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Use of Layered Gelatin/Tapioca Abdominal Wall Model to Practice Tans Abdominal Plane Block Regional Anesthesia

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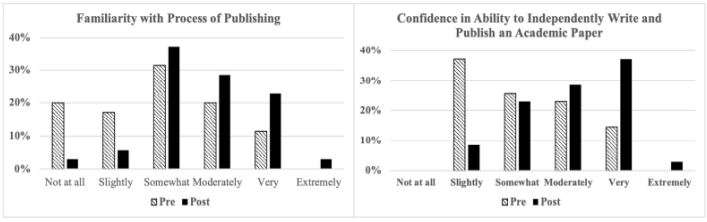
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Results: There was an 81.4% survey response rate (18 residents, 17 faculty). Respondents reported significantly increased interest and confidence in academic writing, and increased familiarity with the peer-reviewed publishing process after participation. Respondents reported significantly decreased perceived difficulty of academic writing after mentorship program participation.

Conclusion: Participation in an academic writing mentorship program positively impacts both EM resident and faculty perceptions of academic writing and decreases the perceived difficulty of academic writing.



11 LGBTQ+ Health in Emergency Medicine Residency Curricula: A Needs Assessment

Elaine Hsiang, Joel Moll

Introduction: The quality of and access to care by LGBTQ+ patients is often compromised by physician knowledge deficits, bias, and inadequate training in LGBTQ+ health. EM physicians must be prepared to care for LGBTQ+ patients, but there is a lack of standardization of training in LGBTQ+ health across EM residencies.

Objectives: To assess current practices and perform a needs assessment of LGBTQ+ health teaching across a sample of EM residencies. This information can guide future efforts in standardizing content and improve delivery of LGBTQ+ health topics during EM residency training.

Methods: Residents from five geographically diverse EM residencies in the United States were invited to complete an online Qualtrics survey between April and June 2024. The survey contained questions regarding the amount and scope of LGBTQ+ health exposure in residency as well as delivery preferences to improve LGBTQ+ health teaching within residency curricula.

Results: 100 residents across the five programs participated in the survey (37% response rate). Participants reported a median of 2-5 hours of LGBTQ+ health teaching during residency, with 5.4% reporting zero hours. Most residents reported exposure to basic considerations (e.g. pronouns) and LGBTQ+ health disparities. The greatest content gaps were in pediatric considerations, legal considerations, and taking an organ inventory. Overall, participants were more comfortable performing clinical care for sexual minority patients than gender minority patients (Figures 1 and 2). Suggestions for improving LGBTQ+ health education emphasized the necessity of incorporating LGBTQ+ health into the curriculum and including LGBTQ+ community members and patients into curricular design and delivery.

Conclusions: These findings identify potential content gaps in education being delivered, and suggest that for LGBTQ+ health education to be more effective in emergency medicine residency programs, it should be comprehensive, community-engaged, and practice-oriented.

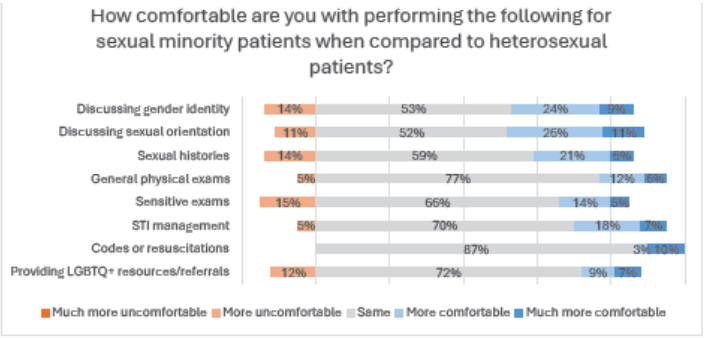


Figure 1. Respondent comfort in caring for sexual minority patients.

12 Use of Layered Gelatin/Tapioca Abdominal Wall Model to Practice Tans Abdominal Plane Block Regional Anesthesia

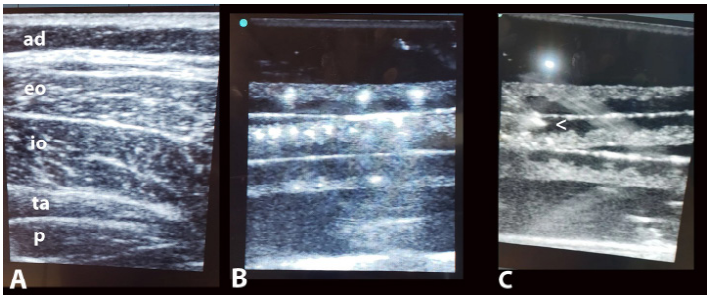
Matthew Hysell, Spring Lutzen

Introduction: Ultrasound-guided regional anesthesia has expanded considerably in EM. A possible new block in EM is the Trans Abdominal Plane block. This block deposits local anesthetic between the internal oblique and transversus abdominis muscle of the flank to achieve peritoneal anesthesia. We designed a layered model of the 3 muscles making up the abdominal wall to allow practice of injecting at specific levels Educational Objectives: To give residents the opportunity to practice visualizing multiple layers and injecting at a specific level

Curricular Design: Model was created using commercially available unflavored gelatine packets from the grocery store. We doubled the concentration of gelatine to create a more robust model. We mixed previously soaked tapioca into the liquid gelatine to texture to the ultrasound images. Tapioca sinks when added to hot gelatine. Layers must be allowed to cool to set up prior to adding new layers. The linear probe of most ultrasound machines only penetrates about 4cm so care must be taken with the thickness of each layer to not exceed the depth ultrasound can penetrate. However, the glass bottom to the gelatine caused significant reverberation artifact with shallow models; squares had to be

removed from the pan and set atop the remaining model to avoid reverberation. Even with double concentrated gelatin excessive downward force with the ultrasound probe could split models Image 1: A) Mid axillary line flank layers (ad=adipose, eo=external oblique, io=internal oblique, ta=transversus abdominis, p=peritoneum. B) Gelatine and tapioca model. C) needle at arrowpoint being advanced

Impact/Effectiveness: A 9x13 pan sufficed for 17 residents and medical students to practice injecting specific layers. It did require removal of squares of gelatine and stacking them to avoid artifact from the bottom of the pan and to decrease damage from the probe



13 Ultrasound Education: Knowledge Degradation during Residency

Pavitra Kotini-Shah, Megan Chan, Pranshul Goel, Reed Gilbert, Kayla Gross, Shaveta Khosla

Introduction: Proficiency in ultrasound skills is increasingly recognized as vital in medical training, particularly for residents facing urgent clinical situations. Literature indicates a concerning decline in ultrasound knowledge retention among first-year Emergency Medicine (EM) residents and a paucity of any evaluation for long-term retention. This gap in evaluation raises concerns about the effectiveness of current training methodologies and a lack of understanding regarding ultrasound knowledge degradation and retention during residency training.

Objectives: We sought to evaluate knowledge gained during a dedicated ultrasound rotation during PGY1 and then evaluate knowledge retention/degradation one year later during PGY2. **Methods:** We developed an online 50-question assessment tool that covered concepts for core applications and knobology pertinent to our ultrasound machines. The tool contained multiple-choice and matching questions. We evaluated EM and EM/IM residents with this same assessment tool as a pre-test, a post-test after their PGY1 ultrasound rotation, and then a 1 year post-test during the same month in their PGY2 year. The assessments were deployed for three consecutive years, from 2020-2021, 2021-2022, and 2022-2023. Paired t-tests were used to assess statistically significant differences.

Results: 18 residents were in each cohort. In all three cohorts, residents consistently showed improvement on the ultrasound assessment after the rotation with an average increase of 22%, 24% and 20% in the consecutive cohorts from pre to post throughout the academic year (July to June). Across the cohorts, residents' performance consistently declined on the one-year post assessment (on average the decline was 8% in the first two cohorts and 1% in the third cohort) with lower scores compared to immediately post rotation. Across the three cohorts, the improvement from pre- to post and degradation from post to 1-year post were both statistically significant ($p<0.01$).

Conclusions: Our data consistently revealed ultrasound knowledge degradation across multiple years, which the COVID-19 pandemic may have influenced, but the trend reinforces the necessity for ongoing educational refreshers and re-evaluation beyond initial training to ensure residents remain proficient.



Figure 1. Ultrasound knowledge across the three timepoints.

14 Improvisation Clinic – Building Relationship-Centered Communication Skills and Enhancing Learner Feedback in Emergency Medicine through Applied Improvisation

Brendan Freeman, Abbas Husain, Jordan Valentin

Introduction: Improvisational techniques offer a novel approach to teaching relationship-centered communication (RCC) for patient care and enhancing learner feedback in emergency medicine. The "Yes, and" improv technique promotes these by accepting (yes) and building on (and) a partner's ideas.

Educational Objectives: Define "Yes, and" and its role in RCC and learner feedback. Review three evidence-based feedback models through a "Yes, and" lens. Apply "Yes, and" skills in improv exercises.

Curricular Design: Following Kern's six-step approach, this curriculum was developed to address identified gaps in RCC and feedback skills in EM residents and delivered in