Help improve patient outcomes through patient education

Create a better patient experience by using innovative HP technology with multimedia content and 3D animation.

Based on whitepaper by:
Robert Perls, M.S.,
SVP Sales and Marketing,
Visual Health Solutions,
October, 2016

The interactive and rich multimedia 3D animation capability of Sprout by HP is currently being used to engage patients with dementia, patients in rehabilitation facilities, and pediatric patients and their families.

Patient Nexus

Visual Health Solution's retrospective analysis of health education and healthcare quality literature documents the superiority of 3D animation and other multimedia content over text-based education in producing better patient experiences.

Patient engagement can mean improved outcomes

Long considered the holy grail of many healthcare quality initiatives, better patient engagement can increase comprehension, improve compliance, and assist in informed consent. Anxiety can be reduced and outcomes improve when patients are more fully engaged in their own healthcare journey—a concept that combines a patient's knowledge, skills, ability, and willingness to manage their own healthcare with content, technology, and other resources provided by the healthcare organization.

In their article "What the evidence shows about patient activation"[1], Hibbard and Greene review available evidence of the contribution that patient activation—the skills and confidence that equip patients to become actively engaged in their healthcare—makes to health outcomes, costs, and the patient experience. The focus on activation and engagement rather than compliance recognizes that patients manage their health on their own the vast majority of the time, making decisions daily that affect their health and the cost of care. The body of evidence linking patient activation with health outcomes, patient experience, and healthcare costs has grown substantially over the past decade, bolstered by anecdotal stories that patients improve when their experiences are positive. When patients feel their overall well-being is tended to and their individual needs are valued, not only do they feel better, but their experience can improve.

Why might that be? According to Hibbard and Greene, today's innovative healthcare delivery systems are measuring patient activation to help improve and individualize patient care and strengthen the patient's role in helping improve outcomes. They are improving patient care primarily by tailoring coaching, education, and care protocols to patients at different levels of engagement or activation. In an earlier study[2], Hibbard and Greene conclude that patients are more likely to engage in more preventative, healthy behaviors when they have the knowledge, skills, and confidence to manage their own health and healthcare and these behaviors help improve health outcomes.

Patient education and patient family outreach are commonly used techniques to increase patient engagement. Both the patient and their family must understand why medical intervention is necessary, the scope of the medical intervention, and possible complications from the medical intervention, as well as the intended outcome. Considering the challenges of young, elderly, or under-educated patients, families often translate instructions provided by medical care providers for the patient and themselves.

Traditionally, patient education is provided via text-based media or through verbal explanations. Both techniques have efficacy shortcomings when used in isolation. The advent of e-Health initiatives has integrated medical records, personal patient records, patient education, and informed consent within an electronic health records system This has done little to improve comprehension, and without out verbal instruction, has been cited as a point of frustration and confusion for many patients. Processing web-based health information can be difficult, especially for patients with low health literacy[3]. As a result, patients, families and personal caregivers are not being equipped with sufficient information to make positive and engaging self directed decisions about care. Health literacy remains a challenge area and an opportunity for helping improve engagement and patient care outcomes.

The more realistic and engaging the animation, the more patients understand, learn, and remember.

The HP Elitebook x360 is designed for interactive and rich multimedia content display, creating both an optimal presenter and viewer experience.

The superiority of multimedia content and 3D animation

One way of addressing health illiteracy, and combating the complexity of medical information is through the use of multimedia content. Not only is animation preferred for communicating medical information, but the more engaging the animation, the better the understanding. In fact, 3D animations can be more effective than real-time drawings[4] and are a powerful tool for engaging patients. In a 2002 study from Australia[5], it was found that the understanding of a surgical procedure and possible complications, along with the degree of trust and reduction in anxiety, was significantly better after watching computer animation rather than reading text.

Presenting health information in an audiovisual format, such as animation, is expected to help improve understanding among low health-literate audiences. A 2015 study by Mepplelink[3] showed that among people with low health literacy, spoken messages helped to improve recall and attitudes substantially compared to written messages and when combined with spoken text, the animations significantly improve recall. In fact, when exposed to spoken animations, people with low health literacy recall the same amount of information as their high health literate counterparts. In conclusion, the authors found that spoken animation is the best way to communicate complex health information to people with low health literacy. Because animations do not negatively influence high health literate audiences, it is concluded that information adapted to audiences with low health literacy are suitable for all. Reinforcing the Mepplelink study, Calderon conducted a randomized controlled trial[6] testing the effectiveness at improving diabetes health literacy of a Spanish-language animation compared to easy-to-read diabetes information from the National Institute of Diabetes and Digestive and Kidney Diseases. He concluded that the positive effect on Diabetes Health Literacy Survey scores suggests that animation has great potential for improving diabetes health literacy among Latinos having limited functional health literacy.

Multimedia and 3D animation patient education helps improve outcomes

As reimbursement in the U.S. becomes increasingly tied to outcome metrics, the push to improve patient experiences through better patient engagement becomes paramount. Research data confirms what many healthcare professionals intuitively knew—that multimedia content, including 3D animation, is better than text-based content with static images. The well-documented connection between patient engagement and patient outcomes means that highly engaging patient education content is integral to improving the patient experience. It is no longer enough to hand a patient a written brochure and hope they get it.

1 Hibbard, J. and Greene, J. (2013). What the evidence shows about patient activation: better health outcomes and care experiences; fewer data on costs. Health Affairs, 32, no. 2, pp. 207-214. doi: 10.1377/hlthaff.2012.1061Hibbard, J. and Greene, J. (2010).
2 Hibbard, J. and Greene, J. (2010). What is quality anyway? Performance reports that clearly communicate to consumers the meaning of quality care. Medical Care Research and Review, 6/2010 vol. 67: pp. 275-293. doi: 10.1177/1077558709356300.
3 Mepplelink, C. (2015). The effectiveness of health animations in audiences with different health literacy levels: an experimental study. Journal of Medical Internet Research, vol. 17(1). doi: 10.2196/jmir.3979.
4 Cleeran, G. et. al. (2013). Role of 3D animation in periodontal patient education: a randomized controlled trial. Journal of Clinical Periodontology, 41(1). doi: 10.1111/jcpe.12170.
5 Hermann, M. (2002). 3-dimensional computer animation – a new medium for supporting patient education before surgery. Acceptance and assessment of patients based on a prospective randomized study – picture versus text. Der Chirurg; Zeitschrift fur Alle Gebiete der Operativen Medizen, 73(5), pp. 500-507. doi: 10.1007/s00104-001-0416-y.
6 Calderon, J. (2014). Improving diabetes health literacy by animation. The Diabetes Educator, 40(3) pp. 361-372. doi: 10.1177/0145721714527518.

Sign up for updates
hp.com/go/getupdated

4AA6-9324ENW, January 2017