

Health Literacy: How Visuals Can Help Tell the Healthcare Story

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Herb, a 66-year old general contractor, had a major heart attack five years ago. His doctor performed an emergency coronary angiography to examine the blood vessels and chambers of his heart. After the procedure, Herb's doctor gave him a simple line drawing of the heart and arteries. She then coloured in where each artery was blocked and wrote alongside how much each was occluded.

Seeing so clearly what was wrong, Herb readily agreed to participate in a cardiac rehabilitation program and change his diet and exercise habits. He did so well that he was asked to speak with other patients who had just been diagnosed with cardiovascular disease. To Herb's surprise and disappointment, not one of the more than 100 people he spoke with had ever been given a 'heart picture' like his. Herb often hears people say how these types of drawings could have helped them better understand their diagnosis and treatment recommendations.¹

Patients and their family members often receive an overwhelming amount of health information. The content may be unfamiliar, complicated, confusing, or perhaps even frightening. The format can include numerous multi-syllabic words, dense text, unreadably small fonts, and numbers presented as fractions or decimals or percentages. Adding to these problems, patients and their families often receive health information at times when they feel sick, distracted, and are not at their learning best.

Healthcare providers may not always recognize these problems. They know the content is important, but problems arise when there are mismatches between the difficulty of the information and patients' interests or learning skills. This is where health literacy comes in.

WHAT IS HEALTH LITERACY?

Health literacy is often defined as the 'degree to which individuals have the capacity to obtain, process, and understand basic health information and services needed to make appropriate health decisions.'² A shortened definition in common use is that 'health literacy is the ability to read, understand, and act on health information.'³

The author believes that health literacy extends beyond these definitions and is a shared responsibility between patients (or anyone on the receiving end of health communication) and health providers (or anyone responsible for communicating health information). Health literacy happens when patients and providers each communicate in ways the other can understand (*Figure 1*).

WHY DOES HEALTH LITERACY MATTER?

Health literacy matters because patients and their family members need to understand health information so they can, or are willing to, follow it. For instance, Herb needed to fully understand why he had

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Health Literacy — When Patients and Providers Truly Understand One Another

Figure 1. Illustration by Mark Tatro, Rotate Graphics (www.rotategraphics.com)

to make significant lifestyle changes after his heart attack. Without this understanding, he might not have complied with all his doctor's dietary and exercise recommendations.

Beyond instructions like those Herb had to follow, patients also need to learn to take medications correctly, recognize side effects and know what to do if they occur, and understand why they should follow public safety advice. Health information must be communicated clearly and simply in order for these actions to happen.

Patients and their family members often struggle to understand health information. In part, this may be due to learning challenges, including:

- **Literacy.** A lot of health information is in written formats like brochures, fact sheets, and websites. To understand these materials, readers need literacy skills, defined as 'using printed and written information to function in society, to achieve one's goals, and to develop one's knowledge and potential.' But almost half of American adults lack sufficient literacy skills to understand and use complex prose (continuous text), document (non-continuous text such as maps, charts, and forms), and quantitative (numbers-based) materials.⁴ The figures are comparable in other developed nations around the world.⁵
- **Age.** As people age, many factors can interfere with health understanding. One factor can be due to declining literacy skills. Another may be chronic and acute health problems which affect people's ability to see, hear, or remember. Often these health problems require one or more medications which, even if taken correctly, can decrease concentration or increase confusion. Beyond any physical problems, older adults may also be struggling with difficult emotions and lifestyle changes. It can be difficult to learn new health information when transformed from the family's caretaker to the person being taken care of.
- **Disability.** When people have disabilities that interfere with seeing, hearing, or remembering, their receptive (taking in) and expressive (giving out) communication skills are affected. This may happen gradually, or all at once. Either way, it can impact on a person's ability to understand. For example, someone who gradually loses her hearing may not, at first, realize how much information she is missing. Even with a hearing aid, the device may not adequately compensate for her hearing loss.

WHY PEOPLE HAVE TROUBLE UNDERSTANDING HEALTH INFORMATION

- **Language.** This refers to words and terms. When people learn a second language, it can take between two years and a lifetime to become fluent. Without fluency, people may be unable to fully participate in important 'how' and 'why' healthcare conversations.
- **Culture.** Culture provides a context or framework for people to understand concepts. This is not only an issue for people from other lands, but can also be a factor for people from the same country or region who do not share a similar worldview.
- **Emotion.** In addition to all the other factors that affect health understanding, people's emotions affect how they learn. It is more difficult to concentrate and comprehend when feeling scared, sick, or in pain.

HOW PEOPLE LEARN

Beyond the literacy, age, disability, language, culture, and emotional factors that make learning more difficult, health information can also be hard because it is usually communicated in writing or speech. Yet this is not always how everyone learns. Instead, people might be:

- **Auditory learners,** who learn best when speaking and listening. They might benefit from one-on-one and group conversations, and media such as the radio or CDs.
- **Kinesthetic learners,** who learn by touching and manipulating. This can be practising on models or real objects, and trying new techniques or exercises.
- **Visual learners,** who understand more fully when reading or seeing information. This not only includes text, but also diagrams, sketches, photographs, maps and other visual aids.
- **Mixed learners,** who learn from a combination of methods. Their learning needs and preferences may change depending on the subject and situation.

HOW VISUALS CAN HELP TELL THE HEALTHCARE STORY

The healthcare story is an important one. It includes essential information about how to access and pay for treatment, follow medical instructions, provide consent, or recognize emergencies and know what to do when they occur. In order to do all this, health information must be completely and correctly understood, even when the content is difficult or people have trouble learning. This can truly be a matter of life and death.

Visuals can help. They not only are interesting and attractive to look at, but can also reinforce the written or spoken health message. Such examples include:

Layout and design. Healthcare professionals often write their own flyers, instruction sheets, and other patient education materials. While the content is likely to be excellent, these materials can be hard to read because of poor layout and design. For instance, there may be lots (and lots) of unreadably small text crammed onto one page. The layout may be so visually unappealing and uninviting that, even if a person could, he or she might not want to read this document. Visuals can help correct these and many other layout and design flaws.

Pictographs and cartoons. Visuals need not be elegant art. Often, a simple line drawing or cartoon will do. Houts has researched the use of pictographs (defined as simple line drawings that illustrate ideas or actions), and shows that pictographs can aid learning and recall, even with people who have very limited literacy skills.^{6,7} Delp and Jones studied the role of cartoons in emergency room instructions and found that these illustrations are an effective way to convey information.⁸

Pain scales and other visual tools. Visuals need not just be within text, sometimes, they are stand-alone communication tools. A visual pain scale, for instance, is a way for patients to express how much they hurt. Because they are primarily visual, these tools are effective regardless of a patient's literacy or language skills. The pain scale developed by Wong is an example (*Figure 2*).

Maps, genograms, and other diagrams. Health information is not always linear, often it is complex and takes twists and turns. Visuals can help show these interrelationships. One example is a map which shows locations throughout a facility or area. Another is a genogram (visual diagram) which health professionals draw to depict a family's history. Genograms include specific symbols to represent marriage, death, birth, and other landmark events.



Figure 2. From Hockenberry MJ, Wilson D, Winkelstein ML: Wong's Essentials of Pediatric Nursing, ed. 7, St. Louis, 2005, p. 1259. Used with permission. Copyright, Mosby.

Forms and other interactive documents. Forms (sometimes referred to as reading-to-do) are different from straight text (reading-to-know) in that readers are expected to take some sort of action. This may be filling in blanks, checking off boxes, or choosing numbers on a rating scale. Like other materials, forms are often written by well-intentioned health professionals who are not knowledgeable about document design. They may not be aware how much visuals can help readers navigate through, and successfully complete forms.

Health literacy is bigger than any one person, programme, or profession. As a visual artist, you can help clinicians tell the healthcare story. Ways in which this can be done include:

- **Teach health professionals how to draw simple sketches.** There is no reason to expect that health professionals either know how to draw pictures or feel confident doing so. You can help by teaching them some basics of drawing.

I often do this in my health literacy workshops. After presenting what health literacy is and why it matters, I focus on communication strategies. When I discuss pictographs, I might introduce this with a dose of humour, asking 'Who here hates to draw?' Invariably, almost all hands are raised. Then I show how to draw a simple 'stick figure' and give people time to practice. After a few tries, they are almost always able to at least convey movement and position. While participants do not leave these sessions as great artists, they gain a greater appreciation of the power of pictures and how to incorporate them into patient teaching.

- **Create handouts for health professionals to draw on.** Not all health professionals have the time, interest, or talent to draw, and the information may be too complex to simply convey. Visual artists can help by creating handouts that health professionals can use. One example is the heart picture that Herb's cardiologist used: the doctor only needed to colour in his problem areas and write simple text alongside.

Orthopaedics is another situation in which visual hand-outs can be helpful. My friend tore her knee ligament when skiing. While this injury was likely quite routine for local hospitals, it was anything but so for my friend. Her well-intentioned orthopaedic surgeon did his best to explain the surgery she needed. He even sketched a picture of her knee. But the problem was that the surgeon really could not draw, at least not well enough to get his point across. In this instance, he could have conveyed his point more clearly if he had a handout (not just blank paper) to sketch on.

Visual artists can help by creating handouts specific to a medical practice or facility, or by recommending suppliers who produce high-quality 'tear sheets' of medical illustrations.

- **Collaborate on projects.** Collaborations between health professionals and visual artists are often more effective than working alone. For example, they can work together on 'how-to' discharge instructions. While the health professional is the 'content expert' who knows all the tasks a patient must do, the artist can make these directions clearer by illustrating key points. Together, they can add simple wording next to each instruction and provide check-off boxes for patients to mark when each task is completed.
- **Recommend good places to get clip art.** Many of my health literacy colleagues ask where to get high quality, low cost clip art. Over the years, I hear mostly the same few recommendations.

HOW YOU CAN HELP
TELL THE
HEALTHCARE STORY

Visual artists are more likely to know resources and can help by keeping health professionals up-to-date about good clip art sources.

CONFIRM THAT PATIENTS UNDERSTAND

No matter how well presented material is or what excellent content it has, the job is not complete until patients and their family members confirm that they understand. This can be assessed on a small or large scale. For instance, you can confirm understanding on a one-to-one basis by asking individuals open-ended questions such as, 'I want to make sure I drew this correctly. When you see this picture (be specific), what does it mean to you?'

When materials are designed for a large audience, you can assess understanding through field-testing. This means asking groups of people who represent your intended audience (in terms of literacy and learning skills), how they understand and would use the information. You can also ask about specific pictures and confirm that others see them as acceptable, respectful and appealing.

When you test materials, divide your resources (time and money) in half so you can test twice. Test the first time on a completed draft to find out what works and what does not, then make all the necessary changes. Test a second time to make sure you did not introduce any new problems. Doing so, you confirm that your visuals indeed help patients and their family members to understand the whole health-care story.

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