GERIATRICS EDUCATION AND INNOVATION (GERI) CORNER

The University of California San Diego Geriatrics Escape Room: A Didactic Innovation

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BACKGROUND

The older adult population is growing disproportionately to the number of geriatricians. To bridge this care gap, it is imperative that geriatric specialty recruitment efforts are prioritized, and all clinicians, not just those specializing in geriatric medicine, learn to effectively care for older adults. The literature suggests that early exposure to geriatric medicine increases comfort with geriatric medicine principles and positively influences career choice toward geriatric medicine.[1,2] Prior studies show only half of graduating family medicine (FM) and internal medicine (IM) residents feel very prepared to care for older adults, with perceived training gaps revealed through graduating IM resident focus groups.[3] We believe innovative didactics are one way to expand early engagement with geriatric medicine concepts.

Gamification, an increasingly popular approach in graduate medical education, promotes active learning and engagement.[4] Escape rooms are a popular form of entertainment, and we identified an opportunity for using this game space for innovative geriatric medicine education. We designed the University of California San Diego (UCSD) Geriatrics Escape Room to improve resident exposure to geriatric medicine, introduce the 4Ms Framework of the Age-Friendly Health Systems (AFHS) initiative (What Matters, Medication, Mentation, and Mobility), and increase resident interest in the specialty. While a few medical education escape rooms have recently been described, this is the first known Geriatric Medicine Escape Room.

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METHODS

An escape room is a series of connected puzzles, often housed in a physical space. Participants complete one set of puzzles to obtain codes and passwords that open the next set of puzzles, eventually reaching the final goal. Often, the final goal is to "escape" the room. Escape rooms are interactive, have an overall theme, and tell a story. In the UCSD Geriatrics Escape Room, the story began with residents being tasked to complete a home visit for a fictional patient, who required discharge follow-up after hospital admission for a cerebrovascular accident. To help the patient "escape" from her current dangerous living situation, residents had to adequately address her care needs across the 4Ms. The final goal was to complete the California Residential Care Facilities for the Elderly (RCFE) form, which required compilation of patient information obtained from the various puzzles. Without addressing all 4Ms for the fictional patient, residents were unable to complete the RCFE form or identify the safest future living situation to help her "escape."

All UCSD IM residents enrolled in the residency program in the 2018–2019 academic year participated. Each team consisted of six to eight residents to ensure appropriate engagement and contact with content. Prior to entry into the escape room, teams were provided with general escape room instructions and a discharge summary to set the scene. Chief medical residents, all of whom were familiar with the escape room puzzles, were available to answer questions during the 90-minutes allotted inside the escape room. A geriatric medicine attending conducted the post-escape room debrief. The 30-minute debrief included explanation of the RCFE form and how it relates to the 4Ms of AFHS, other geriatric medicine principles, and time for questions about specific puzzles. The entire activity was completed in 2 hours, set up in small classrooms, and conducted during program-protected didactic time. The only room requirement was a computer with Internet access. The puzzles all related to geriatric medicine, but varied by media type, teaching topic, materials used, and difficulty (Supplementary File S1). Snapshot puzzle explanations are detailed in Figure 1.
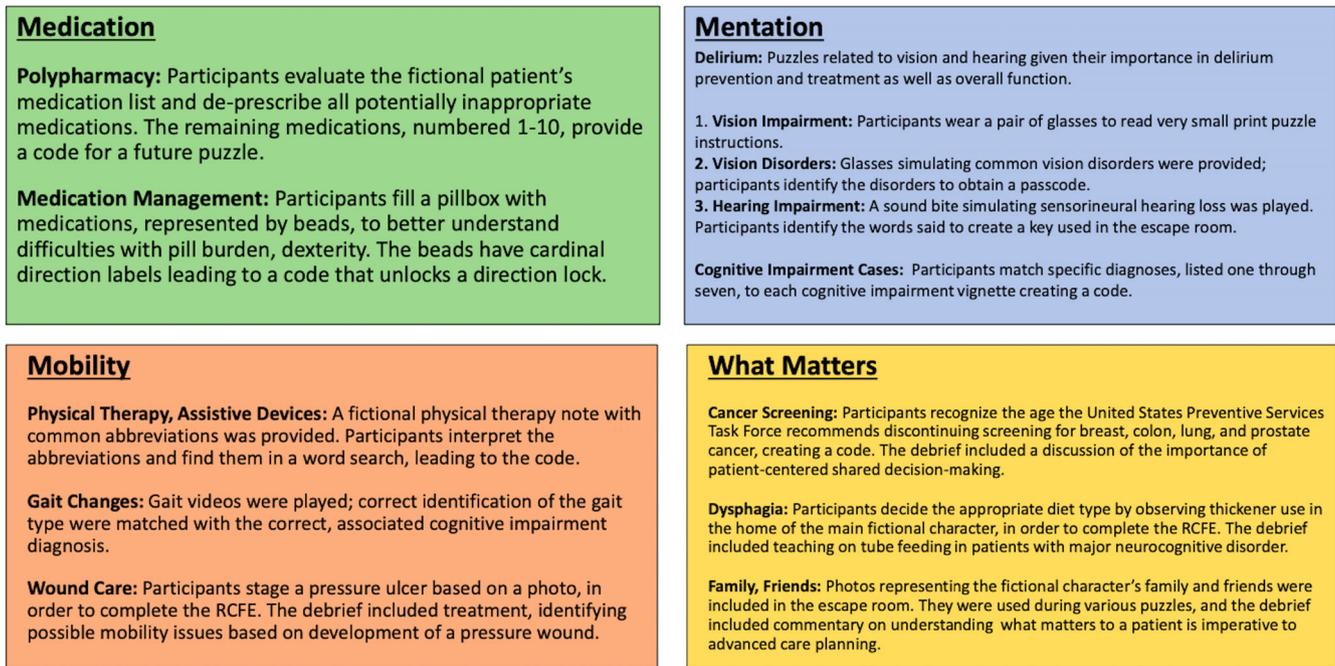
Medication

Polypharmacy: Participants evaluate the fictional patient's medication list and de-prescribe all potentially inappropriate medications. The remaining medications, numbered 1-10, provide a code for a future puzzle.

Medication Management: Participants fill a pillbox with medications, represented by beads, to better understand difficulties with pill burden, dexterity. The beads have cardinal direction labels leading to a code that unlocks a direction lock.

Mentation

Delirium: Puzzles related to vision and hearing given their importance in delirium prevention and treatment as well as overall function.

1. **Vision Impairment:** Participants wear a pair of glasses to read very small print puzzle instructions.
2. **Vision Disorders:** Glasses simulating common vision disorders were provided; participants identify the disorders to obtain a passcode.
3. **Hearing Impairment:** A sound bite simulating sensorineural hearing loss was played. Participants identify the words said to create a key used in the escape room.

Cognitive Impairment Cases: Participants match specific diagnoses, listed one through seven, to each cognitive impairment vignette creating a code.

Mobility

Physical Therapy, Assistive Devices: A fictional physical therapy note with common abbreviations was provided. Participants interpret the abbreviations and find them in a word search, leading to the code.

Gait Changes: Gait videos were played; correct identification of the gait type were matched with the correct, associated cognitive impairment diagnosis.

Wound Care: Participants stage a pressure ulcer based on a photo, in order to complete the RCFE. The debrief included treatment, identifying possible mobility issues based on development of a pressure wound.

What Matters

Cancer Screening: Participants recognize the age the United States Preventive Services Task Force recommends discontinuing screening for breast, colon, lung, and prostate cancer, creating a code. The debrief included a discussion of the importance of patient-centered shared decision-making.

Dysphagia: Participants decide the appropriate diet type by observing thickener use in the home of the main fictional character, in order to complete the RCFE. The debrief included teaching on tube feeding in patients with major neurocognitive disorder.

Family, Friends: Photos representing the fictional character's family and friends were included in the escape room. They were used during various puzzles, and the debrief included commentary on understanding what matters to a patient is imperative to advanced care planning.

Figure 1. The UCSD Geriatrics Escape Room puzzle descriptions. Categories adopted from the Age-Friendly Health Systems Initiative.

In addition to the escape room activity, participants also completed an optional, brief anonymous pre- and post-escape room survey (Supplementary File S2). The goal was to obtain feedback, identify interest, and determine educational impact.

RESULTS

A total of 101 IM residents (PGY1-3) completed the escape room. Prior to this experience, 60% had participated in any kind of escape room. Sixty-eight residents (67%) filled out the pre-escape room survey. Only 1% of these residents reported feeling "comfortable" filling out a California RCFE, which is a form required by the state for older adults residing in assisted living facilities, memory care, and continuing care retirement communities. Of the 40 residents who completed the post-escape room survey, 56% were interns and 44% were junior residents. After the escape room, 63% reported feeling "comfortable" or "very comfortable" with the RCFE form. All responded (100%) that the escape room helped improve their geriatric medicine knowledge and they would recommend the escape room to others. In the free-response section, participants reported that this activity helped them with medication de-escalation, gait identification, physical therapy note interpretation, and dementia diagnosis. Puzzles focused on mobility were most commonly cited as helpful. Other qualitative responses included, "fun way to learn about the field and…about how to better care for geriatric patients," and "enjoyable and educational." Multiple residents commented this was the best didactic of their academic year.

DISCUSSION

The UCSD Geriatrics Escape Room is a novel way of teaching residents core geriatric medicine principles and the 4Ms of AFHS. This format allows for early integration of geriatric medicine into established didactic curricular time. By combining case-based and team-based learning in an interactive setting, the UCSD Geriatrics Escape Room takes learners out of the traditional classroom and utilizes gamification as a modern approach to geriatric medicine education.

Limitations of our educational intervention include the use of free-response answers and limited post-activity response rate. While the free-response questions helped determine activity acceptance and identify areas for future improvement, they provided qualitative, not quantitative, responses for determination of educational impact. The post-escape room survey was done in real-time during the educational debrief. Thus, time constraints limited the number of residents who completed the post-escape room survey.

Despite the limited number of post-escape room surveys completed, responses were overwhelmingly positive. All residents who completed the survey reported real-time improvement in their confidence around core geriatric medicine concepts and indicated they would recommend the exercise to others. Replication of this activity in other settings could be a powerful new tool for geriatric medicine education. To ensure applicability for institutions outside of California, we created an AFHS 4Ms Care form, based on the California RCFE form (Supplementary File S3).

Future directions include administering an objective, knowledge-based assessment, as well as a longitudinal assessment to evaluate the sustained effect of the activity over time and the influence on interest in geriatric medicine

as a career. This escape room is adaptable; while we described the physical escape room that we administered, we have now created an additional modified version, the UCSD Virtual Geriatrics Escape Room, to meet the current need for social distancing as a result of the COVID-19 pandemic. Escape room materials are available (Supplementary Files S1 and S3) and the authors are willing to assist others with escape room development.

ACKNOWLEDGMENTS

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SUPPORTING INFORMATION

Additional Supporting Information may be found in the online version of this article.

Supplementary File S1 Puzzle instructions with materials used.
Supplementary File S2. Escape room surveys.
Supplementary File S3. AFHS 4Ms care form.