Feature Education Innovation
GRIDLOCKED: AN EMERGENCY MEDICINE GAME AND TEACHING TOOL

Reference to abstract:

https://www.cambridge.org/core/journals/canadian-journal-of-emergency-medicine/article/lo13-gridlocked-an-emergency-medicine-game-and-teaching-tool/0F31530DB6125F6173AEEF5A0F4DED10
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Project website: https://www.gridlockedgame.com/

Description of the Innovation

Problem

Management of patient flow through the Emergency Department (ED) is a crucial skill for Emergency Physicians to master. Much like resuscitation and multi-patient scenarios, ED management is a skill more suited to learning through real-life or simulation-based education. Unfortunately, it's generally not feasible to give a trainee the full experience of managing an entire ED in a real-life setting until quite late in their training, if at all. The more typical arrangement is for trainees to manage a subset of emergency patients, while the supervising staff oversees the department. Unfortunately, this tactic falls short in exposing trainees to the true pressures involved in this task, and Emergency Medicine (EM) residents will graduate to a staff position without ever having become proficient in this skill. Simulation-based approaches would be ideal, but are prohibitively resource-heavy for most programs. GridlockED was developed to address these challenges by creating a simulation-type experience with real-life patient scenarios and barriers to patient flow, such as bed-blocks, staffing shortages, and resource limitations. We designed GridlockED as a collaborative, serious board game that would allow EM learners to experience the role of managing the ED, and to experiment with different strategies to optimize patient flow.

Initial Prototype Development

Drs. Teresa Chan and Mathew Mercuri originally brainstormed the idea based on research they had just completed (read the papers here and here). GridlockED was subsequently prototyped and developed further at

the Niagara Regional Campus of McMaster University by a group of undergraduate medical students interested in EM, under the guidance of Dr. Teresa Chan. Once the bare bones of the game had been created, along with a prototype, the game was improved via a series of Plan-Do-Study-Act cycles with McMaster trainees and Hamilton Health Sciences/St. Joseph's Hamilton staff. Over the next 18 months the game was played by a variety of undergraduate medical students, EM residents and staff physicians, non-physician scientists, and nurses. Observations and feedback were incorporated into the game until the final version was developed.

Resources

The development process required a lot of person-hours, but more tangible resource requirements were minimal. The original game board was drawn on Bristol board (actually, the very first design was drawn on a napkin), with game cards printed on regular paper, and game pieces bought from a dollar store. Over the months the components have been upgraded through the time, effort, and financial investments of several wonderful collaborators. We originally recruited three high school students with graphic design talents to create the templates for the game board and cards. From there, our talented team used an online infographic editor and database to produce the final game and its components.

Education Theories/Frameworks

GridlockED was developed based on information from a comprehensive literature review. From our readings, we found that learners really enjoy learning through serious board games. Serious games are a genre of games wherein the point of the game is to learn a specific teaching point, rather than to engage in fun; Fun is allowed to be, of course, a byproduct of the game. Within medicine, there are several reports of using this strategy for learning a variety of information, but GridlockED will be the first that targets systems learning and skill development, rather than tangible knowledge (e.g. hand washing).

Lessons Learned

The most important lesson we've learned is the importance of seeking input from a wide range of healthcare professionals and non-healthcare gaming enthusiasts. With each formal and informal trial group valuable feedback was gleaned and incorporated into gameplay and design. It was this feedback that guided the game's progression from a vague concept on a napkin to the exciting innovation that exists today!

BOTTOM LINE:

Learning how to manage patient flow through the Emergency Department is a crucial skill for Emergency Medicine trainees to develop, however, an effective teaching approach has been difficult to establish. GridlockED was designed to tackle this challenge by integrating simulation-based learning and collaboration through a serious, educational, yet entertaining board game. GridlockED allows trainees to improve their patient management skills by applying strategies to a simulated Emergency Department that realistically emulates the wide range of patient presentations, unpredictable nature of each shift, challenges of resource limitations, and importance of prioritizing the most acute patients. Feel free to contact our team (gridlockedgame@gmail.com) if you have questions. Also check out our website (www.gridlockedgame.com) to read more about our exciting innovation!

References and Recommended Reading

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