

Duke AHEAD Grants 2022-2023

Title: A Longitudinal Visual Arts Curriculum for Internal Medicine Residents

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Focused Question: Can a longitudinal three-year integrated visual arts and medical humanities curriculum improve the clinical skills and promote medical professionalism among Duke Internal Medicine residents?

Background: Visual arts-based training and health humanities programming is increasingly integrated into medical education. These predominantly elective programs address a variety of domains relevant to clinical practice, including observation skills, critical reflection, professional identity, bias awareness, burnout, tolerance for ambiguity, empathy, and resiliency. [1-4] Frequently, the art museum is utilized as a learning space to expose learners to various forms of art.[5, 6] However, a recent scoping review commissioned by the Association of American Medical Colleges (AAMC) and the AAMC's FRAHME report (Fundamental Role of the Arts and Humanities in Medical Education) noted a paucity of graduate medical education programming, a lack of a unified pedagogical theory in the medical humanities, and an absence of program evaluation that extended beyond learner satisfaction with course content.[2, 7] To address the need for a unified pedagogy, the AAMC introduced the Prism Model, which proposes that health humanities and visual arts programming be designed through one or more distinct lenses: mastering skills, perspective taking, personal insight, and social advocacy. [8, 9] Each lens can be used in isolation or combined with other lenses to address specific program objectives. Building upon two successful pilot programs introduced in 2021 and 2022 that addressed observation skill and medical professionalism among Duke Internal Medicine interns and second-year residents, this grant seeks to design, implement, and evaluate a longitudinal visual arts and humanities curriculum for all internal medicine residents at Duke University Health System. Using the Prism Model, this curriculum will target each of the four lenses in successive fashion throughout the 3-year residency program. The intern year will focus on "Mastering Skills" and utilize the art museum as classroom to address observation skill & physical diagnosis, communication of complex information, and tolerance for ambiguity. The second-year programming will target the "Personal Insight" and "Perspective Taking" lenses through visual arts-based programming at the Nasher Museum of Art with special attention given to underrepresented artists and visual imagery that addresses implicit and explicit bias, empathy, tolerance for ambiguity, and burnout. The third-year curriculum will focus on the "Social Advocacy" lens through an exploration of how the arts can be used to promote health equity. Addressing these areas is of critical importance in graduate medical education for several reasons. For example, there is a measurable decline in empathy during medical training which reaches its nadir in residency.[10-12] Maintaining empathy towards one's patients and colleagues is of grand importance given the core tenet of medicine rests on Peabody's poignant observation: "the secret of caring for the patient is in caring for the patient." [13] Moreover, burnout in the medical profession exceeds 67% and is associated with impaired clinical decision making,


malpractice, professionalism lapses, adverse personal outcomes including substance use and depression, and patient-level outcomes including prolonged length of stay and prolonged recovery times post-discharge. [14] Lastly, evidence suggests that an inability to tolerate ambiguity is associated with increased psychologic stress and reduced clinical performance.[15] This is not surprising as often the clear clinical decision-making schemas learned in medical school are often not reflected in the complexities of clinical medicine. Why and how are the arts useful in addressing these domains? Many scholars in the medical humanities have suggested that the visual arts are a powerful tool because they allow approachable pathways for reflection by “making strange” and acting as a “third thing.” [16, 17] The concept of “making strange” suggests that engagement with the arts and humanities disrupts the “automaticity of thinking” and allows for one to see their environment, practices, habits, and beliefs through new eyes.[16] In a similar vein, art also serves as a “third thing,” or an object that represents neither the voice of the facilitator nor the voice of a participant. This enables the work of art to act as a reflective trigger or conversational mediator that creates a safe space for personal reflection and sharing of diverse perspectives on potentially challenging topics, such as adverse events in patient care, race, and personal bias.[17]

Specific Aims: This study aims to design, implement, and evaluate a longitudinal 3-year visual arts-based curriculum for all internal medicine residents during each training year. The main goals of the three-year curriculum will be to promote medical professionalism, explore personal bias, improve communication skills, hone observation skill, increase tolerance for ambiguity, and increase empathy.

Methods: - This study design, implement, and evaluate a longitudinal visual arts-based curriculum for all internal medicine residents at Duke University Health System. The study has been approved by the Institutional Review Board of Duke University. All residents will be required to participate in the required curriculum but will have the option to opt out of formal assessment. All residents will give written informed consent. There will be no control group. The participants will receive one or two, three-hour sessions at the Nasher Museum of Art during the PGY-1 year and PGY-2 years, respectively. These sessions will take place on Friday mornings during scheduled academic half-day programming. The sessions will be taught by a professional art educator (ER) and physicians trained in museum-based visual art techniques (EB and JI). The sessions will involve in-person museum sessions with various works of art and may be paired with other art modalities including short stories, poetry, and/or physical art-creation. PGY-3 sessions will take place during allotted conference time approximately once per month for residents rotating on Duke General Medicine with the goal for all residents to attend a minimum of two sessions throughout the academic year. For all sessions, the facilitators will use a hybrid Visual Thinking Strategies (VTS) approach as well as other museum-based methodologies well described in the medical education and museum-based education literature including the Personal Responses Tour. [18, 19] Individual works of art will be specifically selected to address course objectives and works of art from underrepresented artists will be prioritized. Visual Thinking Strategies (VTS) is a widely used method of art museum education that was designed by psychologist Abigail Housen and museum educator Philip Yenawine to use visual arts to build observation and critical thinking skills. [19, 20] VTS lends itself to cross-disciplinary learning and has been shown to develop observational, communication, collaboration, and critical thinking skills across many different disciplines. [21] Interns and residents will complete twice annual qualitative surveys to gauge course perceptions and impacts. Semi-structured qualitative interviews will also be conducted in select participants at each stage of training to better understand the impacts of the visual arts engagement and refine future programming. Psychometric

assessment will include the Maslach Burnout Inventory, the Budner Tolerance for Ambiguity Scale, and the Inter-Reactivity Index to measure cognitive and affective empathy.[22] The primary outcome will be the successful implementation of the longitudinal program accompanied by qualitative analysis of semi-structured interviews and post-course survey data. Secondary outcomes will evaluation of psychometric scale data from the Maslach Burnout Inventory, the TFA scale, and the IRI subscales of perspective taking and empathic concern. The changes in individual scores from pre-intervention to post-intervention among individuals will be compared with a 2-tailed paired t test ($p < 0.05$ considered statistically significant). Regarding the professional development plan for the educators, the PI (JI) is a Faculty Associate within the Trent Center for Bioethics, Humanities, and History of Medicine who has successfully completed the Harvard Macy Institute's Art-Museum Based Health Professional Education fellowship course in 2021-2022, and now serves as an advisor to the program. Another collaborator on the project (EB) is currently enrolled in the same program for the 2022-2023 academic year and was the first resident member ever to be included in a cohort. Our medical education expert with extensive experience in curricular development and implementation is an Associate Program Director within the Internal Medicine Residency Program (JVK). Lastly, our visual arts expert (ER) serves as the Curator of Academic Initiatives at the Nasher Museum and has extensive experience building academic partnerships with other groups of medical students and residents at Duke.

IRB Status:

 Approved – Pro00111425

Challenges There is a lack of consensus on how best to measure the utility of visual arts-based interventions for medical trainees.[22, 23] This is reflected in the variety of measurement tools and the subsequent adaptation of psychometric scales from the psychology literature to calculate an objective outcome.[22] Due to the heterogeneity of experiences with visual art interventions, the authors elected to utilize both quantitative as well as qualitative analysis with a post-test survey and semi-structured interviews. Additional challenges will undoubtedly result from our study population. Internal medicine residents have rigorous and often inflexible schedules which often make it a challenge to guarantee protected time for curricular offerings. One of our collaborators (JVK) is an Associate Program Director within the Internal Medicine ry and has confirmed mandatory attendance as part of our second-year curriculum with plans to require similar participation in the PGY-1 and PGY-3 years.

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Budget:

		Estimated Cost:
PI Support	PI support	\$2500
Consultant costs	Art educator at Nasher support	\$1000
Equipment	Quantitative analysis including survey and licensing fees and qualitative analysis of semi-structured interviews including recording materials	\$5000
Computer		
Supplies	Art supplies for museum based activities	\$500
Travel	Parking and museum fees	\$1000
Other Expenses		
Total Costs for proposed project:		\$10000