

Infographics and Visual Abstracts

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The Challenge

Medical educators teach and disseminate information to learners who are often in time-pressured clinical learning environments that can limit their ability to process and understand information. Heightening this challenge is the ongoing need for learners to access, identify, and apply relevant information from a high volume of new or existing literature. Creating and using digestible visual summaries of high-yield takeaways can overcome some of these challenges. However, most educators are unaware of strategies and tools for creating and disseminating concise, high-quality visual summaries.

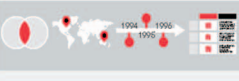






What Is Known

Infographics provide a visual representation of information, and visual abstracts are a subset of info-

graphics used to synopsise key findings from an article. Through intentional use of design elements and visual-spatial reorganization of content, readers can process complex information more easily. Visual representations are time-efficient and designed to engage the reader's visual processing capacity and decrease cognitive workload. In fact, studies have found that visual abstracts result in equivalent or increased knowledge transfer and retention when added to text.^{1,2} The use of infographics and visual abstracts on social media platforms is associated with higher engagement and Altmetric scores than the dissemination of medical literature citations alone.³ In a randomized controlled trial the use of a visual abstract resulted in articles being read nearly 3 times as often.⁴

RIP OUT INFOGRAPHICS AND VISUAL ABSTRACTS

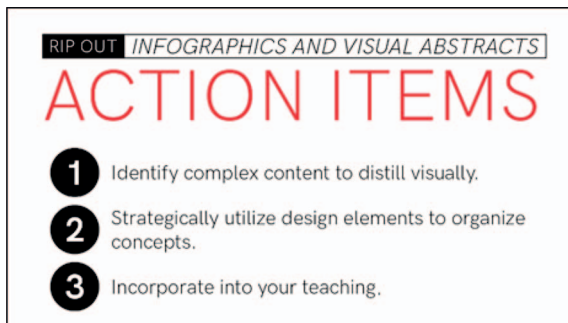
HOW YOU CAN START TODAY

	PREPARE	CREATE	OPTIMIZE	SHARE
CONTENT	<p>IDENTIFY COMPLEX CONTENT Visuals can help depict and distill: data, comparisons, processes, timelines, geographic ideas.</p>  <p>DEFINE OBJECTIVES, AUDIENCE, AND SCOPE</p>	<p>DECREASE COGNITIVE LOAD Replace large blocks of text with visuals (graphs, icons, images, flowcharts) to reframe or better represent the content for the audience.</p>  <p>ENSURE APPROPRIATENESS Ensure representation of diverse content. Remove protected health info. Address copyright issues.</p>	<p>GET FEEDBACK Use a fresh set of eyes to ensure quality.</p> <p>IS IT...</p> <ul style="list-style-type: none"> • Digestible? • Cohesive? • Clear? • Succinct? • Evidence-based? • Respectful? • Typo free? 	<p>GIVE CREDIT WHERE DUE Credit authors on the graphic itself. Cite evidence and image sources.</p> 
DESIGN	<p>CONSIDER YOUR MEDIUM Ensure appropriate dimensions.</p>  <p>SKETCH OUT LAYOUTS Organize concepts on paper before using design software.</p> <p>CHOOSE ONE SOFTWARE TO START Familiarize yourself with features, watch tutorials.</p>	<p>FIND A LAUNCHING POINT Look for templates to build on or other infographics to model after.</p> <p>LEVERAGE DESIGN ELEMENTS Use consistent design elements (fonts, colors, space, arrows, shapes, icons, etc) to organize and emphasize information.</p> <p>Hint: Less is more! Minimize number of individual fonts (1-2), colors (<5), etc used.</p> 	<p>IS IT...</p> <ul style="list-style-type: none"> • Legible (consider size, style, spacing, contrast)? • Too crowded? • Appears as intended on intended media? <p>CONSIDER FILE FORMAT Use JPG for photos, PNG for illustrations, PDF for print. Save with high resolution.</p>	<p>DISSEMINATE YOUR WORK Incorporate in your teaching.</p> 

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What You Can Do LONG TERM

1. **Create a repository of design materials.** Find and save infographics, layouts, and visual strategies to use for your next infographic(s). Look outside of medicine for a broader array of visual design ideas in other fields. Find and save resources for commercial-free fonts, stock images, icons, and color palettes. Across your work, use consistent design elements (eg, color schemes or layouts) or a logo to create a visual identity or “brand” for your teaching.
2. **Learn the advanced features of your design software or branch out into new software.** Explore beyond the basics of your chosen software (for example, Microsoft PowerPoint can be leveraged to create animations, complex diagrams, etc). Watch tutorials on advanced functions that can take your design skills to the next level. Easy-to-use software applications have different features that can make your creative process more efficient or elevate your design (eg, Canva, Venngage, Piktochart, Easel.ly, Visme). Alternatively, delve into advanced software such as Adobe Illustrator.
3. **Collaborate with others.** Input from diverse team members can enhance your graphic by providing a varied lens on content and/or visual design. Additionally, they can share the workload and help achieve timely completion.
4. **Incorporate infographics and visual abstracts into multiple aspects of your teaching.** Use visuals in other venues where learning may be enhanced with infographics or visual abstracts (eg, clinical teaching, journal club) and/or with different audiences (eg, faculty, interprofessional team). Consider sequencing as well: Would infographics be best used to prime learners prior to or after the teaching session, or used within the teaching session? Think creatively about how to use visuals in teaching (eg, after a small group teaching session, ask learners to elaborate their takeaways by sketching out their own draft infographics).
5. **Expand use for program branding internally and externally.** Use infographics for your recruitment website and share on social media. Create visual abstracts to highlight a recent publication or your program’s scholarship.



References and Resources for Further Reading

1. Martin LJ, Turnquist A, Groot B, Huang SYM. Exploring the role of infographics for summarizing medical literature. *Health Profess Educ.* 2019;5(1):48–57. doi:10.1016/j.hpe.2018.03.005
2. Hughes AJ, McQuail P, Keogh P, Synnott K. Infographics improve comprehension and recall at the orthopaedic journal club [published online ahead of print November 16, 2020]. *J Surg Educ.* doi:10.1016/j.jsurg.2020.10.012
3. Oska S, Lerma E, Topf J. A picture is worth a thousand views: a triple crossover trial of visual abstracts to examine their impact on research dissemination. *J Med Internet Res.* 2020;22(12):e22327. doi:10.2196/22327
4. Ibrahim AM, Lillemoe KD, Klingensmith ME, Dimick JB. Visual abstracts to disseminate research on social media: a prospective, case-control crossover study. *Ann Surg.* 2017;266(6):e46–e48. doi:10.1097/SLA.0000000000002277



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