

Art in Medicine Elective: Developing a New Curriculum

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Abstract

The American Association of Medical Colleges recognizes that the role of arts and humanities are “essential to the human experience” and their benefits in medical education are numerous.^[1] The arts and humanities are often used as a teaching modality in a variety of contexts, “from using visual art to teach observation skills to using literature to promote perspective taking.”^[2] Although this approach has been used at the University of Colorado School of Medicine in individual lessons throughout the four-year curriculum (i.e. in Health and Society sessions first year, in individual trail lectures during the third and fourth year, and sparingly in other required and elective coursework), we have identified a need for improved arts and humanities opportunities for medical students. Currently, there is no dedicated elective for students desiring to engage more consistently with the arts and humanities.

To address this need, we developed a four-week curriculum for medical students who are selecting electives for their final year of medical education. The goal of this elective is to allow students to build on earlier themes of arts engagement in the curriculum to further develop their empathy, perspective taking, and understanding of issues of health equity. Health equity and building student understanding of social justice and ethics are integral parts of the CUSOM’s educational mission, and this curriculum is an important option for students to continue to engage in this work.^[9] Using assessment tools derived from Miller’s Pyramid and the Kirkpatrick Evaluation Model ^[10-12], students will move from “knowing” to “showing how” they can model behavior that furthers their goals of working towards healthy equity, improving empathy, and demonstrating personal growth and resilience. The class will be offered for the first time in 2025, and feedback from students who take the elective will help us better refine and update the curriculum moving forward, with the long-term goal of adding the elective as a permanent addition to the CUSOM curriculum.

Targeted Needs Assessment

Targeted environment in which our curriculum will be implemented:

- Third- and fourth-year elective time:
 - During the elective portion of their final year in medical school, students will be able to join the elective through the established lottery process.
 - This will build on prior lessons given first year in arts education using Visual Thinking Strategies during the DOCS curriculum.
- In having the elective offered towards the end of their clinical experiences of mixed in with advanced clinical rotations, students can interpret their clinical experiences with a new lens.
- Students may be seeking to deepen their learning and growth through this course by the end of their time in medical school, so that the techniques they learn are fresh on their mind as they transition into careers where their resilience will be tested. They will learn these transferable skills in time for this important transition to residency.

Learning Objectives of the Curriculum

The overall goals of the elective:

- To equip third- and fourth-year students with the skills to utilize arts, humanities, and creativity to better understand issues of health equity, further their own personal growth and empathy, and improve perspective taking from their patients.
- To provide two weeks of focused education on the arts and issues of health equity with two cumulative artistic and literature projects that allow students to explore their creativity and grapple with an issue of health equity of their own choosing.
- To provide two weeks of focused education on the arts and wellness with a cumulative artistic project and a final creative project to help students build empathy, resilience, and skills to fight burnout.

The specific learning goals of the elective:

- Students will identify issues of health equity such as social determinants of health, intergenerational trauma, intersectionality, resilience, and cross-cultural care present in the healthcare system.
- Students will create an art project that explores one of these issues and the complexities of the structural forces that underpin this issue.
- Students will learn arts education frameworks of Visual Thinking Strategies and Personal Responses Tour to incorporate reflection, critical analysis, and their own past experiences to build empathy, improve resilience, and develop reflective skills to fight burnout.^[13]
- Students will practice the ability to tolerate ambiguity, a skill that increases with engagement with visual art.^[14]
- Students will identify and explore a personal experience that highlights the importance of empathy, resilience, or reflective skills.
- Students will complete a final artistic project in any medium that addresses an issue of their choosing from any of the educational topics we have covered in the course. They will write a short “gallery” text describing their piece and will present their final project in a gallery space during an art show held at the end of the elective. Students will submit their final project and a one-page reflection on the piece by the end of the elective.

Evaluation and Feedback

What learner assessments will be used?

Students will submit artistic projects and written reflections weekly.

Student attendance at all in-person lectures and field trip events will be required.

Beginning of class and end of class survey to provide data about effectiveness of the curriculum and student buy-in.

Evaluation and Feedback (cont.)

Survey example questions:

- Describe an issue of health equity you have seen in your time as a medical student.
- What are the benefits of creating art?
- Likert scales: On a scale of 1-10 (10 being the most important), how important is it for medical students to learn about health equity?
- Likert scales: On a scale of 1-10 (10 being the most important), how important is it for medical students to learn about empathy?

We will use the Toronto Empathy Questionnaire (TEQ) and the Jefferson Scale of Physicians Empathy (JSPE) at the beginning of the elective, and again at the end to create quantitative measures of changes in student empathy.^[25, 26]

In general, curriculum evaluation will happen qualitatively as there is no set control group we can use for the class. Student’s self-reported scales and changes on the TEQ and JSPE will be our best measure of curricular success and to assist in efforts to continue with refining this curriculum moving forward.

Educational Strategies

We will utilize the following educational strategies drawn from arts education practices:

Narrative Medicine:

Narrative medicine was developed to help “equip healthcare professionals with the capacity” to receive accounts of illness from patients – to absorb, interpret and then turn that experience into action from the stories told by patients.^[15] The focus of narrative medicine is to help build the patient-physician alliance while allowing the physician to “recognize their own personal journey through medicine” which allows individuals to practice empathy, storytelling, and compassionate advocacy.^[16] In addition to reflecting on their own experiences, narrative medicine may support physician “well-being and personal growth.”^[17] Narrative medicine can serve as a bridge for physicians to connect with patients, and then use those connections to advocate to the wider community, other colleagues, and society as whole.

Visual Thinking Strategies:

Visual Thinking Strategies (VTS) is a non-profit that focuses on research-based educational strategies to facilitate discussion of art. These techniques serve as a method to teach deep listening, increase critical thinking, and build reflection and community-building dialogue that integrates diverse viewpoints.^[18] VTS also improves visual literacy, which is an important aspect of improving clinical observation skills for medical students.^[19-21] VTS focuses on a certified guide asking participants to observe a piece of art, and then ask “what is going on here?“, then summarizing participant responses. Next, asking “what do you see that makes you say that?” and encouraging participants to back up their statements. Finally, ask participants “what more can we find?” to continue the conversation.^[6, 13, 22] These strategies must be carried out by a certified coach or facilitator to achieve effectiveness. When employed effectively, VTS has been shown to build visual literacy, communication skills, and empathy.^[6, 13, 23] VTS has also stated their commitment to antiracist work, and the ways in which the VTS techniques can be used to increase antiracist work in organizations.^[24]

Proposed Calendar

Monday	Tuesday	Wednesday	Thursday	Friday
Theme: Health Equity				
Introduce FRAME and have students read this to start the elective.	Speaker	Pre-Work: Video on local artist practice Speaker: Local artist	Collaboration with CAIANH Art tour: Nighthorse Campbell Native Health Building	Activity: Mixed Media/collage
Pre-Work: Narrative Medicine TED Talk	Speaker	Speaker: Narrative medicine writer	Denver Art Museum visit with Dr. Milla: guided tour and VTS practice	Activity: Narrative Medicine
Theme: Wellness				
Campus Walking Guided Art Tour	Speaker: Local photographer	Pre-Work: Read CU - Human Touch Write reflection piece	AI + Art	Activity: Photography
Pre-work: Sandra Kaplan				
Collaboration with Colorado Resilience Arts Lab (CORAL)	Speaker: Local muralist	Speaker: Local dance collaborator	Dance / Hip Hop	Activity: Jelly Printing Share final projects

References

1. *The Fundamental Role of Arts and Humanities in Medical Education*. [Website] [cited 2024 October 6th]; Webpage on Medical Education]. Available from: <https://www.aamc.org/about-us/mission-and-medical-education/fundamentals>
2. Moniz, T., et al., *How Are the Arts and Humanities Used in Medical Education? Results of a Scoping Review*. Academic Medicine, 2021. **96**(8).
3. Mathieu, I.P. and B.J. Martin, *The art of equity: critical health humanities in practice*. Philos Ethics Humanit Med, 2023. **18**(1): p. 19.
4. Jones, E.K., A.L. Kittendorf, and A.K. Kumagai, *Creative art and medical student development: a qualitative study*. Med Educ, 2017. **51**(2): p. 174-183.
5. Harz, D., et al., *The art of empathy: Teaching empathy through art*. Clin Teach, 2023. **20**(5): p. e13643.
6. Klugman, C.M., J. Peel, and D. Beckmann-Mendez, *Art Rounds: teaching interprofessional students visual thinking strategies at one school*. Acad Med, 2011. **86**(10): p. 1266-71.
7. Naghshineh, S., et al., *Formal art observation training improves medical students' visual diagnostic skills*. J Gen Intern Med, 2008. **23**(7): p. 991-7.
8. Dolev, J.C., L.K. Friedlaender, and I.M. Braverman, *Use of fine art to enhance visual diagnostic skills*. Jama, 2001. **286**(9): p. 1020-1.
9. Lowenstein, S.R., Richards, R.D. *University of Colorado Anschutz Medical Campus Diversity Plan*. 2015 12/22/2015 [cited 2024 October 6th]; Available from: https://medschool.cuanschutz.edu/docs/libraries/provider31/diversity/diversityplan2015a.pdf?sfvrsn=7b04b3ba_2.
10. Miller, G.E., *The assessment of clinical skills/competence/performance*. Acad Med, 1990. **65**(9 Suppl): p. S63-7.
11. Smidt, A., et al., *The Kirkpatrick model: A useful tool for evaluating training outcomes*. J Intellect Dev Disabil, 2009. **34**(3): p. 266-74.
12. Alkhafji, M., et al., *Visual art-based training in undergraduate medical education: A systematic review*. Med Teach, 2022. **44**(5): p. 500-509.
13. Reilly, J.M., J. Ring, and L. Duke, *Visual thinking strategies: a new role for art in medical education*. Fam Med, 2005. **37**(4): p. 250-2.
14. Gowda, D., et al., *Art as Sanctuary: A Four-Year Mixed-Methods Evaluation of a Visual Art Course Addressing Uncertainty Through Reflection*. Acad Med, 2018. **93**(11S Association of American Medical Colleges Learn Serve Lead: Proceedings of the 57th Annual Research in Medical Education Sessions): p. S8-S13.
15. Charon, R., et al., *Introduction, in The Principles and Practice of Narrative Medicine*. 2016, Oxford University Press. p. 0.
16. Charon, R., *Narrative MedicineA Model for Empathy, Reflection, Profession, and Trust*. JAMA, 2001. **286**(15): p. 1897-1902.
17. Choe, N.S., *Understanding the value of art prompts in an online narrative medicine workshop: an exploratory-descriptive focus group study*. Med Humanit, 2023. **49**(2): p. 308-320.
18. Geer, T. *About Us?* [Webpage] 2024 [cited 2024 12/2]; Available from: <https://vtshome.org/about/>.
19. Jasani, S.K. and N.S. Saks, *Utilizing visual art to enhance the clinical observation skills of medical students*. Med Teach, 2013. **35**(7): p. e1327-31.
20. Katz, J.T. and S. Khoshbin, *Can visual arts training improve physician performance?* Trans Am Clin Climatol Assoc, 2014. **125**: p. 331-41; discussion 341-2.
21. Mukunda, N., et al., *Visual art instruction in medical education: a narrative review*. Med Educ Online, 2019. **24**(1): p. 1558657.
22. Amlic-Lefond, C., et al., *Use of alteplase in childhood arterial ischaemic stroke: a multicentre, observational, cohort study*. Lancet Neurol, 2009. **8**(6): p. 530-6.
23. Chisolm, M.S., et al., *Transformative Learning in the Art Museum: A Methods Review*. Fam Med, 2020. **52**(10): p. 736-740.
24. Strategies, V.T. *VTS Commitment to Antiracist Work*. [cited 2024 12/2]; Available from: https://www.canva.com/design/DNAEAg_sozc/view1.
25. Spreng, R.N., et al., *The Toronto Empathy Questionnaire: scale development and initial validation of a factor-analytic solution to multiple empathy measures*. J Pers Assess, 2009. **91**(1): p. 62-71.
26. Hojat, M., et al., *The Jefferson Scale of Empathy: a nationwide study of measurement properties, underlying components, latent variable structure, and national norms in medical students*. Adv Health Sci Educ Theory Pract, 2018. **23**(5): p. 899-920.