**Scubs Addressing the Firearm Epidemic: A Novel Multidisciplinary Elective for Preclinical Students**

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**Purpose:** In the United States, firearm-related injuries claim over 100 lives daily. Lately, physicians have taken a leading role in advocating for public health strategies, policy change, and increased research funding to address the firearm epidemic. However, rates of physician counseling on firearm safety remain low, with lack of knowledge a known barrier. Currently, few institutions offer a formal curriculum on the firearm epidemic. We developed and evaluated an elective curriculum on firearm injury, violence, and the role of health care providers in preventing and addressing this epidemic.

**Approach/Methods:** We developed an 8-week curriculum using educational priorities determined by a panel of national experts. Eight content-area experts from across the United States led the following sessions: Intro to Firearm Violence in the United States; Physician and Community Advocacy; Public Health Approach to Gun Violence; Preventing Mass Shootings and Targeted Violence; Trauma Teams and Procedures; Suicide and Firearm Counseling; Firearm Research and Physician Advocacy; and Survivor Panel Within a Hospital-Based Violence Intervention Program. The course was delivered via Zoom in Fall 2020. Our evaluation used a mixed-methods approach: developing and disseminating a pre–post quantitative survey to assess course impact on knowledge and self-efficacy by priority and conducting a postcourse focus group. Quantitative survey questions used 1–5 Likert scale responses and were analyzed with unpaired t tests. Qualitative results were grouped by theme using independent inductive thematic analysis by 2 investigators.

**Results/Outcomes:** Twenty-eight students participated in at least 1 session, with a regular attendance of 6. Twenty-one students responded to the precourse survey, and 7 responded to the postcourse survey, with 5 students completing both surveys. The postcourse focus group included 5 students and 3 investigators. Students reported heightened understanding of the epidemiology of firearm injury in the United States (pre = 1.76 to post = 3.71, P < .0001) and the physical and mental health sequelae of firearm injury (1.67 to 3.43, P < .0001). Students felt more equipped to discuss this topic with peers (1.43 to 3.43, P < .0001) and patients (1.48 to 4.0, P < .0001). Students were more likely to agree that physicians should screen patients for firearm access (4.19 to 5, P = .0075), and felt more confident about providing specific safe storage and use advice (1.43 to 2.86, P = .0003). Students felt more familiar with legal and ethical requirements for physicians if patients screen positive for firearm access (1.24 to 3.29, P < .0001) and reported a greater understanding of firearm laws in California (1.24 to 2.71, P < .0001). Students felt more familiar with forms of physician advocacy (2.19 to 3.86, P = .0002). Students’ perceptions on the importance of firearm education in medical school curriculum also improved (4.52 to 5, P = .0432). Subanalysis of the 5 students who completed both precourse and postcourse surveys did not have significantly different results. The postcourse focus group highlighted several key themes: increased motivation to incorporate patient counseling and advocacy as well as utility of spiraled learning and repetition of statistics throughout the course. Participants expressed a desire for more interactive content and opportunities for peer-to-peer engagement during the sessions.

**Discussion:** A multidisciplinary, longitudinal curriculum on the firearm epidemic in the United States increased student knowledge and self-efficacy in key educational priority areas. While this course was a supplemental elective, our results showed that an evidence-based firearm education is feasible and impactful for preclinical students. The remote learning format necessitated by the COVID-19 pandemic presented unique benefits and challenges: we were able to engage experts from across the United States but were limited in facilitating peer and instructor interaction.

**Significance:** Firearm curriculum in early medical training has the potential to impact patient care through building knowledge and skills to advocate for evidence-based policy and counsel patients on firearm safety.

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**References**

**Advantages of a Combination Cut Score Method for Basic Science Assessment**

Marcel Satsky Kerr, PhD

**Purpose:** Per the medical education research literature, there remains no gold standard for determining medical education exam cut scores (passing scores). Most U.S. medical schools use an absolute or relative standard method; each has advantages and limitations. Given the diverse goals schools strive to accomplish when administering exams, neither approach is sufficient. For example, in Phase 1 of our basic science curriculum, we endeavor to develop exams that are valid, reliable, appropriately rigorous, and criterion-referenced; prepare students for the high-stakes testing situations.
they will encounter in their medical education and graduate medical education programs and State Board exams; and provide a valid means to adjust cut scores due to cohort performance and item difficulty. A combination cut score method allows schools to accomplish such goals in a manner that is also easy to explain and defend to students and faculty. This presentation will discuss the advantages, process, and outcomes of using a combination cut score method for basic science assessment compared with absolute and relative standard setting methods.

**Approach:** Per Cohen-Schotanus and van der Vleuten's study, we employed a combination cut score method, which uses the best performing students as point of reference. Our class size is 60 students per cohort, and our Phase 1 basic science curriculum is delivered via 14 modules. Faculty co-leaders develop module exams via NBME's Customized Assessment Services. Specifically, for each exam, the cut score is 65% of the 95th percentile student's score. To date, we have completed 5 module exams with promising psychometric outcomes.

**Results:** Thus far, we have found that our outcomes are comparable to previous years’ while being more manageable and slightly more consistent. Given that we pivoted to administering NBME exams virtually during the pandemic, managing exam/retake creation and online proctoring consumes considerable time and resources. These more predictable and consistent outcomes of the combination method have aided in our ability to manage our pandemic contingency plans effectively. Specifically, our exam outcomes include more consistent exam cut scores and number of student failures. Across the 14 exams last year, the cut scores ranged from 56 to 65. Across the 5 exams administered thus far this year, the range of cut scores is 57 to 65. More significantly, last year's number of failures ranged from 0 to 5, and this year the number of failures range from 1 to 3. As predicted when the combination cut score method was proposed, the lower ranges of cut scores and increased consistency in the number of student failures are positive outcomes that were expected.

**Discussion:** Thus far, we have learned that the combination cut score method is producing outcomes as expected with fewer surprises. Students report appreciation for the straightforward nature of the cut score method and our transparency in reporting it at the beginning of the course. The use of consistent cut scores has allayed student and faculty concerns regarding exam validity and reliability, and the more consistent number of failures has allowed our assessment team to support the exam retake process more efficiently and with fewer human resources.

**Significance:** As medical schools continue to grapple with exam cut score decisions, a combination cut score method offers several advantages. It supports criterion-referenced exams that measure student attainment of objectives while also considering cohort abilities and test item difficulty. It is simple and inexpensive to employ, transparent and easy to understand, yields consistent and manageable results, and is based upon sound research practices.

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**References**


**The Underrepresented, Low Income, and First Time (UpLIFT) Project: A Comprehensive, Open-Access Guide to Medical School Admissions Aimed to Increase Educational Equity for Underrepresented Premedical Students**

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**Objective:** Despite ongoing efforts to recruit minority, first-generation, and low-income (FGLI) students into medicine, these student groups continue to be underrepresented among medical school matriculants. The Underrepresented, Low Income, and First Time (UpLIFT) Project aims to create an open-access, scalable, web-based platform of comprehensive, up-to-date information about successfully applying to and matriculating into medical school.

**Background:** Students from disadvantaged backgrounds being adequately represented among medical school applicants; however, data from the Association of American Medical Colleges Matriculating Student Questionnaire (a survey administered annually to all matriculating medical students in the U.S.) between 2007 and 2017 demonstrated that roughly 50% of matriculating students each year came from the top quintile of household income, with roughly 25% coming from the top 5% of household income. One factor contributing to this disparity is a lack of reliable and affordable advisory resources necessary for successfully navigating the premedical and application process. A barrier analysis conducted in rural Michigan found that 90% of surveyed students reported having concern about academic readiness when considering a career in health care and 60% of students reported feeling concerned about financial barriers. These challenges have likely been exacerbated by the COVID-19 pandemic as many students have reported difficulty navigating COVID-19-related changes to the medical school application process and premedical experience, and the pandemic has likely made adequate access to prehealth guidance counselors more challenging for FGLI students. Open-access advising resources are one possible way to address these issues.

**Design:** Twenty-six students at the Perelman School of Medicine were recruited to write, design, and illustrate a comprehensive guide on the medical