Designing Infographics – A Manual for Health Care Provider Learners and Practitioners

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Contents

1. Introduction

Infographics like handouts, one-pagers or brochures are combinations of text and imagery commonly used in health care to summarize complex information in a story for health care learners, providers, patients or other audiences.[1,2] Infographics are used in health care higher education both for teaching and learners' projects.[3-5] Family Medicine residents, Nurse Practitioner students and other provider learners often make infographics for their scholarly projects. Once in practice, health care providers make infographics for their patients, the facilities they work in, and to disseminate information to the public. Infographics also are effective for mobilizing research findings.[6]

The evidence base for infographics creation in health care is fragmentary and only just being summarized.[7-9] However, we think there is enough consensus for broad brush recommendations. Infographics development begins with needs analysis, then flows through content gathering to design, distribution, and evaluation. The basics of most of the phases are relatively straight-forward, but comprehensive guidance for the design phase is not readily available for those without a background in design. Well-funded teams tend to collaborate with expert designers, marketers and evaluators, but many learners and practitioners do not have access to such expertise.

Our objective for this manual is to summarize published evidence for basic principles of infographics creation, with an emphasis on the design phase. Our primary audiences for this manual are health care provider learners, practitioners, educators and researchers who wish to use infographics in their work but do not have access to professional designers. Our goal is to help with the pressing need to make accurate, unbiased health information readily available to all.

Tip

Don't dive into designing an infographic before scanning the whole manual. It won't take long.

Scope

This manual is intended only as a basic resource for health professionals in creating infographics. It does not establish a standard for course work or practice. We are not design experts, though we have assisted in developing infographics and in overseeing learners who make infographics during their training. While the manual does not cover the development of apps or interactive online tools for disseminating knowledge, some of the principles in this manual can apply to those tasks as well.

Next Steps

The evidence base for much of this guidance remains incomplete. Knowledge mobilization is evolving extremely rapidly in this digital age. We imagine a near future where digital systems will profoundly change the way learners and practitioners create and disseminate evidence-based information for their audiences. Digital systems already can function as expert consultants and assistants in ways that supplement the manual processes we describe in this manual. But, for the foreseeable future, informed expert human oversight will be needed to judge the output from digital systems. So, we invite you to tell us what you like and don't like about the manual. This manual will be revised with your feedback and as new information emerges from research studies and expert guidance.

2. Creative Process

Table 1 shows the elements of infographic creation.[10-14] Learners creating infographics for projects might need to complete some of those phases but not all. For example, they might stop after the design phase but describe external review, dissemination and evaluation in their project reports. Learners without the resources to engage audience informants could comment on that issue in their reports. Providers planning public release will want to consider all phases.

Table 1. Infographic creation.

Identify the topic	**What is the problem you are trying to address with an infographic?**
Understand the audience	Health care provider group, patients, family members, administrators, policy analysts, general public or others? Young, old or elderly? Mix of cultures or certain sub-groups? Specific accessibility requirements?
Assemble development team	Identify who will participate in development of the infographic. If resources permit, engage early participation by members of the intended audience.
Do needs analysis	Identify what the audience wants, needs and should know. Clarify the purpose of the infographic.
Find existing tools	Find out what tools already exist. Identify opportunities for improvement over existing tools.
Identify content, assess the evidence	Gather evidence using literature searches, expert opinion and team consensus. Assess the evidence. Think about the story the infographic will tell the audience.
Choose format and plan distribution	Decide on the format, for example paper handout or electronic file. Consider accessibility. Plan how the infographic will be distributed, stored and revised.
Design phase	Design and test prototypes: see Chapter 2.
External review	Consider external review of the infographic for content and accessibility by experts and intended audience prior to finalizing the design and distributing the infographic.
Distribution	Distribute the infographic.
Evaluation	Assess the effectiveness of the infographic.
Revision	Revise and re-issue new versions as required.

1- Identify the Topic

The first step is to identify the topic. For learners, it might be a subject they have an interest in or want to learn more about. Other learners and practitioners pick topics based on an identified need in a particular audience. Infographics typically address only 1 to 3 main points, so highly nuanced, complex topics might not be suitable.[10] In those cases, infographics can be used to attract audiences to more detailed information sources. To refine the topic, write drafts of the topic statement while considering desired outcomes (objectives).

2- Understand the Audience

The topic step goes hand-in-hand with identifying and understanding the target audience. For the general population, consider differences in age, ethnicity, gender, culture, education level, societal roles and accessibility requirements.[15-18] Consider engaging members of the intended audience early in development to understand their priorities and preferences. Lived experience participation especially important in the design phase, to get a feel for what design elements would work best to enable comprehension and actionability.

Stones and Gent (2015) suggested writing out a "persona" to describe the audience, considering:[11]

- Their literacy in health terminology, numbers and imagery;
- Life experiences, behaviours and opinions;
- Health experiences and opinions;
- How they interpret colours;
- Their preferred go-to places for information;
- Their time available for learning;
- Their needs with respect to the chosen topic.; and
- Their accessibility needs.

Keep the persona in mind during the design phase.

3 – Assemble the Development Team

Learners might work alone on projects, but some might wish to identify collaborators, including intended audience members with lived experience. Intended audience participation is valuable in shaping the design and all other development phases.[12,14,19] They can advise on need, format, content, distribution and evaluation. Collaboration with health system managers and practicing providers helps to make infographics more relevant and practical, and facilitates dissemination. Practitioners creating infographics also need to consider their institution's perspective. Finally, it is best to consult a design expert, but that might not be practical for many.

4 – Do a Needs Analysis

What are you trying to achieve? Needs analysis considers the topic, objectives and audience to clarify what is needed to achieve desired outcomes. Consultation with experts and the intended audience can be very helpful by identifying factors one might otherwise not have considered. What you think the audience needs might be quite different from what they are looking for. For example, lived-experience participants who are very familiar with the topic of interest might not remember what it was like to be a newly diagnosed person.[14] Or a helpful infographic designer in one health profession might not understand the needs of an intended audience who are learners in another health profession, or even the same profession but practising in a different setting.

5 – Find Existing Tools

Search for existing infographics and other types of tools intended to mobilize information on the topic. Identify opportunities to improve on existing tools. An older infographic might need updating or refining. Access to a complex online patient education system can be eased with an infographic that helps audience members to get started. Infographics in a related area for the intended audience can help to inspire your design.

6 – Identify Evidence-Based and Accessible Content

Considering the story you intend to tell, identify **evidence-based content** from the perspectives of both you, your audience and your organization.[12,15] Infographics can contain only very limited information. The trick is to decide on just enough: not too little but not too much.[4]

- Start by conducting literature searches using tools like PubMed and Google Scholar and consulting a professional librarian. Librarians are available at universities, hospitals and professional associations.
- Evaluate the strength of evidence and certainty of conclusions for information that will be included in the infographic.[20] At its simplest, evidence evaluation for management of health issues considers the quality, quantity and consistency of pieces of evidence, including attention to bias. There are other criteria for assessing evidence for causality, conducting program evaluation, and evidence in the form of expert opinion. Evidence evaluation is beyond the scope of this manual.
- When evidence is very limited, consider ethical pitfalls in infographic design such as the risks of misinformation, miscommunication and bias.[22,23]
- External review by content experts prior to distribution can help to mitigate communication risks such as bias, inaccuracy or information gaps.
- Consider how to accurately and succinctly reference sources in the infographic.
- Guidance is emerging for selecting the content of infographics for specific tasks, such as the RIVA-C checklist for summarizing the findings of comparative studies of health interventions.[20]

Accessibility is a key consideration in the development of infographics.[17,18,21] Think about accessibility to ensure that all users, including those with disabilities or impairments can access and understand the information. Accessibility starts with content: the content must be appropriate to the objective and audience, and easy to understand. See Chapter 2 (Designing the Infographic) and Chapter 3 (Software) for more tips.

7 – Choose Format and Plan Distribution

The format of the infographic and how it will be distributed informs the design phase: a paper handout, brochure or poster might look different from an electronic version intended for viewing on a cellphone, for example.[11] Consider accessibility of different formats, for example whether the format is compatible with screen reader technology that verbalizes for readers with impaired vision.

8 – Design Phase

The main focus of this manual is the design phase: putting text, imagery and white space together to create your infographic: see Chapter 2 (Designing the Infographic) for things to consider.

9 – External Review

Consider external review of the infographic by experts and the intended audience for content and accessibility prior to finalizing and distributing it. Ideally, use external review throughout development, including prior to starting the design phase. External review can reduce risks of misinformation, bias, inaccuracy, information gaps, weak utility and inaccessibility.

10 – Distribution

Once the infographic design is finalized, it needs to be distributed to the intended audience. Learners might only describe how the infographic could be distributed. Distribution is part of the larger process of disseminating evidence-based information to achieve a desired outcome.[8]

Planning for distribution should begin early in the development process. There are many physical and electronic options for distributing infographics to audiences, commonly printed handouts, emailing, or posting on websites.[11] There is at least anecdotal evidence that wall posters about clinical matters can be stressful for patients compared to more neutral and comforting wall hangings.

11 – Maintenance: Evaluation and Revision

The infographic should be evaluated after initial distribution and could need revision depending on how it is received by the intended audience. Like distribution, planning for maintenance should begin early in the development process. Evaluations assess factors like reach, appeal, comprehension, recall, and effectiveness in achieving the objectives.[2,11] Evaluation planning considers what information will be collected and how; how the information will be analyzed; and how the findings will be used to revise the infographic or further dissemination. End-user evaluation can be done with surveys, focus groups or even laboratory tests (e.g. eye tracking), for example.[12] Based on the findings, revise the design or distribution plans. Consider how new evidence will be incorporated, and how end-users will be informed of revisions.

3. Design Phase

The design phase begins while working through early development phases, but doesn't really get going until you start putting pen to paper. **Table 2** summarizes basic infographic design considerations, starting with establishing a short list of *a priori* design principles specific to your project and ending with prototype testing. Once you finalize your design, go back to Chapter 1 for ideas about the distribution and maintenance phases.

Table 2. Infographic design phase considerations.

Design Considerations	
Establish design principles	Develop design principles with the team and, ideally, end-users. Consider cultural diversity, language and readability. Expect to revisit the list and revise it as you work through the design phase.
Sketch general layout on paper with pen or pencil	One page or two? For printing on paper or electronic distribution or both? Whole pages, folding brochure or poster? Paper sizes vary across countries and for different printing purposes. Consider whether the infographic will be viewed on cellphones. Considering the storyline, draw boundaries for text blocks, images, and white spaces. Consider the balance and alignment of those blocks. The flow of those blocks helps to tell the story. Do not add any text or imagery at this point.
Chose the title	Chose a compelling title that attracts readers and sustains their attention.
Choose fonts	Consider font type, size and justification.
Choose colour palette	Pick limited complementary colours appropriate for the topic and audience.
Add text and graphics/ images	Consult the guidelines you established to choose text and graphics/images to tell the story.
Ethical, privacy and copyright considerations	Brevity risks insufficient information, misinterpretation, misinformation and bias. Be careful about privacy issues using real people's stories. Watch out for copyright if using others' content.
Cite sources	Tell the reader about the evidence base for the information in the infographic. Add institution logo if appropriate.
Draft prototype	Chose design software (Chapter 3): set document parameters for size and resolution appropriate for the planned distribution medium. Add content: consider readability, understandability and actionability. Balance text, imagery and white space appropriately for audience and topic.
Evaluate prototype	Test the prototype with the development team, end-user informants and content expert reviewers.
Revise design	Revise the layout, imagery, text and colours based on feedback from the team and reviewers.
Finalize design	Freeze the design.

Basic Elements of an Infographic

Every infographic is different because there are so many variables, including differences in topics, intended outcomes, audiences and content. Nuances of fonts, colours and layout differ for various purposes. While there are no established standard templates, the basic elements of an infographic are:[4]

1. **Structure**: a clear, logical layout.
2. **White space**: meaningful use of white space.

3. **Color palette**: colours are consistent, complementary, purposeful and meaningful, with sufficient contrast between text and background.
4. **Text**: appropriate and accessible font types and sizes.
5. **Imagery**: effective information visualization, including use of alt text for images posted online in HTML.

There are two broad areas to consider in telling the story: (1) **content**, meaning the information that will be conveyed in text and imagery, and (2) **visual look**, meaning the colours, text font, and layout of content, images and white space.

- **Content** is chosen to achieve a desired outcome. The content must be evidence-based, ethically correct, unbiased and accessible. It is crucial to use the content in ways that make sense to the intended audience. For example, patient informants who have lived for years with a health condition that the infographic is addressing need to think about how they would have understood the infographic back when they were first being diagnosed. 14 Consider content and design aspects for infographics for health professional audiences, as mentioned in other sections of this manual.
- **Visual design** requires understanding "visual literacy", meaning how people interpret the way infographics look. 2,22 Consider accessibility factors, for example users with visual impairment might miss important context that you mean to convey by your colour choices. 21

Accessibility

Consider accessibility issues while designing your infographic. Accessibility design ensures that all users, including those with disabilities or impairments can access and understand the information. See sections below for accessibility tips.[17,18,21]

First Step: List Design Principles

Before you start on the design, consider the story you want to tell. Reflect on the information in this manual to draw up a list of principles that will guide design of your infographic. For example:

- State your objective with intended outcomes.
- Summarize your intended audience's persona.
- Identify accessibility requirements.
- Describe the type of content you will use; focus on your objective, the evidence base, and your audience.
- Look through the rest of this chapter for ideas about principles regarding, for example, audience engagement, layout, text versus image content, and how text, imagery, colour and white space will work together for your audience.

Keep in mind differences and overlaps between the organization's goals (what you want to achieve with the infographic) and the audience's goals (what your audience wants from the infographic).

In addition to the overall storyline for the infographic, patient's own stories can help readers to make sense of the information and understand why the infographic's story is important to them.[23]

Clarify the Storyline

"*Design is an opportunity to continue telling the story, not just to sum everything up*" (Tate Linden)[2]

Good infographics tell a story that makes sense to the user.

- Infographics are very **short stories,** not novels.
- A **story** is a narrative about an emotional journey taken by characters. Stories allow people to share information in memorable way that enables deeper understanding. For example, simply telling someone to do something does not stick as well as telling someone about a person who had a good outcome if they did the thing. The first is merely a directive, while the second is a human story.
- The **plot** is the sequence of events that make up the story, from start to finish. The plot includes the beginning where the storyteller introduces the characters, setting and problem; then moves to the rise in action where tension escalates, then talks about the peak (climax) where a decision must be made, then provides answers during the fall in action and, finally, describes the happy ending where the problem is resolved.
- The **storyline** is a summary of the plot that describes the main thread of the story, summarizing main events around a problem that affects the characters, in a setting where the story takes place.

Sketch the Layout before Adding Content

A study of design students found that better infographics were designed by students who started by laying out all the content blocks on a piece of paper with pen or pencil **before** going to the computer or adding any content and there seems to be consensus on this approach.[24] Stones and Gent (2015) and Kibar et al. (2017) show examples of the process:[11,22]

- Find some examples of infographics similar to yours in terms of content, intent or audience.
- With the storyline in mind, align blocks horizontally and vertically. Eye-tracking studies give insights into how readers scan blocks in infographics. Grid systems guided readers better than random block placements.[11]
- A good infographic tells a story.[15] Lay out the blocks on the paper to achieve that end. Consider cues like headings, arrows, callouts, flow of text and images. Highlight main ideas in the story.
- Different people read infographics in different ways, so make drafts on paper to test different ways of positioning text and imagery blocks, considering reading flow in the storyline.[25] Some, particularly some professionals, go straight to text from left to right and top down. Others look first at the headings or images then might go back to read something in more depth. Some just skim, and callouts might focus those readers.[14] The trick is to design infographics for different reading styles and accessibility needs. For example, some users will use a screen reader and some will have other people interpret the infographic for them. Consider how the design works when it is read out loud.
- Use white space carefully. Place white space around blocks of text and graphics to highlight main storyline points. Don't make text blocks too narrow or too wide.
- Consider the infographic medium. Layout will be influenced by whether the infographic will be printed on letterhead-sized paper in black and white or colour, made into a folded brochure, or distributed electronically in a PDF or HTML format for viewing on cellphones and tablets.[26]

One author suggests this:[26]

- Use informative titles and headings.
- Use a three-part introduction:
  - Tell reader why the infographic is important to them.
  - Tell them what it was designed to accomplish.
  - Tell them what to expect when they read it.
- Organize the flow logically and make the flow apparent to the reader.
- Use appropriate text, imagery and colours that support the storyline.

Here is another way:[23]

- Get **right to the point:**
  - Answer “Is this information for me?”
  - Answer “What did you find out?”
  - Answer “How did you find this information, where did it come from?”
  - Answer “What should I do next?”

Choose the Title

Readers decide in a few seconds whether to read an infographic.[15]

- A few action-oriented, impactful words arouse interest better than an elaborate title.
- Use a more suggestive subtitle.
- Use words that speak directly to needs experienced by the target audience.
- But the title content must be true to the evidence and ethically sound, not misleading or sensational.[11]

Stones and Gent (2015) pointed out different approaches to titles:[11]

- Subject: “Vaccinations in Infants”
- Message: “Infant vaccination is available”
- Question: “What is the state of infant vaccination?”
- Fear: “Infants die when not vaccinated”
- Hopeful: “Infant vaccination can be increased”
- Call: “Be vaccinated not sick”

Text Content

These tips come from academic studies, design experts and expert advisors with lived experience:[4,6,11,14,15,17,18,25]

- The user needs to know, “Is this for me?”.
- Use headings and subheadings to organize the text and aid logical reading flow.
- Avoid large blocks of text. Keep a text block together, don’t wrap it around images, for example. Avoid dense text. Use left-aligned not justified text to prevent complex white spacing.
- Put important words first and keep sentences short.[17] One idea per paragraph. Start the paragraph with a sentence giving the paragraph’s topic.

- Use plain language. Use short, familiar words and short sentences. Use common words and only use jargon or technical language when necessary and likely to be understood the audience.[17] Use personal pronouns like “we” and “you”.[27] Avoid acronyms or symbols.
- Use the present not past tense, and active not passive voice: “your doctor is going to _” is better than “Doctors would have_”.[17]
- Use realistic examples that the audience can relate to. Use concrete not abstract words and order events temporally.
- Arial or Calibri fonts seem to be easy to read, but don’t mix fonts, certainly no more than 3 types. The 10-point size generally is too small. Use much larger fonts for children and those with reading difficulty. Avoid fonts with serifs.[17] Bolded font works better for emphasis than italics or underlining.
- Keep bulleted lists short and keep them together not across two pages.
- Be consistent in style features like headings and spelling out numbers versus showing regular numbers. Avoid capitalization, hyphens, semicolons and long sentences.
- Be cautious about how lay readers might interpret charts and statistics. Think carefully about how to use statistics. Write “half” instead of “49%”. This is the process of effective “data visualization” and there is lots published about it.[2]
- Be clear about evidence sources for the content in the infographic. Provide information about access to further resources for the audience. Refer (in an easy-to-understand way) to evidence sources: “How did you find this information?”.
- If tables are used, make them accessible: use informative headers for rows and columns, and a caption or summary to explain the table’s purpose.[18] Keep tables simple: avoid merged and empty cells, and rotated text.[17]

Plain language is preferred. Plain language means wording, structure and design that is so simple and straightforward that everyone can understand it. Technical language often fails because only specialized readers can understand it, including even a narrow group of health care practitioners within a sub-specialty of their own specialty. Patient information leaflets can be laid out well but often exceed patient comprehension thresholds.[27]

- **Readability** refers to ease of reading and understanding text. You can test readability using Microsoft Word. Select the block of text. Click on “Home”, then “Editor”, then “Document Stats”. Word returns scores for Flesch Reading Ease and Flesh-Kincaid Grade Level. Health care providers can read technical language, while language for the general public needs to consider different reading abilities. Guidelines suggest that general public infographic readability should be grade 8 or less and grades 4-6 are sometimes preferred. [28,29]
- **Understandability** refers to how easy it is for readers to understand the information. Actionability refers to how easy it is for readers to act on the information. Both can be assessed with, for example, the Patient Education Materials Assessment Tool (PEMAT). 12

Imagery Content

Graphics (drawings) and images (photos) aid reader retention when used well.[15] Here are some tips from the literature: [14,15,23,30]

• Not all handouts need fancy graphics or images. In fact, there is some limited evidence that some

Designing the Infographic | 10 technical readers like health care providers can prefer text in certain

circumstances. But even handouts for technical readers can benefit from graphics, and graphics aid engagement and retention for all audiences. 15

• Avoid distracting graphics like unnecessary grid lines or box outlines.

• Avoid mixing graphics and images with starkly different colours, contrast and dark/white space.

• Use images that seem real, relatable and sympathetic to the audience. Be aware that some people interpret images far differently than intended by the designer. 30 Avoid stock images using stereotypical representations of people because they look "phoney" to audiences and are not relatable.

• Use alt text (alternative text) to describe images in HTML infographics to improve accessibility for readers with different learning styles or accessibility needs. 17,21 Accessibility features can also be built into PDF versions.

• Use inclusive imagery. Avoid inadvertently reinforcing negative stereotypes of ethnicity, age or gender.

• The authoring organization's logo can convey credibility as well as source. 23

Data visualization is the process of picking the right way to image data.

18

• Be careful with charts: they can be easily misinterpreted, even by technical readers. Pick the right chart type for the data type and audience, or even use a non-chart method to display the data.

• Arcia et al. (2015) provide details about general public preferences for graphics of statistics and other types of health information. 19

• Graphics that use curves are preferred over linear ones like standard bar charts. 31

Text and Imagery Used Together

There is evidence that information from infographics is more likely to be retained than from text alone.15 Three randomized controlled trials comparing infographics and plain language summaries of Cochrane systematic reviews found that while infographics were preferred in terms of reading experience and user-friendliness in both lay and professional audiences, there were no differences between the two modes in knowledge translation.[32] That study has been criticized, but another (Canadian) study had similar findings.[5,33] Nevertheless, both studies found that readers preferred infographics over text alone.

Here are tips from the literature for thinking about text and images together:[15,25]

- Keep together text and images that refer to the same topic.
- Imagery and text generally complement each other rather than convey the same information but sometimes can be used to repeat the same information for different reader styles.
- Repeat the most important points in different ways using text, fonts, callouts, or images.
- Don't wrap a block of text around an image.
- Consider how to address varying beliefs held by audience members.
- For charts and graphs, label axes, data points and legends clearly with text rather than only colour and shape.[18]

If you want some insight into how design experts think of "visual literacy" in terms of infographics, check out Dunlap and Lowenthal (2016).[2] They point out that visuals are powerful learning tools and that the overall look is important. To get technical, "*Effective visuals apply visual organization and structure to reflect relationships, describe how parts of a whole interact, and/or reveal an underlying story*."

Colour Palette

Colours used in fonts, background and images must work together. They can have considerable affective impact, and they influence reader's comprehension owing to the meanings readers attach to colours, and ease of readability due to contrast levels and other accessibility considerations.[15,19,21,22,34,35]

- There are many online tools for assisting with infographic colour palette choice, but they might not consider nuances like cultural meanings. "Stoplight" colours were found to convey value judgements to some audiences, for example.
- Experts advise restricting colour rather than over-using it, and restricting the palette to 3-5 colours.[11]
- The Piktochart website has a basic primer. 34 Canva can suggest colour palettes.[36]
- Don't rely on colour alone to convey emphasis and meaning.[17]
- Consider colour vision impairments, which affect one in twenty people.[4] There are online tools that can be used to ensure that the colour palette is accessible to people who perceive colour in different ways.[18,21] Red/green and blue/yellow combinations can be problematic. Colour contrast is especially important for those with low vision. Online resources like the WebAIM Contrast Checker tool can be helpful (https://webaim.org/resources/contrastchecker).

Online Infographics

There are a number of accessibility design considerations for infographics that will be posted as HTML and even PDF formats.[18,36,37] Here are a few basic examples but readers should review other sources for more detailed information if they are designing online interactive infographics:

- Use concise, informative "alt text" to convey the meaning of an infographic for readers with vision impairments.
- Allow users to navigate them with a keyboard alone so that all interactive elements like buttons and links are accessible by the tab key with clear focus indicators.
- Use HTML elements for tables that include headers, columns, and captions or summaries.
- Use "semantic HTML" such as headings that create a hierarchal outline, appropriately using lists and paragraphs.
- Provide alternative versions of the infographic for users who cannot access the visual content fully, for example a downloadable table or text-based summary.
- Software is available that can test an infographic for use with screen readers that speak content aloud.

Ethical, Privacy and Copyright Considerations

While brevity is a key goal in infographics design, it is important to carefully avoid causing ethical problems that lead to misinterpretation, misinformation and bias.[37,38] It is also important to consider privacy issues around use of images and personal stories.[10] Be cautious about using content like images that might be protected by someone's copyright, including images generated by artificial intelligence software or online services.

Cite Sources

In a succinct and user-friendly way, tell the reader where the information you are giving them comes from. For health care providers, give them a sense of the strength of evidence and certainty of conclusions. If appropriate and with permissions, add logos of supporting institutions.

Prototype Development

Refine the design before finalizing it. Prototypes can be shown to health care expert advisors for content and to audience members to assess engagement, accessibility, comprehension and actionability.[19,39] If intending to use a screen reader for HTML or PDF versions, pilot the implementation.

4. Design Software

Table 3 lists some software that can be used to design infographics.[4,10,15,39] These tools continue to evolve rapidly. A group developed a web tool for making public health infographics.[39] One of us (JT) used Microsoft PowerPoint to make the infographic at the start of this manual. Beware copyright issues if you use an online service or other software to generate images and other content.

Accessibility. In addition to the suggestions we offer in Table 3, see Roussey (2024) for a list of software designed to help make infographics accessible (indicated in Table 3 with an asterisk).[18]

Artificial intelligence (AI). Be careful using artificial intelligence. It can be useful to help think about a topic, but the technology is still very early in development, as are guidelines about its use. Check with your educational institution or organization regarding their policies. Some authorities do not allow A.I. to be cited as a primary source or used as a co-author. Authors are responsible for the accuracy and biases of content in products they produce, regardless of their sources.[40]

Table 3. Examples of design software.

Software	
Microsoft Word*	Word processor. Use gridlines, text boxes paragraph marks and text wrap to lay out the elements before entering content. Insert images from MS Designer. Tricky to line up elements on the screen: MS PowerPoint is easier. MS Word has accessibility features.
Microsoft Designer*	https://designer.microsoft.com/home Online tool works with MS Copilot to help user make images. Free version has some limitations.
Microsoft PowerPoint*	Common presentation software that can provide basic infographic structure to which text and graphics can be added. Third party templates are available, but it is easy to lay out the elements manually for custom designs. Set paper size to letterhead, turn on gridlines and snap to grid, make text boxes and paste images, then drag them around to set them in place. Much easier for infographics design than MS Word. See extensive online self-help information.
Canva*	https://www.canva.com Popular online website that can be used to design infographics from templates. Free and paid versions.
Florence	Public health informatics tool for communicating information to the public.
Piktochart*	https://piktochart.com Online infographic design software.
Venngage*	https://venngage.com Infographics software.
Genial.ly	https://genially.com/create/infographics/ Animated and interactive infographics.
Adobe Suite*	Professional software, expensive, steep learning curve. Includes Photoshop, InDesign and Adobe Spark.
Figma	https://www.figma.com/ Low cost, steep learning curve.
Infogram*	https://infogram.com Free and paid versions.
Affinity Designer, Affinity Photo, and Affinity Publisher	Relatively inexpensive and easy to use software packages for designing on Apple computers.

*Software identified by Roussey (2024) as having accessibility design features. Other software in this table might also have accessibility features.18

5. Characteristics of Good Infographics

Experts emphasize the importance of simplicity.[15] Baxter et al. (2021) found that reviewers used these words to describe good infographics: "*clear, clean, easy to use, calm and straightforward*"; these for average ones: "*effective, clear, straightforward, accessible and easy to use*"; and these for poor ones: "*dated, overwhelming, hard to use, confusing and ineffective*".[42]

Dunlap and Lowenthal (2016), writing for design expert learners, wrote that visuals are powerful for human learning when they effectively use visual organization and structure to reflect relationships, describe how parts of the whole interact, and reveal the storyline.[2] They noted that infographic effectiveness is influenced by how pleasing it is to view, how easy it is to read, and how well it achieves the objectives. They wrote that an infographic succeeds when it "efficiently, precisely, and clearly conveys abstract ideas and complex and dense content that would otherwise require a lengthy narrative".

Butdisuwan et al. (2024) identified key design elements for successful dissemination of research infographics among health professionals, from most to least frequent:[6]

- Clear and concise content.
- Engaging visuals and graphics.
- Effective data visualisation techniques.
- Use of appropriate colour schemes and fonts.
- Incorporation of relevant charts, graphs, or diagrams.
- Attention to design principles and aesthetics.
- Alignment with the target audience's preferences and needs.
- Proper use of hierarchy and visual organisation to guide the viewer's attention.
- The consistent and cohesive visual style throughout the infographic.
- Incorporation of storytelling elements to make the information more relatable and memorable.

Lang offered this list for characteristics of good infographics:[27]

- Easily accessible.
- Appropriate for patients' needs.
- Easily understood.
- Compatible with patients' values and lifestyles.
- Compatible with other information give to patient.
- Easily remembered.
- Easily referenced.
- Visually appealing.
- Efficiently and economically prepared.

A study of infographics used to disseminate research findings found that many did not provide sufficient information for readers to fully interpret study findings.[43] Most described the population, intervention, comparator and outcomes, but many did not provide enough information on those issues. Bias risks and conflicts of interest were rarely disclosed in the infographics.

A study of the design of infographics for clinical practice guidelines found that general practitioners considered them useful.[44] However, the study also found problematic use of complex scales and technical terminology in

evidence appraisal. They recommended that infographics designers use clearer messaging for statistics and evidence appraisal.

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