



Gamification for Healthcare Improvement:

Maximizing motivation and engagement for change

Emerging research on large scale change tells us that *commitment-based* strategies may be more sustainable and effective than *compliance-based* (mandated or financially incentivized) strategies.¹ If clinicians are connected, engaged around a shared purpose, and motivated in a meaningful way, mindset shifts can lead to behaviour change.² Building strong engagement and motivation while working towards a shared goal are some of the foundational traits on which the gaming industry is built.³

We know that innovation can arise from experimentation and ‘freedom to fail’ – something that is inherent in most game play.^{3,4,5,6} Games lend themselves easily to crowdsourcing^{4,5} and can build social connectivity among groups;³ a key factor deemed necessary for large-scale change.² Some believe that gaming principles can even be applied to massive, complex, real-world problems by leveraging the power that games have to make us happy, to foster strategy and creative thinking, to make difficult activities rewarding, and to motivate us to strive towards ‘epic wins’.³

Gamification is a term used to describe the use of game design elements in non-game contexts.⁷ Gamification elements can include game mechanics (eg. points, badges, leaderboards, rewards) and game experience design (eg. countdown, storyline, discovery, quests and challenges, levels). The successful application of game elements has been reported within many non-gaming industries, including retail;^{4, 5, 8, 9} education;^{5, 10, 11, 12} occupational health and safety;^{4, 13} and workplace improvement.^{3, 4, 14, 15} In health care, gamification has been used to influence personal health behaviour^{16, 17, 18, 19} and to promote employee training and procedural learning.^{4, 5, 20, 21, 22}

In British Columbia, we have begun testing gamification principles within provincial health improvement campaigns, with encouraging success. During a **campaign** to engage clinicians around improving sepsis care within emergency departments, we had unprecedented commitment to take part in the voluntary activities and engagement remained high throughout the 150 days of the campaign. This campaign resulted in a significant reduction in severe sepsis mortality within one region during the period of the campaign, and results have been sustained to date. Use of gamification in this context worked well, as the demographic included emergency department staff with established teams and youthful energy, who were accustomed to the rapid learning and feedback cycles inherent with game play and were open to transparent peer comparisons.

Applying game elements to the context of health improvement requires careful planning and strategy. The playful aspect of games can seem inappropriate within a serious context. The application of external rewards, such as increasing status, can change behaviour in the short term, but there is a risk that our own internal motivators could diminish or disappear if the external influence is subsequently removed.^{23, 24} Connecting a voluntary gamified activity to shared values and important meaning, however, can potentially produce autonomous, internalized behaviours, as it becomes intrinsically connected to values or goals the player already holds.²⁴

We will be testing the application of game elements to clinical health improvement as we support our provincial health system in change – we’d love to connect with others who share the same interests and perhaps establish an informal network to share strategies and understanding of these techniques.

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