Data Visualization and Infographics:
A good infographic is worth a thousand words

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To advance DHDDSP’s strategic priorities through leadership in health communications, policy coordination, and partnership development.
Presentation Overview

- The potential impact and value of infographics
- Basic steps for creating quality infographics
- Infographic formats
- Tools and resources
Initially planned to give money mainly to get countries wired and full of computers

Interest redirected to fighting disease in third world countries after reading a two-part series article back in January 1997

Later confessed it wasn’t the 3,500 word article but the graphic that impacted him
In Third World's Impoverished Lands, Water Is a Deadly Drink

Precautions for Those Who Travel in Risky Areas

Groups That Help Those Who Fall Ill

The Struggle Against Waterborne Disease

Sanitation's Role: Preventing Disease

The Importance of Clean Water

Death by Water: The Tragic Toll of Contaminated Water

Waterborne Diseases: A Global Crisis

The Challenge: Providing Safe Drinking Water

The Importance of Water Treatment

For More Information

Readers who wish to learn more about the issues surrounding waterborne disease and the efforts to combat it can visit the following websites:

- Water.org
- Unicef.org
- The World Health Organization (WHO)

Contact Information

If you have any questions or concerns regarding the availability of safe drinking water, please contact your local health department or water utility.

ByጽReferences


For Further Assistance

If you require additional assistance or have questions related to the availability of safe drinking water, please contact the following organizations:

- The American Water Works Association (AWWA)
- The National Sanitation Foundation (NSF)
- The Environmental Protection Agency (EPA)

ByጽReferences

“No graphic in human history has saved so many lives in Africa and Asia”
—Nicholas Kristof

**Death by Water**

A huge range of diseases and parasites infect people because of contaminated water and food, and poor personal and domestic hygiene. Millions die, most of them children. Here are some of the deadliest water-related disorders.

<table>
<thead>
<tr>
<th>DISORDER/ESTIMATED DEATHS PER YEAR</th>
</tr>
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<tbody>
<tr>
<td><strong>DIARRHEA</strong> 3,100,000</td>
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*Diarrhea is itself not a disease but is a symptom of an underlying problem, usually the result of ingesting contaminated food or water. In children, diarrhea can cause severe, and potentially fatal, dehydration.*

| **SCHISTOSOMIASIS** 200,000 |

*A parasitic disease caused by any of three species of flukes called schistosomes and acquired from bathing in infested lakes and rivers. The infestation causes bleeding, ulceration, and fibrosis (scar tissue formation) in the bladder, intestinal walls and liver.*

| **TRYPANOSOMIASIS** 130,000 |

*A disease caused by protozoan (single-celled) parasites known as trypanosomes. In Africa, trypanosomes are spread by the tsetse fly and cause sleeping sickness. After infection, the parasite multiplies and spreads to the bloodstream, lymph nodes, heart and, eventually, the brain.*

| **INTESTINAL HELMINTH INFECTION** 100,000 |

*An infestation by any species of parasitic worm. Worms are acquired by eating contaminated meat, by contact with soil or water containing worm larvae or from soil contaminated by infected feces.*

*Sources: World Health Organization; American Medical Association Encyclopedia of Medicine.*
Clear Messages Can Contribute to Public Health Success

The Water Sanitation and Hygiene Program led by the Bill and Melinda Gates Foundation has resulted in more than $200 million USD being used to create and expand access to clean water and hygiene systems. The image above depicts one project in Kibera, Kenya.
Why are Infographics So Compelling?

- The number of infographic internet searches has increased by more than 800% over the last 3 years.
- According to Mashable, a well designed infographic is 30 times more likely to be read than text articles.
- We live in an era where:

  - are increasingly viewed as part of our modern lexicon!
Why are Infographics So Compelling?

Infographics are simply illustrations that convey complex information in ways that are visually appealing and easily understood.

- 90% of the information that enters the brain is visual.
- The brain processes images three times faster than text.
- Half of the human brain is dedicated to visual function.
Why Is Data Visualization Helpful, Needed, Growing?

- People like and relate to symbology
- Helps translate complex scientific data for visual learners and low literacy audiences
  - Information graphics are suitable and most effective where design gives readers the “a ha” reaction
Understanding the Basic Steps for Creating Quality Infographics
Key Questions to Consider BEFORE You Begin Working on an Infographic

- Is your information unique and valuable?
- Is the information best served with an infographic?
- Do YOU understand it?
- Do you have a hierarchy?
- Do you have a great designer?*  

*Desired, not required.
So You What to Create an Infographic?

- Who are you talking to? (audience)
- What do you want to say to them? (messaging)
- Does your audience understand what you’re trying to say? (message pre-testing)
- How does your audience want to receive the message? (appropriate communication channels, tactics & activities to reach your audience)
What Type of Infographic Do You Need?

Infographics: Charts, Figures and Pictographs

- Sometimes called a data collection graphic
- Presents 1-3 facts, data sets or statistics but does not seek to tell a story
- Often used to enhance fact sheets, brochures
Pictographs or Infographics:
What is the difference?

Pictographs or Charts
• Sometimes called a data collection infographic
• Presents 1-3 facts, data sets or statistics. Not intended to tell a story
• Uses an image to convey information within a chart or graph

Infographics
• An illustration often drawn from multiple data sources.
• Intended to tell a story or issue a call to action.
• Form and function may vary
Pictograph

The pictograph illustrates the risk of cardiac events with and without statin therapy. Without statin therapy, the risk is 16 in 100 (16%). With statin therapy, the risk is 8 in 100 (8%). Minor side effects are 1 in 100 (1%).

Figure 4  Screenshot of the pictograph.

Key Elements of a Quality Infographic

What are the major parts of an Infographic?

The Visual
This refers to the colors, graphics and icons used in designing the infographic.

The Content
This includes the text, statistics, time frames and references.

The Knowledge
This refers to the facts and conclusions to convey the overall message or story.

OK. I WANT TO CREATE AN INFOGRAPHIC. WHERE DO I BEGIN?
Infographic Development at a Glance

5 STEPS to TRANSLATE EVALUATION FINDINGS to INFOGRAPHICS

**PLAN STEP 1**
Define your purpose

- Why am I creating this piece?
- What do I hope it will accomplish?

**PLAN STEP 2**
Know your audience

- Who is my target audience?
- What knowledge level do they have of the subject?

**PLAN STEP 3**
Establish your key message

- If my audience can only take one point away from my piece, what should it be?

**PLAN STEP 4**
Translate your data/findings

- What data/findings best support my key message? How can I communicate it in a way that is most understandable and relevant to my target audience?

**CREATE STEP 5**
Create your infographic

Step 1 – Define Your Purpose

Begin with a clear understanding of why you are creating the infographic.

- What do you want the tool to accomplish or convey?
- Is this the best method for giving your data a voice?
Step 2 – Know Your Audience

Know your target audience!!

• Central to all communication activities.

• Understand literacy levels and familiarity with subject matter

• Hard to overstate the importance of establishing consensus here
Step 3 – Establish Your Key Message

Arguably, the most challenging part of the process.

- You MUST be able to arrive at a single communication objective or call to action.
- Err on the side of simplicity.
- Do NOT proceed if you cannot arrive at a clear consensus.
- Good time to discuss evaluation
Step 4 – Translate Your Data/Findings

• Identify the key themes and patterns reflected within your data.
• Do the data support your communication objectives and intent?
• Will this data make sense and be of value to your target audience?
• Function > Form
Step 5 – Create Your Infographic

- Assemble your team
- Confirm/test assumptions
- Rely on your designers and experts
- Establish timeline and project milestones
- Confirm your channel thinking
- Be “functionally creative”.
Things Could Get a Little Messy
The Creative Brief: The (not so) Secret Weapon

• Your “power tool” for developing infographics or just about any other creative product
• Centralizes intent and consensus.
• “Measure twice, cut once.”
Infographic Formats and Examples
Snapshots

Every Year, up to 24,000 women with gestational diabetes will develop type 2 diabetes shortly after pregnancy.

Since the 1990s, 45 Salmonella outbreaks have been linked to live poultry.

Major Decrease in MRSA Infections

- 31,000 fewer severe MRSA infections in 2011 vs 2005
- 9,000 fewer deaths in hospital patients in 2011 vs 2005
- 54% decline in severe MRSA infections in hospital patients between 2005 & 2011

Source: CDC Division of Creative Services
Increasing PrEP Use

A focused effort by New York State to increase PrEP uptake started in June 2014 and included:

1. Provider Training
2. Raising Awareness
3. Ensuring Medicaid Coverage

Number of New York State Medicaid beneficiaries receiving PrEP.

SOURCE: NYS Medicaid Data Warehouse (based on Medicaid data loaded through July 2015).

Source: CDC Vital Signs-Increased use of Preexposure prophylaxis (PrEP).
Comparative Style

- Used to compare and contrast
- Well suited for demonstrating advances and progress
- Often used by policymakers
- Typically bridges specific periods of time.
Icon and Text Driven Style

Source: CDC Vital Signs – Blood Pressure Control, Helping Patients Take Their Medicine
Low Sodium Quick Tips

Here are 3 reminders...

At the Store
- Read nutrition labels to compare products and choose the lowest sodium option.
- Use more naturally low sodium foods, like fruits and vegetables without added salt, for cooking at home.
- Out of options? Ask your local grocer to stock low sodium choices of the foods you buy.

At School
- Support healthy sodium standards for snacks and meals in the cafeteria and school events.

At Restaurants and Fast Food Eateries
- Before you order, ask for nutrition facts, then select a lower sodium choice.
- When you order, ask that no salt be added to your food when cooking.

Source: CDC Vital Signs, Sept. 2014 www.cdc.gov/vitalsigns
Format and Function

Mixed methods Infographic:
- 72in X 36in
- Visually compelling as a display.
- Not as well suited for a page or screen
- Provides a clear calls to action

Source: CDC Polio Eradication Program
Icon Driven Style

Prescription for a younger heart

- **High blood pressure** – Make control your goal.
- **High cholesterol** – Work with your doctor on a treatment plan to manage your cholesterol.
- **Diabetes** – Work with your doctor on a treatment plan to manage your diabetes.
- **Tobacco use** – If you don’t smoke, don’t start. If you do smoke, get help to quit. Avoid secondhand smoke.
- **Unhealthy diet** – Eat a healthy diet, low in sodium and trans fats and high in fresh fruits and vegetables.
- **Physical inactivity** – Get 150 minutes every week of a moderate intensity exercise such as brisk walking.
- **Obese** – Maintain a healthy weight.

Source: CDC Vital Signs, September 2013
Timeline Style

- Ideally suited for demonstrating chronology
- Great way to capture milestones and progress – typically in larger increments
- Format and function are key. Better suited for print and other wide media formats

Source: CDC Division of Community Health
Infographic Tools and Resources
CDC Resources

CDC Infographic Standards Guide
- Provides a step-by-step approach for creating quality infographics based on CDC’s requirements.

Creative Brief Template
- Referenced earlier
- Provides you with a roadmap for infographic development
Creating Great InfoGraphics OnDemand Design Tutorial

Deep Local Inc
Nathan Martin
Collin Miller

Design agency out of Pittsburg, PA offering an online tutorial through MyDesignshop.com that covers step-by-step guidance to the information design process
Infographic & Data Visualization Tools

Piktochart – Simple and intuitive tools and templates. Offers a free trial.

Canva
Primarily a graphic design tool. Can be integrated into infographics and pictographs.

Tableau data visualization “power tool”. Offers online training. Has an active user community.
Additional Insights

- Infographics should be viewed as living documents
  - They will require review, revision and/or removal as data evolve

- Now that you’ve created it, evaluate it!
  - Collect audience insights
  - Use A/B testing to measure performance
  - Use findings to improve and refine your practice
Questions