Creating effective data visualizations to support family planning decision-making

Visualiser efficacement les données pour faciliter la prise de décision en matière de planification familiale

Nicole Danfakha, Senior Data Visualization Program Officer, JSI, Inc.
Dome Okoku, Monitoring, Learning, and Evaluation (MLE) Advisor, InSupply Health
Session Objectives

1. Identify key considerations for developing data visualization products

2. Build a dynamic and interactive decision-making tool in Excel

3. Tailor data visualization products to meet the needs of different audiences
Why visualize data?
0.5% of the data in the world has been analyzed
Today, content not distilled into easily consumable key points often fails to spark action by decision-makers.
Research shows that we process visual information more easily than text, and it stays with us longer.
Pre-attentive processing is the subconscious accumulation of information from the environment.
Preattentive Attributes

- Length
- Width
- Orientation
- Curvature
Preattentive Attributes

- Intensity
- Hue
- Shape
- Position
Preattentive Attributes
They are the building blocks of effective data viz
Defining and planning for data visualization
Data visualizations are any graphic representations of data.
Data visualizations can communicate huge amounts of data and help identify trends and areas of interest.
The key questions:

**WHO** is your audience?

**WHAT** do they want to know?

**HOW** will you communicate it?
Different stakeholders have different data needs. Consider your stakeholders’ literacy, numeric literacy, and what data they need to make decisions.
Types of visualization

- **Idea illustration**
  - Frameworks
  - Flow charts

- **Static visualization**
  - Basic chart/graph design
  - Qualitative visualization
  - Infographics
  - Static maps

- **Idea generation**
  - Graphic brainstorming
  - Theory of Change / Framework Development

- **Dynamic visualization**
  - Dashboards
  - GIS maps
Design basics
A Few Design Principles

Font
Pick appropriate fonts for your audience. Stick to 2-3 at the most and be consistent in usage.

Color
Use color to emphasize or reinforce value. Avoid the “Skittles effect.”

Balance
The eye tends to seek balance and will notice if your design is unbalanced. Use this principle to make your graphic visually pleasing.

Contrast
Use contrast (light/dark, big/small, thick/thin) to highlight/emphasize.

Hierarchy
Give your audience visual cues of what is the most important part of your message.
YOU WILL READ THIS BEFORE

You read this.

Or this.
Facts about Penguins

Penguins are aquatic, flightless birds that are highly adapted to life in the water. Their distinct tuxedo-like appearance is called countershading, a form of camouflage that helps keep them safe in the water. Penguins do have wing-bones, though they are flipper-like and extremely suited to swimming. Penguins are found almost exclusively in the southern hemisphere, where they catch their food underwater and raise their young on land.

Diet Staples: Krill, fish and squid. In general, penguins closer to the equator eat more fish and penguins closer to Antarctica eat more squid and krill.

Population: The penguin species with the highest population is the Macaroni penguin with 11,654,000 pairs. The species with the lowest population is the endangered Galapagos penguin with between 6,000-15,000 individuals.

Location: Penguins can be found on every continent in the Southern Hemisphere from the tropical Galapagos Islands (the Galapagos penguin) located near South America to Antarctica (the emperor penguin).

Behavior: Penguins can spend up to 75% of their lives in the water. They do all of their hunting in the water. Their prey can be found within 60 feet of the surface, so penguins have no need to swim in deep water. They catch prey in their beaks and swallow them whole as they swim. Some species only leave the water for molting and breeding.
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Color

Avoid using too many colors
Color
Incorporate white space to give the eye a break
Contrast
Carefully consider contrast
Selecting the right chart type
Types of visualization

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Quantitative Data Types

**Nominal/Categorical**
Data that can be sorted according to group or category.

**Examples**
- Types of medications.

**Ordinal**
Data of selected categories ordered along a numerical scale.

**Examples**
- Degrees of client satisfaction from a Likert scale.

**Discrete**
Numerical data that has a finite number of possible values/units.

**Examples**
- Number of health workers in a facility.

**Continuous**
Numerical data that is measured along a continuum.

**Examples**
- Rainfall in a year.
Communicating clearly with charts
Declutter your chart

“Erase non-data ink, within reason.”

Edward Tufte
from The Visual Display of Quantitative Information
Declutter your chart
Remove the default lines, borders & tick marks that distract your audience
HIV Prevalence in Guyana’s key populations has declined sharply in the last decade.

**Before**

- Female Sex Workers: 26.6%
- Men having Sex with Men: 21.0%

**After**

- Female Sex Workers: 5.5%
- Men having Sex with Men: 4.9%
Use color to add impact

If you use color sparingly, it becomes more powerful
Use color to add impact

Selective use of color helps the important points stand out.
Use color to add impact
Consider black & white printing and those who are colorblind
S&D remains a challenge: The majority of facilities reported more than 16 incidents last quarter.
Create purposeful titles & labels
Consider using data labels sparingly, reserving them for key data points

BEFORE

Low scores in supply-side categories require national action to improve health services.

AFTER

Positive attitudes-health staff
Positive attitudes-community
Quality of services
HIV stigma & discrimination
Infrastructure & equipment
Contraceptives

Average Score

0 2 4 6 8 10

max score
Best practices

Avoid 3D charts; use ‘flat design’ instead

BEFORE

AFTER
Best practices
For comparing charts, keep the style consistent

BEFORE
Best practices
For comparing charts, keep the style consistent

AFTER
Best practices
Avoid using pie charts if possible, especially for comparisons

BEFORE

AFTER
Best practices
Use the full axis by starting at zero
Excel Skill Building

We will now split into two groups to begin the second part of this session: Excel skill building.

There are two options for the skill building:

**Beginner**: Participants for the beginner session have used Excel before but do not use it often and are looking for an opportunity to learn how to put the design principles to use to visualize self-injection data. The Beginner session will go through basic charts.

**Advanced**: Participants for this session should have some working knowledge of Excel, use it on a day-to-day basis, and be familiar with Pivot Tables. The Advanced session will create a dynamic visualization elements for a dashboard.

To join the skill building session, navigate to your agenda through Pathable.
THANK YOU.