



IMPROVE PATIENT EXPERIENCE AND OUTCOMES THROUGH ENGAGING CONTENT USING MULTI-MEDIA AND 3D ANIMATION

Patient engagement is the holy grail of many quality initiatives. If patients can be more fully engaged in their healthcare, comprehension increases, compliance goes up, informed consent is improved, anxiety is reduced, and outcomes improve.

Over the last ten years much research has bolstered anecdotal stories that patients improve when their experience with healthcare organizations are positive. When they feel their overall well-being is tended to and their individual needs are valued, not only do they feel better, but their outcomes improve. Why might that be? “Innovative delivery systems are measuring activation to improve and individualize patient care and to strengthen the patient’s role in improving outcomes. They are improving care principally by tailoring coaching, educating, and implementing care protocols to patients at different levels of activation (engagement)(1).”

An earlier study concludes that “patients with the knowledge, skill, and confidence to manage their health and healthcare are more likely to engage in more:

- Preventive behaviors
- Healthy behaviors
- Disease specific self-management behaviors
- Health information seeking behaviors

...and such behavior improves health outcomes(2).”

One commonly used technique to increase patient engagement is through patient education and patient family outreach efforts. Both the patient and the family must understand why medical intervention is necessary, its scope, complications, and intended outcomes. Given the challenges of elderly patients and those with low levels of formal education, the family is often translating medical providers’ instructions for the patient and themselves.



Traditionally, patient education has been communicated via text-based media or through verbal explanations repeated by the same health care provider ad-indefinitum. The efficacy of both techniques has been long questioned. In addition, with the advent of eHealth initiatives it is now possible for medical records, personal patient records, patient education, informed consent, and outcomes metrics to be posted on-line or integrated within an electronic medical records system and personal health records, yet verbal education cannot be integrated. In addition, electronic integration of education with patient records generally qualifies as “meaningful use” under the ACA definitions, which can enhance revenue generation.

The superiority of animation and other multi-media tools versus text-based learning

An interesting study from Austria affirms the superiority of animation over text, supporting the conclusion that engaging patients through animation and other multi-media education content improves patient understanding, retention, and engagement:

“Understanding of and subjective knowledge about the surgical procedure and possible complications, the degree of trust in professional treatment, the reduction in anxiety and readiness for the operation were significantly better after watching the computer animation than after reading the text(3)”.

According to this seminal 2015 study(4), “Processing web-based health information can be difficult, especially for people with low health literacy. Presenting health information in an audiovisual format, such as animation, is expected to improve understanding among low health literate audiences.” The aim of his paper is to investigate what features of spoken health animations improve information recall and attitudes and whether there are differences between health literacy groups.

Low health literate patients gain even more

The results show that among people with low health literacy spoken messages about colorectal cancer screening improve recall and attitudes substantially compared to written messages. When combined with spoken text, they (animations) significantly improve recall. When exposed to spoken animations, people with low health literacy recall the same amount of information as their high health literate counterparts, whereas in all other conditions people with high health literacy recall more information compared to low health literate individuals. For people with low health literacy, positive attitudes mediated the relationship between spoken text and the intention to have a colorectal cancer screening. In conclusion, the authors found that spoken animation is the best way to communicate complex health information to people with low health literacy. “As animations do not negatively influence high health literate audiences, it is concluded that information adapted to audiences with low health literacy suits people with high health literacy as well(4).”



Of particular interest is the following prospective randomized controlled trial where the authors tested the effectiveness of a Spanish language animation version at improving diabetes health literacy, compared to “easy to read” diabetes information from the National Institute of Diabetes and Digestive and Kidney Diseases. They measured functional health literacy by the Short Test of Functional Health Literacy in Adults. Diabetes health literacy was measured by the Diabetes Health Literacy Survey (DHLS). Their conclusion is that... “The positive effect on DHLS scores suggests that animation has great potential for improving diabetes health literacy among Latinos having limited functional health literacy(5).”

This study reinforces the Mepplelink study cited above that animation with spoken words in the patient’s native language works particularly well in patient populations with relatively low health literacy levels.

Also found in educational research theory are many studies looking at medical student information retention which confirms the patient education study results. The conclusion of a study from the journal Plastic and Reconstructive Surgery concludes by stating: “A prospective, randomized, blinded study comparing the educational efficacy of a surgical textbook to digital animation demonstrates that, in novice learners, digital animation is a more effective tool for learning. Test takers found digital animation to be the superior educational medium(6).”

3D Animation and multi-media patient education content improves outcomes

As reimbursement in the United States becomes tied to outcomes metrics, the push to improve patient outcomes through fuller patient engagement is omni-present. The connection between patient engagement and patient outcomes is well documented. Highly engaging patient education content is becoming integral to improving the overall patient experience. A plethora of data exists that confirms what many health care professionals know intuitively: that multi-media content, including 3-D animation education, is superior to text-based or static image education content. When culturally appropriate languages and images are added, the efficacy is multiplied. Retention increases, compliance increases, and better understanding by the patient and their family lead to better patient engagement and improved outcomes. The days of handing a patient a written brochure hoping they “get it” should be long gone.

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