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Guess Who: Toxicology and Pharmacology

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#### **Authors**

McGowan, Lynn

Michienzi, Avery

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0.87), and 4.5 (SD 0.71) (Figure) for PGY1, PGY2, and PGY3s, respectively ( $P < 0.001$ ). The phi-coefficient was 0.31, providing evidence that differences in entrustment were due to residents, not faculty members. Results indicate validity of the EPA based assessment and support its use by the clinical competency committee for ACGME reporting.

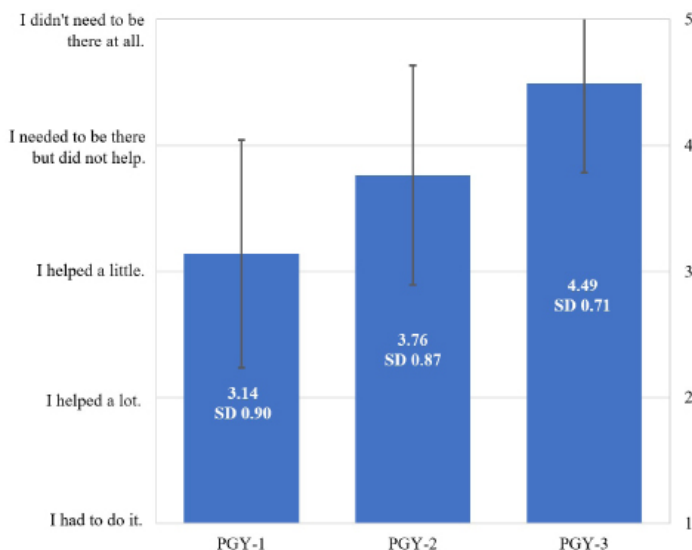


Figure. Mean entrustment level by post-graduate year class.

## 30 Guess Who: Toxicology and Pharmacology

Lynn McGowan, Avery Michienzi

**Background:** Over one million Emergency Department visits are made each year due to poisonings. Approximately 40% of reported poisonings are secondary to pharmaceuticals. Given the increasing incidence and high morbidity associated with drug ingestion, it is critical that new and engaging methods are available for educators to teach these subjects.

**Educational objectives:** 1. Review the mechanism of action, indications and side effects of emergency medications. 2. Differentiate between common drug and environmental poisons. 3. Use gamification to engage learners and improve wellness.

**Curricular design:** We created Pharmacology and Toxicology versions of the classic board game Guess Who in order to challenge learners to recall unique characteristics and commonalities between toxidromes and drug mechanisms. Each matching pair of boards included a total of twenty-four drugs or toxins with a corresponding mystery card deck. The goal is to correctly identify a mystery card randomly selected by your opponent. Each turn, a player may ask one yes/no question to eliminate items on the board that do not fit the mystery card description. The best strategy is to ask a question that allows you to eliminate the largest number

of items from your game board, thus challenging players to identify commonalities between the items. Each team was provided with a reference guide which included high yield facts about each of the items on the board. Use of this guide limited the need for multiple facilitators without risking transfer of misinformation.

**Impact/effectiveness:** Pharmacology and Toxicology Guess Who has been incorporated into EM resident conferences and used for a wider audience at two regional EM conferences in Pennsylvania. Toxicology Guess Who is also played by medical students, residents and fellows from multiple specialties who are rotating through a medical toxicology service. The game has received overwhelmingly positive feedback from players.

## 31 Low Tech, High Impact: A Tabletop Escape Game for Toxicology Review

Darielys Mejias, Shayne Gue

**Introduction:** Intentional and accidental drug overdose and exposure to toxic substances are commonly seen in the Emergency Department. There are multiple toxic substances that are rarely seen but are associated with high morbidity and mortality. It is important that emergency medicine physicians are effectively trained to identify and manage such cases. Our innovative Toxicology Escape Room utilized interactive gamification for residents to review challenging toxicology cases not frequently encountered.

**Educational objectives:** The goals of this innovation were 1) to promote collaboration and gain consensus among residents while reviewing high-yield toxicology concepts in preparation for the in-training exam; and 2) to recognize and differentiate signs and symptoms of specific intoxications to provide high-quality emergency stabilization and treatment.

**Curricular Design:** This escape room-style activity was comprised of a series of interconnected puzzles necessitating solutions. 19 participants were divided into 3 teams, racing against one another to solve the puzzles in the fastest time. The first puzzle involved matching medications with their respective drug classes, yielding a numerical code unlocking the next stage. This stage involved a crossword puzzle of clinical presentations of toxicities, antidotes, and other associations. Selected letters from the crossword puzzle were used in an unscramble exercise to find the final clue to unlock the mystery box. We allotted 20 minutes for the exercise, with an additional 10-minute debrief to review key points and clarify questions.

**Impact:** Learners completed pre- and post-activity tests and a post-activity survey. Results showed a significant increase in knowledge translation (37.9% to 89.5%,  $p < 0.0001$ ). All 19 participants reported that the Toxicity Escape Room was engaging and challenging and 94.7%