10/1/14	1157	710	3696	1998	2304	622
10/3/14	1199	739	3834	2069	2437	623
10/8/14	1298	768	3924	2210	2789	879
10/10/14	1350	778	4076	2316	2950	930
10/15/14	1472	843	4249	2458	3252	1183

Line Graph

Graph 1: Total suspected, probable, and confirmed cases of Ebola virus disease in Guinea, Liberia, and Sierra Leone, March 25, 2014 – February 14, 2016, by date of WHO Situation Report, n=28603



Graph 1 shows the total reported suspected, probable, and confirmed cases in Guinea, Liberia, and Sierra Leone provided in WHO situation reports beginning on March 25, 2014 through the most recent situation report on February 17, 2016.

Reported suspected, probable, and confirmed cases in Guinea, Liberia, and Sierra Leone [CSV - 1 page]

Image: www.CDC.gov

Map

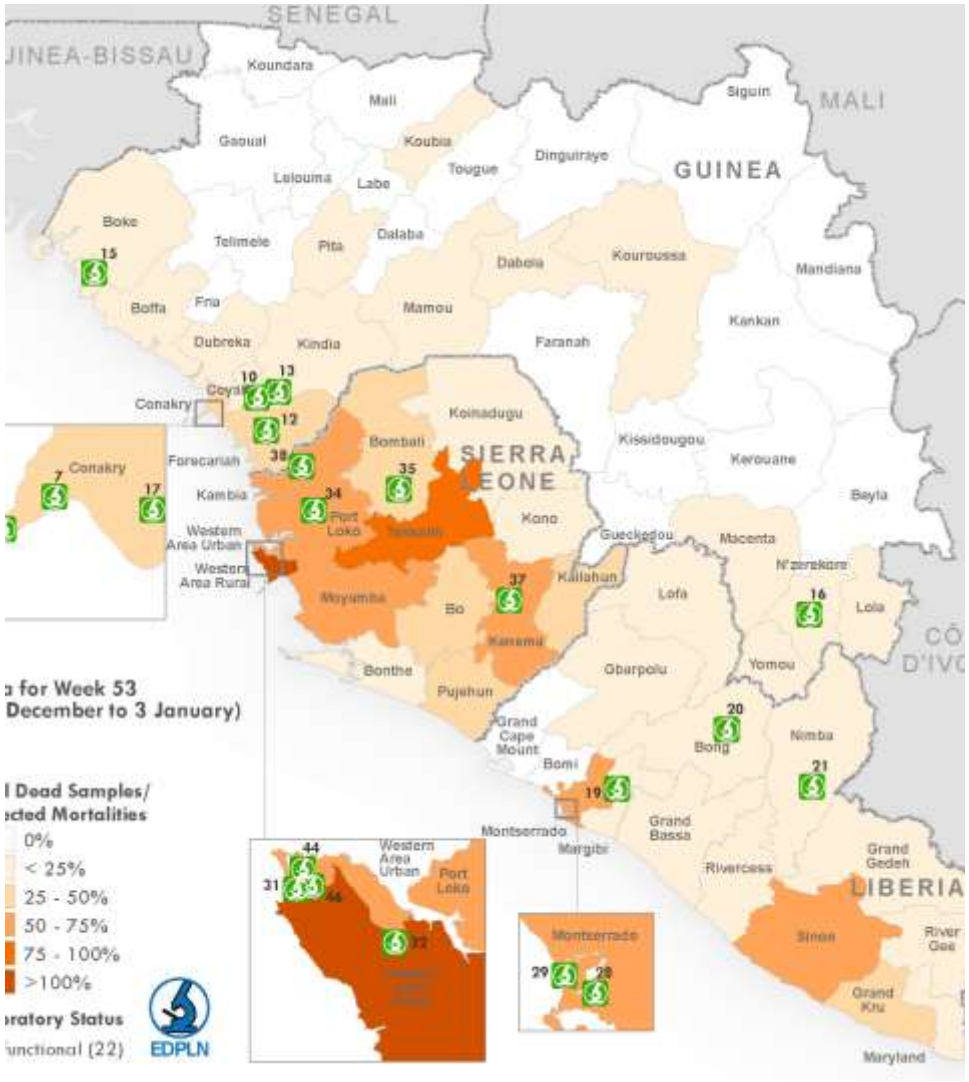
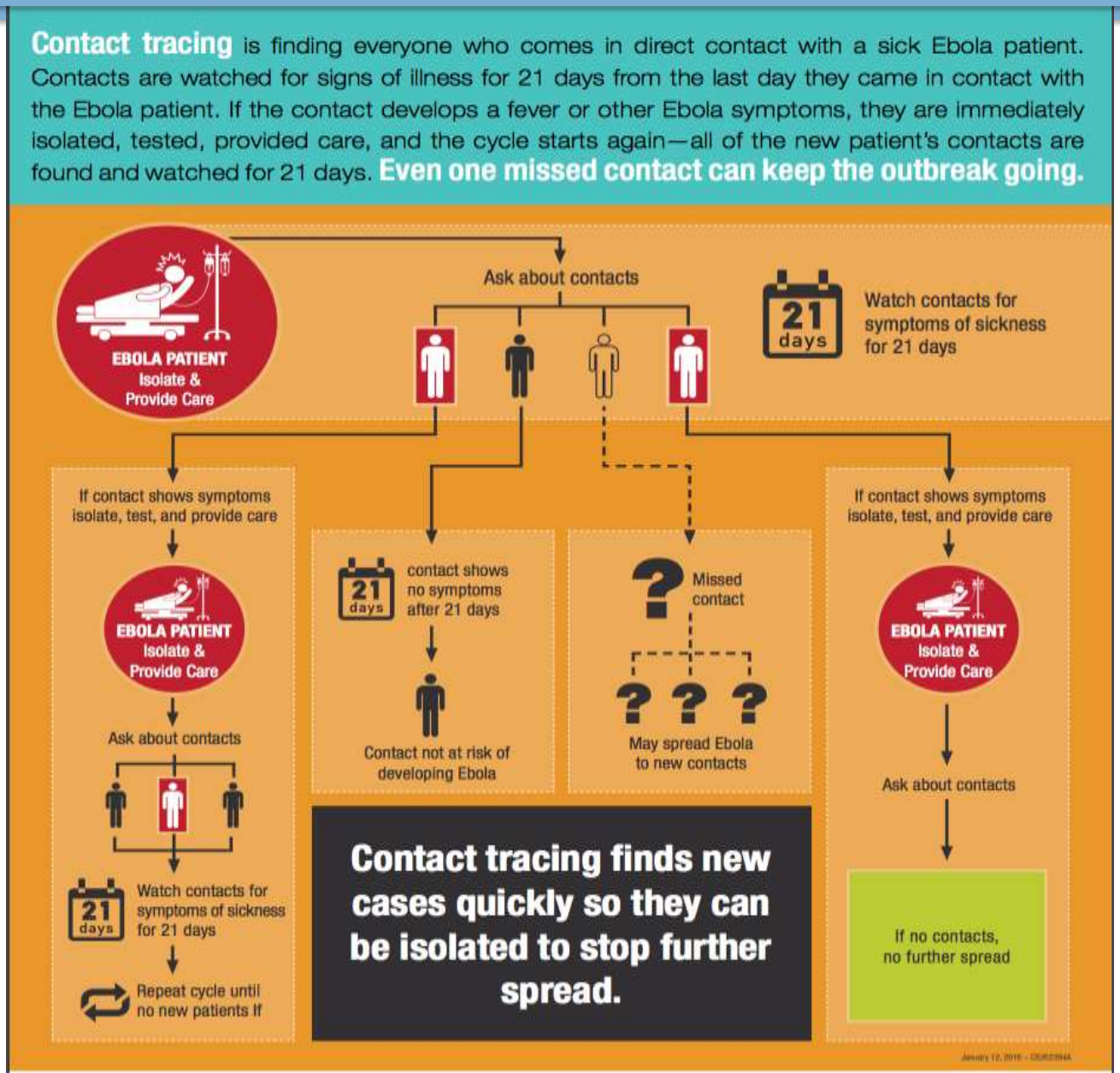


Image: www.CDC.gov

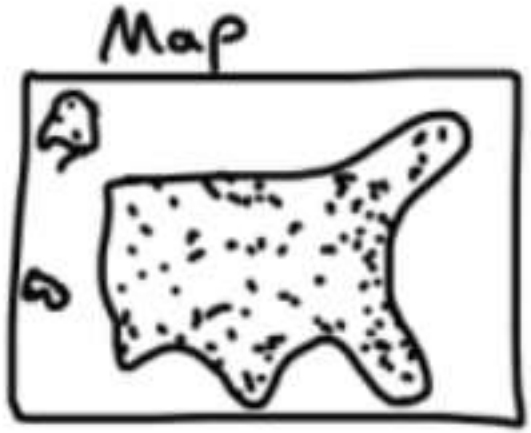
Infographic



Data Visualization

- Data Visualization helps to **visually represent** data
- Helps **tell the story**
- Great **tool** for advocacy and decision making
- Aids **visual perception** and **cognitive thinking**

Traditional Designs



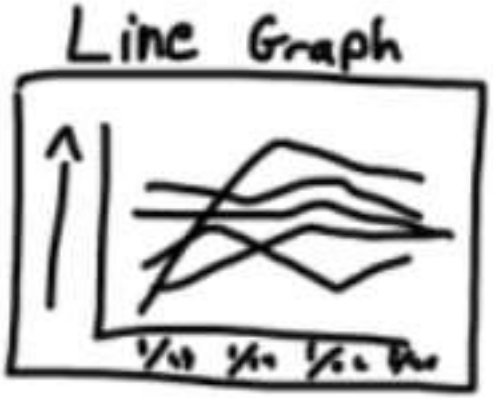
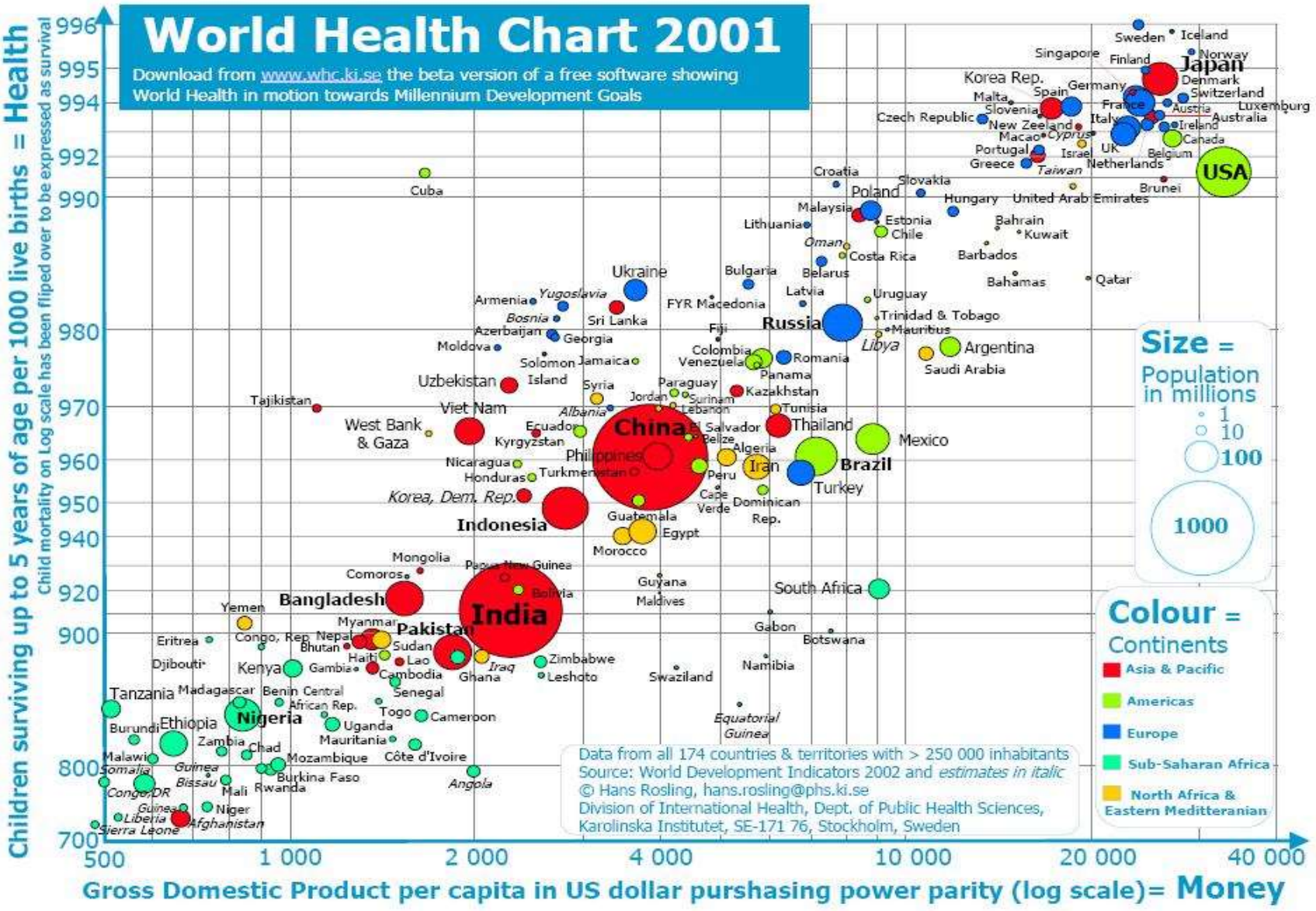


Image: GHeL

More Examples



Infographics and Dashboards

NUMBER OF UNDER-FIVE DEATHS 2011 ▼

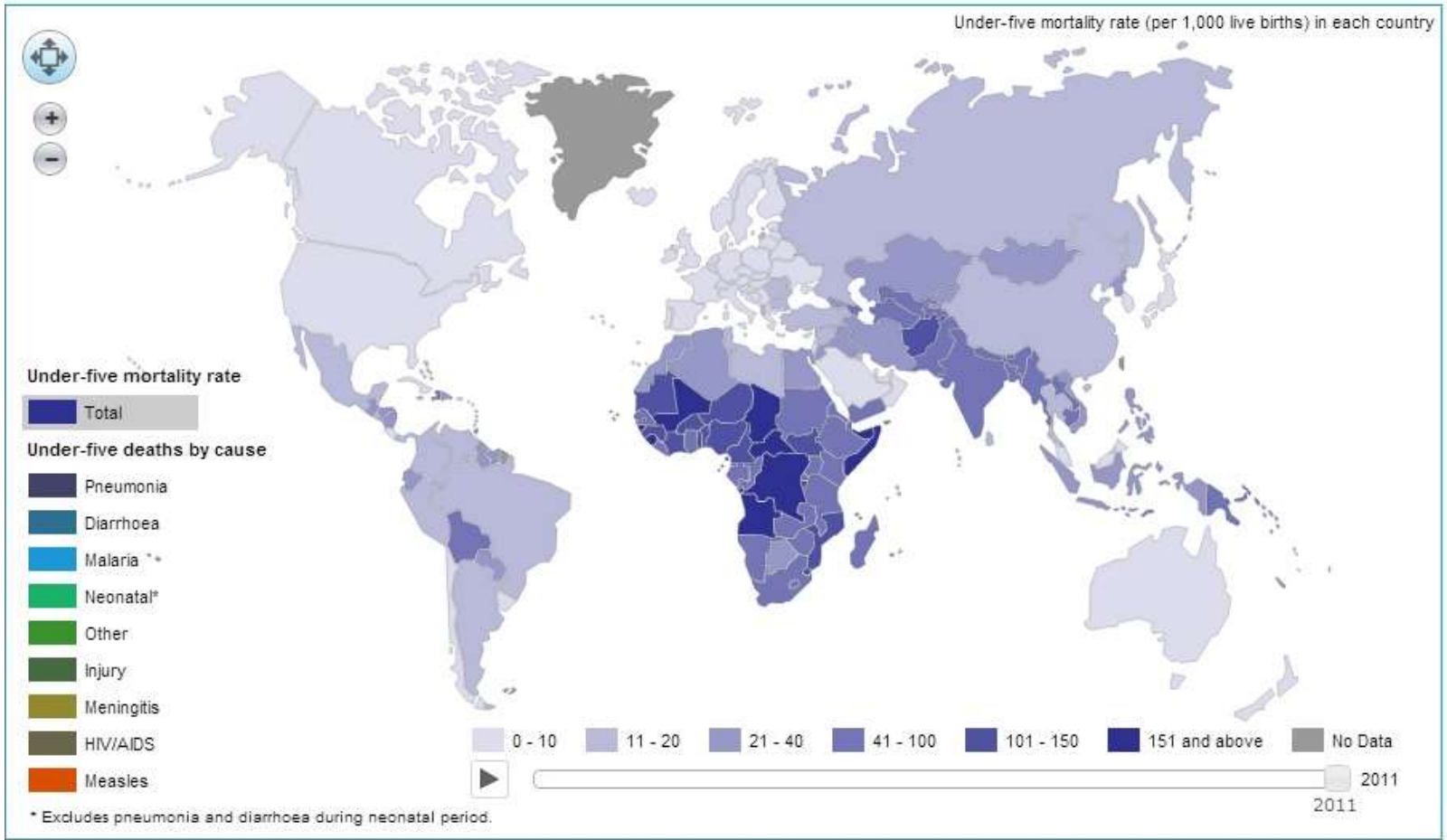
TOTAL	PER MONTH	PER WEEK	PER DAY	PER MINUTE
6.9 million	576,000	133,000	19,000	13

A child death occurs with every blink

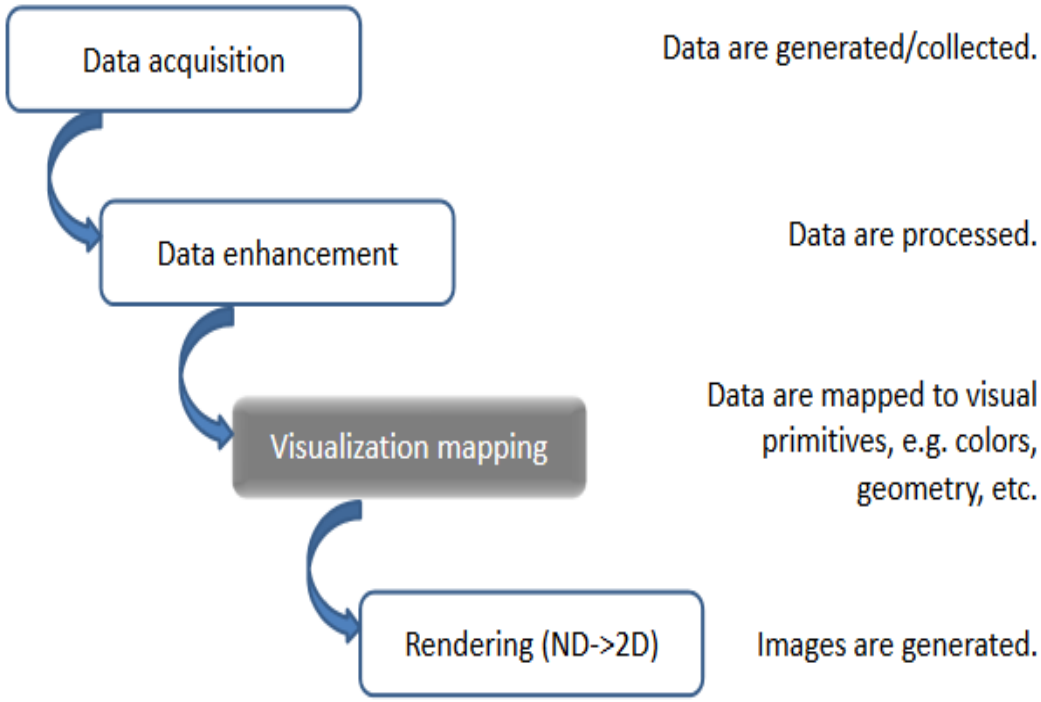
NOW
●

Select country: Global

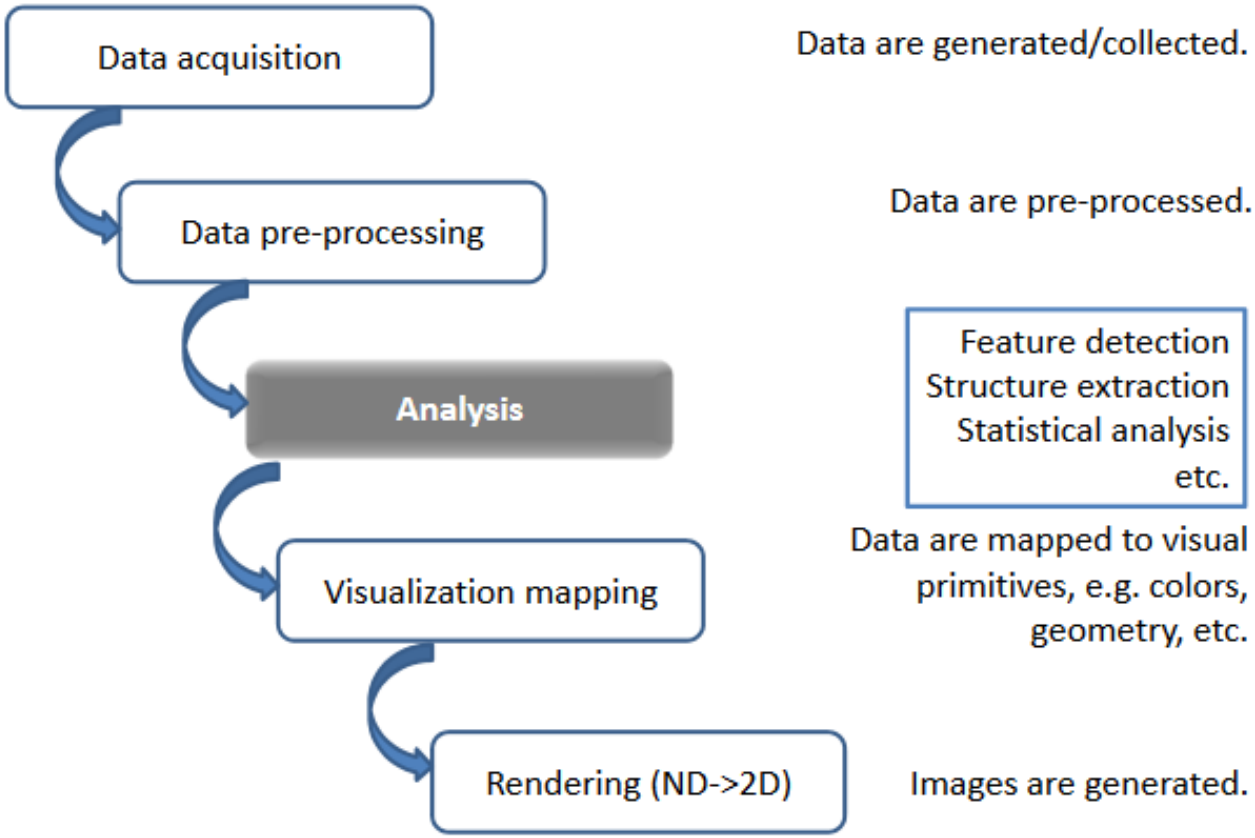
UNDER-FIVE MORTALITY RATE IN EACH COUNTRY



A Visualization Pipeline



Data Visual Analytic Pipeline



Reality to People's Brains

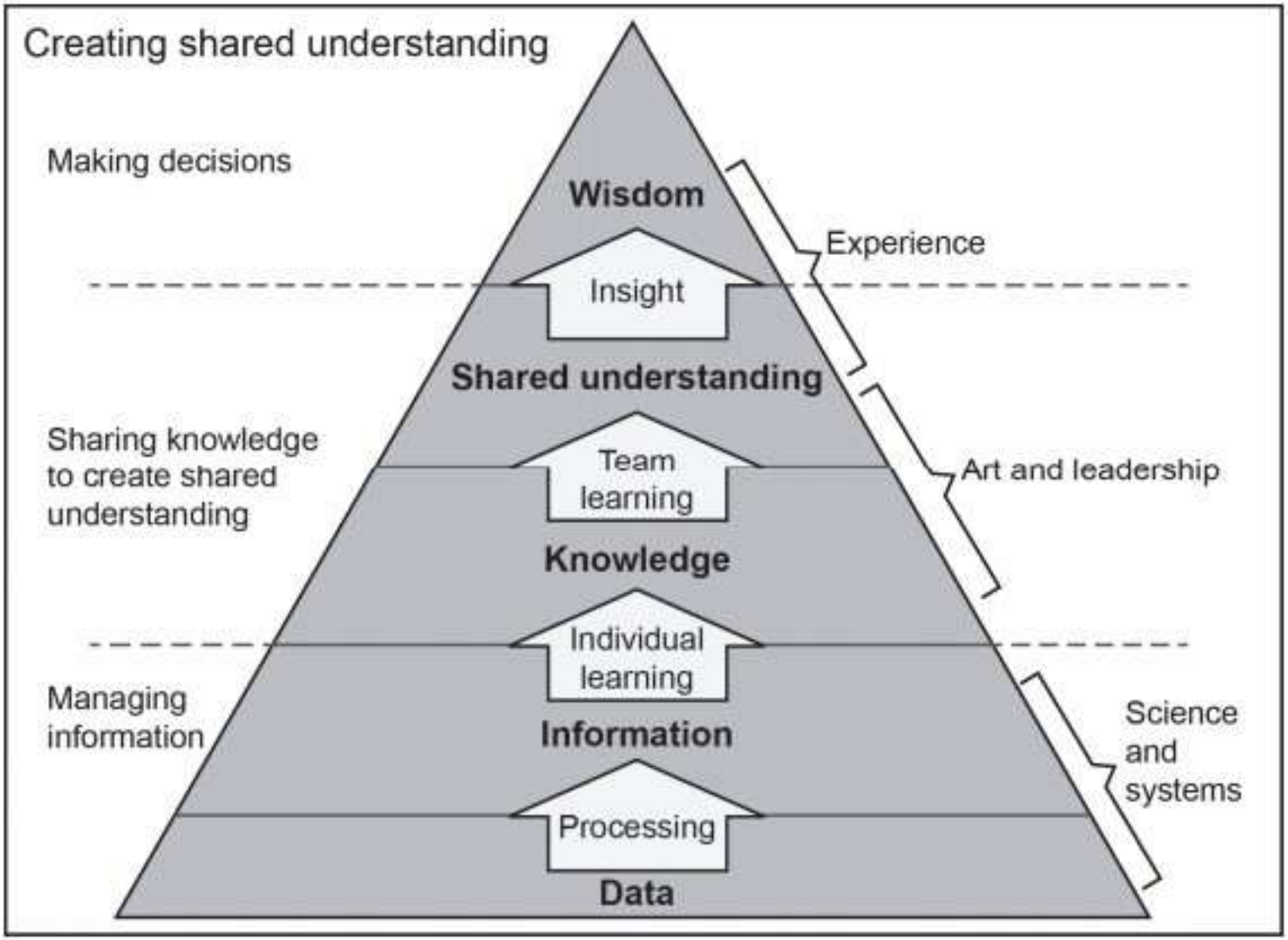


Image: datathenewoil.com

Important Steps

Image: GHeL

Know your Audience

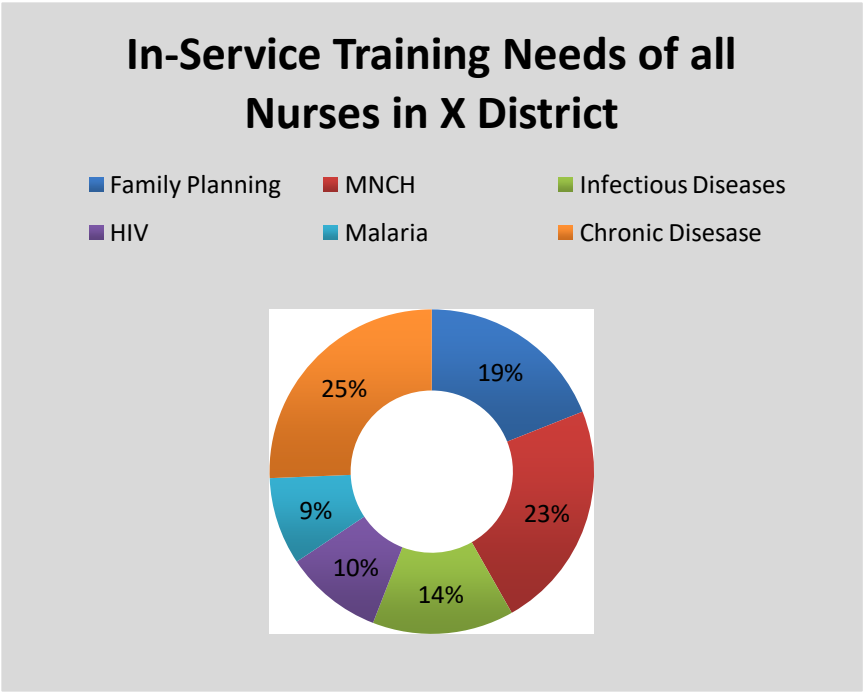
- Align data visualizations with the **goals** of your stakeholders
- Consider their **literacy**
- Don’t assume everyone is comfortable with **technology**
- Think about how your audience will **use** the visualizations

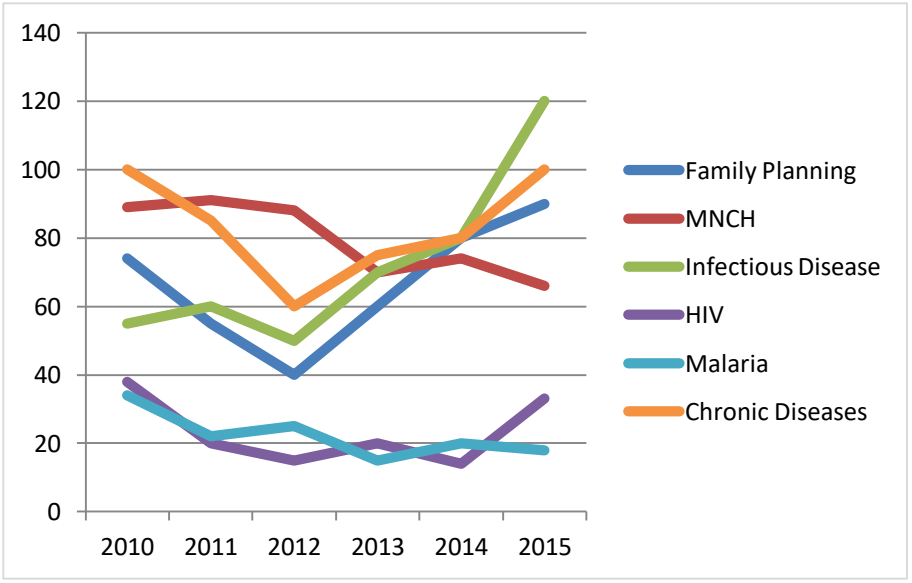
Find your Story

- Look for patterns, trends, and surprises
- Compare and contrast
- Avoid cherry picking
- Avoid exaggeration

Consider design

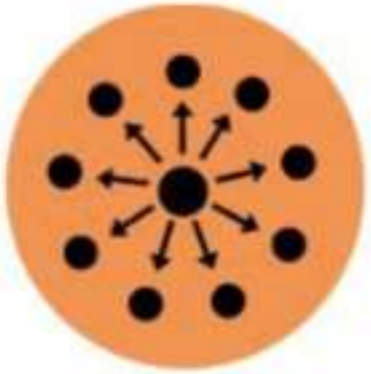
- Choose the right image to represent your data
- Try sketching on paper to brainstorm





Share and Communicate

- Obtain input and **feedback** from your colleagues
- Sharing data visualization can help **improve awareness and use of data**
- Consider sharing through **social media**



Build with Tools You Know

- Maintain focus for your target audience
- Simple images
- Keep data focused
- Ensure it is easy to read
- Include a great headline
- Make sure the information flows
- Cite your sources

Build with Tools You Know

- Use Excel to Create Pie Charts, Line Graphs, Scatter Plots and more

- Helpful tip is to use the Filter to help identify data you want to use. This can help you identify the counts you need for making charts.