Improvisation in the Time of a Pandemic: Field Notes on Resilience

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The well-being and resilience of medical trainees are crucial not only for their health and happiness but also for their professional effectiveness.[1] Resident burnout is a significant issue, reported to be as high as 40% before the COVID-19 pandemic,[2] and is projected to worsen. COVID-19 has placed an unprecedented burden on the health care workforce including those in graduate medical education (GME). Other disasters, including social upheaval, civil unrest, and catastrophic natural events, further compounded the stress. This ongoing crisis is a sobering reminder to proactively incorporate wellness and resilience training programs for navigating disasters that may very well be a part of our future. However, evidence-based interventions to foster resilience and well-being are few.[3,4] In this article, we reflect on our personal experiences of improv training and explore evidence linking them to bolstering resilience during the COVID-19 pandemic. Understanding and cultivating these links holds promise for a synergistic contribution to wellness.

Improvisation and Medicine

Health care is an inherently complex and unpredictable system, and the COVID-19 pandemic has brought radical uncertainty worldwide. Medical schools, residency programs, and trainees alike were required to improvise in order to navigate this pandemic. Improvisation entails competence in spontaneous adaptation during evolving situations. By definition, improvisational performance is spontaneous, yet it is also a learnable skill.

The benefits of improvisation training are increasingly being recognized and used in medical education, especially to improve communication, empathy, and teamwork.[5,6] Our experiences and early evidence suggest that it can contribute to resilience as well. The adaptation of applied improvisation in the medical field has been termed "medical improv," defined as the "principles and training techniques of improvisational theater to improve cognition, communication, and teamwork in the field of medicine."[7]

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Improvisation uses powerful tools, including attentive listening, observation, emotional presence, empathy, and collaboration.[8] Medical improv does not train participants to be actors, but to effectively react to evolving situations in clinical contexts. It is not about being witty or funny but rather about full presence and open engagement.

Resilience and Improvisation

The elements that tie well-being, resilience, and burnout are intricate, multifaceted, and complex. While external factors (eg, workload, autonomy, community, fairness) play a critical role in resilience, internal factors (ie, individual) deserve scrutiny as well. Wood et al discovered 4 potentially protective factors for residents against burnout: grit, social support, psychological flexibility, and resiliency.[9] Resilience is one's ability to endure adversity, challenges, and disruptions with quick recovery. Experts have underscored "flexible adaptability" as the core tenet of resilience,[10] which can be approached as a mindset of dynamic traits that can be intervened upon and improved.[11]

A complete medical education proactively equips trainees with protective tools that can help them recover and rebound in the face of challenges. We complied an inventory of essential improvisation skills that have helped us buffer the ill effects of pandemic-related stress and foster resilience (FIGURE).

Tolerance of Uncertainty

Improvisation promotes uncertainty tolerance via exposure. Each successive moment in improvisation opens many possibilities; as such, an improv encounter provides direct and consistent experience with uncertainty. This exposure leads to learned habituation, whereby the initial fear response atrophies as nonthreatening associations are formed over time.[12] Inability to cope with uncertainty poses risks for clinicians, including undue distress, which may increase resource utilization, poor communication skills, and poor attitudes toward the underserved.[13]

Tolerance of uncertainty is an essential skill for professional and personal well-being and for

FIGURE
Medical Improvisation and Resilience: Core Skills

resilience.[14] Medical improv training provides an ease and comfort in the ability to adapt and react in uncertain situations, contributing to increased resilience.[15,16] The ability to say "Yes, and…," to accept what is, even if you don't understand where it's all going, and add to it, is a fundamental improv principle. The ongoing pandemic has been a meditation in uncertainty tolerance—approaching and engaging it with an open mind has been key to resiliency. Improv has taught us to be comfortable in this discomfort.

Divergent Thinking and Optimism

Divergent thinking implies the potential to consider myriad creative solutions to an issue at hand. It contrasts with convergent thinking, the ability to arrive at a single accurate solution. Divergent thinking processes occur in a spontaneous and nonlinear manner, generating multiple ideas in many permutations and combinations. Evidence suggests that improv training increases divergent thinking,[15,17] which is essential for an optimistic, positive outlook. Improv training gives learners increased confidence in their knowledge, skills, and experience when taking risks, even if their attempts lead to failure. Individuals with low harm avoidance (ie, those with a positive outlook) are decisive and less anxious.[18] During the COVID-19 pandemic we have been faced with many low points when enduring dread, and distress felt insurmountable. Maintaining optimism was crucial for resiliency.

BOX Tips for Implementing Medical Improv Training in Programs

- Support faculty attendance at train-the-trainer courses specifically designed for teaching medical improv.[31,32]
- Partner with medical improv alumni to share best practices.[31]
- Partner with improv teachers from local improv schools to co-create an improv curriculum tailored for the unique needs of your programs.
- Invite medical improv educators from other programs for experiential workshops, grand rounds, or residency education sessions.
- Host a journal club on the ever-growing body of medical improv literature to generate curiosity and interest in the field. Combine it with improv exercises directed by a visiting professor or improv instructor from a local training center.

Collaboration and Trust

A core ethic of improv is the focus on the "ensemble," rather than an individual performer.[8] Improv performers are in a tacit, collective agreement to share responsibility for a scene's outcome, commit to their team's success, and lend unwavering support to their partners. Medical improv teaches essential and powerful skills to function in groups and promote a culture of trust. Studies show that mutually supportive relationships and coherent team structures have protective effects against burnout for residents.[19,20]

Self-Awareness

Self-awareness, the metacognitive capacity, has also been noted to reduce burnout and improve resilience.[21] Improvisation training builds awareness through a process of reflection. Improv exercises target specific communication or skills domains, followed by a debrief, feedback, and reflection. Participants are encouraged to reflect on these exercises, which can help cultivate a reflective mindset in their professional roles. This consistent practice of reflection lays the groundwork for performance improvement by consolidation of skills and inculcation of proficient behaviors.[4,22]

Mindfulness/Presence

Mindfulness entails presence, which is critical for a meaningful connection.[23] *Presence* involves "learning to step back, pause, suspend expectations, and receive and connect with someone's story."[24] A metanalysis of mindfulness practice found it to be effective in reducing burnout in physicians.[25] Improvisation training helps cultivate the skills of presence by practicing having your teammates' backs and being

TABLE
Improv Exercises for Cultivating Resilience, Collaboration, and Trust

Improv Exercise		Objectives	Exercise Duration/Debrief (approx.)
Conducted Story[31]	Five to 8 residents/fellows stand in a row. Instructor is the conductor. The conductor points randomly at a resident/fellow who starts telling a story until conductor points at someone else, who will continue the story exactly where it broke off.	*Tolerance of uncertainty:* Adding to the story despite not knowing where it is all going	5 minutes/5 minutes
New Choice[31]	Two residents/fellows begin an encounter with a line of dialogue provided by the instructor. When the instructor hits the bell, they have to come up with a different ending word. (eg, "I'd love to go to Paris." *Chime*. "I'd love to be the president" *Chime*. "I'd love to go bungee jumping.") The scene partner responds to the last thing said, and the scene goes in that new direction.	*Divergent thinking:* What happens when you let go and say "Yes, and. . .?" Brainstorming—many good ideas buried underneath the more obvious ones	5 minutes/5 minutes
Slide Show[31]	Four people join together to create a silent, still image; instructor prompts a pair to launch the slide show ("I understand you 2 went to Europe this summer and have slides—can you tell us the story of it?") Pair mimes and creates a still "slide" and the other pair explains the image. Explainers say "click" to prompt silent group to create new slide.	*Collaboration/trust:* Putting "yes, and. . ." and "gifts" into practice. Experiencing the power of collaboration and support to create forward motion.	5 minutes/5–10 minutes
The Rant[32]	Pairs of residents/fellows take turns ranting for 2 minutes about a subject of their choice, followed by a "translation" of the rant by the listener that focuses on the underlying values and needs of the ranter.	*Self-awareness:* Awareness of what an individual values beneath the rant.	5 minutes/5 minutes
Mirroring[5,29]	Pairs of residents/fellows silently face each other and mirror and match the body language and expressions of the other. One leads, the other follows. They switch until both are seamlessly leading and following.	*Presence:* Mindfulness and full engagement as participants mirror each other	5 minutes/5 minutes

able to respond to the dynamics of what is happening in the moment. On the frontlines, amidst loss and despair, sometimes the gift of presence was the best we could offer. This presence had a centering, and often disarming, effect. These moments, in their ache and sadness, often gave way to unexpected joy, profoundly adding to our resilience.

Implementing Medical Improv

Medical improv training has been reported as transformative.[26] An improviser's mindset is a liberating headspace that has helped us reframe the COVID-19 crisis into opportunities to grow, tolerate uncertainty, engage in divergent thinking, and practice mindfulness and self-compassion. Our experience and increasing evidence suggest that resilience can be cultivated through improv training. The Association of American Medical Colleges is leading a broad initiative to better integrate the arts, including improv, into medical education.[27] Additionally, the Accreditation Council for Graduate Medical Education Clinical Learning Environment Review initiative has a special focus on trainee well-being.[28] Drawing on an established core of effective medical improv exercises ranging in length from 5 to 20 minutes, residency training programs can select those that fit their needs for an energizing way to bolster well-being and resilience.[5–7,29,30] For faculty training, "Medical Improv Train-the-Trainer" is an annual 5-day course offered at Northwestern University for medical educators to learn exercises they can bring back to

their programs.[31] "Applied Improv" for health care professionals from the Alan Alda Center for Communicating Science is another option and is now being taught in various medical institutions worldwide.[32] In our experience, even a single improv class/workshop has the potential to foster a mindset of flexible adaptability and can carry forward into clinical encounters.[29,30] The BOX and TABLE summarize practical strategies and exercises when starting medical improv.

Creating time and space for any new training in residency can be challenging. Creative solutions may include adding improv training as part of intern orientation, dedicated wellness days, or residency retreats. With the goal of fostering the mindset of flexible adaptability, we recommend incorporating improv trainings in GME to provide tools to residents and to prepare for future stressors.

Improv training is imbued with the spirit of curiosity, discovery, and humor. It is often described as an instructive dive into laughter and positivity. Preparing residents and fellows to navigate stressors including pandemics and natural disasters, both before and after they occur, is a much-needed skill that may be enhanced by improv training and is essential for longevity in their careers.

References

1. Shanafelt TD, Sloan JA, Habermann TM. The well-being of physicians. *Am J Med*. 2003;114(6):513–519. doi:10.1016/s0002-9343(03)00117-7
2. Rodrigues H, Cobucci R, Oliveira A, et al. Burnout syndrome among medical residents: a systematic review and meta-analysis. *PLoS One*. 2018;13(11):e0206840. doi:10.1371/journal.pone.0206840
3. Seo C, Corrado M, Fournier K, et al. Addressing the physician burnout epidemic with resilience curricula in medical education: a systematic review. *BMC Med Educ*. 2021;21(1):80. doi:10.1186/s12909-021-02495-0
4. Fox S, Lydon S, Byrne D, Madden C, Connolly F, O'Connor P. A systematic review of interventions to foster physician resilience. *Postgrad Med J*. 2018;94(1109):162–170. doi:10.1136/postgradmedj-2017-135212
5. Kaplan-Liss E, Lantz-Gefroh V, Bass E, et al. Teaching medical students to communicate with empathy and clarity using improvisation. *Acad Med*. 2018;93(3):440–443. doi:10.1097/ACM.0000000000002031
6. Watson K. Perspective: serious play: teaching medical skills with improvisational theater techniques. *Acad Med*. 2011;86(10):1260–1265. doi:10.1097/ACM.0b013e31822cf858
7. Watson K, Fu B. Medical improv: a novel approach to teaching communication and professionalism skills. *Ann Intern Med*. 2016;165(8):591–592. doi:10.7326/M15-2239
8. Hoffmann-Longtin K, Rossing JP, Weinstein E. Twelve tips for using applied improvisation in medical education. *Med Teach*. 2018;40(4):351–356. doi:10.1080/0142159X.2017.1387239
9. Wood EA, Egan SC, Ange B, Gardun H, Williams DR, Wyatt TR. Association of self-reported burnout and protective factors within single institution resident physicians. *J Grad Med Educ*. 2020;12(3):284–290. doi:10.4300/JGME-D-19-00645.1
10. Howe A, Smajdor A, Stockl A. Towards an understanding of resilience and its relevance to medical training. *Med Educ*. 2012;46(4):349–356. doi:10.1111/j.1365-2923.2011.04188.x
11. Fletcher D, Sarkar M. Psychological resilience: a review and critique of definitions, concepts, and theory. *Euro Psychol*. 2013;18(1):12–23. doi:10.1027/1016-9040/a000124
12. Craske MG, Kircanski K, Zelikowsky M, Mystkowski J, Chowdhury N, Baker A. Optimizing inhibitory learning during exposure therapy. *Behav Res Ther*. 2008;46(1):5–27. doi:10.1016/j.brat.2007.10.003
13. Kim K, Lee YM. Understanding uncertainty in medicine: concepts and implications in medical education. *Korean J Med Educ*. 2018;30(3):181–188. doi:10.3946/kjme.2018.92
14. Ghosh AK. Understanding medical uncertainty: a primer for physicians. *J Assoc Physicians India*. 2004;52:739–742.
15. Felsman P, Gunawardena S, Seifert CM. Improv experience promotes divergent thinking, uncertainty tolerance, and affective well-being. *Think Skill Creativity*. 2020;35:100632. doi:10.1016/j.tsc.2020.100632
16. Gao L, Peranson J, Nyhof-Young J, Kapoor E, Rezmovitz J. The role of "improv" in health professional learning: a scoping review. *Med Teach*. 2019;41(5):561–568. doi:10.1080/0142159X.2018.1505033
17. Lewis C, Lovatt PJ. Breaking away from set patterns of thinking: improvisation and divergent thinking. *Think Skill Creativity*. 2013;9(9):46–58. doi:10.1016/j.tsc.2013.03.001
18. Eley DS, Cloninger CR, Walters L, Laurence C, Synnott R, Wilkinson D. The relationship between resilience and personality traits in doctors: implications for enhancing well-being. *PeerJ*. 2013;1:e216. doi:10.7717/peerj.216
19. Prins JT, Hoekstra-Weebers JE, Gazendam-Donofrio SM, et al. The role of social support in burnout among Dutch medical residents. *Psychol Health Med*. 2007;12(1):1–6. doi:10.1080/13548500600782214

20. Prins JT, Gazendam-Donofrio SM, Dillingh GS, van de Wiel HB, van der Heijden FM, Hoekstra-Weebers JE. The relationship between reciprocity and burnout in Dutch medical residents. *Med Educ*. 2008;42(7):721–728. doi:10.1111/j.1365-2923.2008.03041.x
21. Rabow MW, McPhee SJ. Doctoring to heal: fostering well-being among physicians through personal reflection. *West J Med*. 2001;174(1):66–69. doi:10.1136/ewjm.174.1.66
22. Fu B. Common ground: frameworks for teaching improvisational ability in medical education. *Teach Learn Med*. 2019;31(3):342–355. doi:10.1080/10401334.2018.1537880
23. Ludwig DS, Kabat-Zinn J. Mindfulness in medicine. *JAMA*. 2008;300(11):1350–1352. doi:10.1001/jama.300.11.1350
24. Brown-Johnson C, Schwartz R, Maitra A, et al. What is clinician presence? A qualitative interview study comparing physician and non-physician insights about practices of human connection. *BMJ Open*. 2019;9(11):e030831. doi:10.1136/bmjopen-2019-030831
25. Panagioti M, Geraghty K, Johnson J, et al. Association between physician burnout and patient safety, professionalism, and patient satisfaction: a systematic review and meta-analysis. *JAMA Intern Med*. 2018;178(10):1317–1331. doi:10.1001/jamainternmed.2018.3713
26. Mehta A, Fu B, Chou E, Mitchell S, Fessell D. Improv: transforming physicians and medicine. *Med Sci Educ*. 2020;31(1):263–266. doi:10.1007/s40670-020-01174-x
27. Howley L, Gaufberg E, King B. *The Fundamental Role of the Arts and Humanities in Medical Education*. Washington, DC: Association of American Medical Colleges; 2020.
28. Accreditation Council for Graduate Medication Education. CLER Evaluation Committee. CLER Pathways to Excellence: Expectations for an Optimal Clinical Learning Environment to Achieve Safe and High-Quality Patient Care, Version 2.0. https://www.acgme.org/Portals/0/PDFs/CLER/1079ACGME-CLER2019PTE-BrochDigital.pdf. Accessed October 22, 2021.
29. Fessell D, McKean E, Wagenschutz H, et al. Medical improvisation training for all medical students: 3-year experience. *Med Sci Educ*. 2019;30(1):87–90. doi:10.1007/s40670-019-00885-0.
30. Kukora SK, Batell B, Umoren R, et al. Hilariously bad news: medical improv as a novel approach to teach communication skills for bad news disclosure. *Acad Pediatr*. 2020;20(6):879–881. doi:10.1016/j.acap.2020.05.003
31. Medical Improv. https://www.medicalimprov.org. Accessed October 22, 2021.
32. Stony Brook University. Alan Alda Center for Communication Science. http://www.aldacenter.org. Accessed October 22, 2021.

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