Social Determinants, Risk Factors, and Needs: A New Paradigm for Medical Education

David Muller, MD, Alicia Hurtado, MD, Tara Cunningham, EdD, Rainier P. Soriano, MD, Ann-Gel S. Palermo, DrPH, MPH, Leona Hess, PhD, Michelle Sainté Willis, Lauren Linkowski, PhD, Beverly Forsyth, MD, and Valerie Parkas, MD

Abstract

COVID-19 and the escalation of racism and bias that has come in its wake have had a devastating impact on health professions students. In addition to academic challenges and personal health risks, aspects of students’ lives that have often gone unnoticed or inadequately addressed have come to light. Financial constraints that impact access to housing and food, neighborhood safety in light of the spike in hate crimes, and the bias inherent in the continuum from premedical education to undergraduate and graduate medical education are some examples. The authors believe that to better understand students’ lived experiences and determine how to best support them, the social determinants of health framework should be applied. This framework, the social determinants of education, encompasses concepts such as social risk factors and social needs in an effort to focus more intentionally on what can be done at a policy, institutional, and individual level. In response to the pandemic, the authors expanded their appreciation of students’ risk factors and needs by advancing the scope and refining the definitions of 3 key determinants: from well-being to the power of individual and communal resilience, from equity to centering racial justice, and from student health to public health and infection prevention. The authors propose applying this same paradigm to the lived experiences of staff in medical education, whose needs are often neglected in favor of students and faculty, and who, in many cases, were the most negatively impacted by COVID-19 of all the constituents in an academic health center.

While the impact of social factors such as poverty, work conditions, pollution, and educational level on health has long been recognized, the concept of social determinants of health came to the fore when the World Health Organization/Europe published the second edition of Social Determinants of Health: The Solid Facts in 2003. It is now widely accepted that the influence of social determinants on health is on par with factors such as genetics/biology and individual behavior.

The Centers for Disease Control and Prevention defines social determinants of health as “conditions in the places where people live, learn, work, and play that affect a wide range of health risks and outcomes.” They encompass 5 areas: access to and quality of health care, access to and quality of education, social and community context, neighborhood and the built environment, and economic stability. Specific variables within these key areas include health insurance coverage, health literacy, discrimination, workplace conditions, incarceration, poverty, employment, food and housing security, access to safe transportation, healthy foods, air and water quality, and neighborhoods free of crime and violence.

The medical education community has long recognized the impact of social factors on access to and successful progression in health professions education. Labels such as “disadvantaged” and “distance traveled” have been used to describe these factors, but have never truly captured their essence. A student whose personal and academic trajectories have been impacted by poor access to health care and education, unsafe neighborhoods, socioeconomic stress, racism and bias, and food and/or housing insecurity is, in fact, subject to the social determinants of education. To paraphrase the World Health Organization, but replacing health with education: “this unequal distribution of education-damaging experiences is not in any sense a ‘natural’ phenomenon but is the result of a toxic combination of poor social policies, unfair economic arrangements, and bad politics.”

Taking the paradigm of social determinants of health one step further, Alderwick and Gottlieb distinguish between social determinants (structural factors, such as public policy on housing and social security), social risk factors (individual-level adverse conditions, such as housing insecurity and poverty), and social needs (expressed individual preferences and priorities). While determinants may shape health for better or worse, risk factors have an inherently negative influence, and needs vary depending upon the patient’s context and in-the-moment desires.

Social determinants of medical education (and health professions education more broadly) fit neatly into this rubric. They exert their impact on both the systemic and individual levels. For example, policy that determines access to and quality of public school education (determinant) influences premedical school risk factors (the rigor of one’s science preparation, resources for test taking and study skills, and access to career advising in high school and college). Macroeconomic policy and the distribution of wealth (determinant) influence medical school risk factors (the affordability of exam preparation resources, social capital to navigate the professional environment, and the cost of applying to residency programs).
A devastating but entirely predictable lesson learned from the COVID-19 pandemic has been the disproportionate impact on communities of color and communities at the lower end of the socioeconomic spectrum. Existing pre-COVID health disparities became chasms. The pandemic worsened every social determinant of health.

And so it has been with the social determinants of medical education. During the pandemic, the impact of poor access to care, illness and death, loss of employment, food and housing insecurity, escalations of racism and bias, and the attendant deterioration of mental health has been profound, especially for students and their families whose lives were already deeply affected by social risk factors. The lesson to take away is not merely a reminder of how important social determinants are, it is that they are the most important variables determining learners’ successful entry, progression, and completion of medical education—they are foundational.

Throughout the pandemic, the work and thinking of the medical education team at Icahn School of Medicine at Mount Sinai (ISMMS) evolved to accommodate this expanded appreciation of our students’ risk factors and needs, as well as the growing urgency of those needs. We increasingly focused our attention on the ways in which the social determinants of education were influencing 3 intersecting elements of support for students: their physical health, well-being, and the degree to which inequity pervades their learning experience. In tracing the evolution of our approach, we have pivoted from well-being to the power of individual and communal resilience, from equity to centering racial justice, and from student health to public health and infection prevention.

These 3 themes are addressed in the following sections, each of which begins with a scenario that has been deidentified by combining real circumstances from different students. We have intentionally left these scenarios unresolved to better reflect the complexity and uncertainty of navigating medical school during the pandemic.

From Well-Being to Individual and Communal Resilience

Jessica was excited and nervous about returning to campus for her second year of medical school. She knew that circumstances were less than ideal—classes were fully remote and many of her classmates, upon whom she relied for support, were learning from home. Leaving behind her single parent and teenage siblings in the Midwest made Jessica feel guilty and worried about them. She had always been the primary emotional and social support for her younger sisters. Her mother asked her to remain at home to help with her siblings’ schooling while her mother worked as a housekeeper. At the same time, Jessica knew that moving to the student residence for remote learning would provide more privacy, easier access to resources if she needed them, and would reconnect her with friends and peers.

Jessica had always been good about reaching out for support at school. She looked forward to catching up with her faculty advisor and mentors, but continuing treatment at the student mental health clinic was difficult: her family believed that only the weak experience mental health symptoms. Jessica accepted the importance of reaching out for help when her faculty advisor shared her own struggles with anxiety.

Before the pandemic, physician and student well-being and attention to burnout prevention were woven into the fabric of medical education. And yet, with more than half of practicing physicians reporting at least one symptom of burnout pre-COVID, the stress of teaching students and caring for patients during the pandemic surpassed this concerning baseline. Medical students have also self-reported dramatically higher rates of depression, anxiety, and psychological distress.

The pivot

We shifted our approach to well-being when we realized that messages around remaining “well” felt invalidating in the face of overwhelming COVID-related circumstances. It was disingenuous, for example, to send our students tips on staying well when all were experiencing so much loss and pain. Our tone instead focused on how grief and sadness are normal reactions and encouraged a less judgmental stance about those feelings. We emphasized that it is important to experience such emotions to process loss. Our school’s medical education community needed to acknowledge the feeling in the air: of hospital wards not always being a place of triumph and success; of medical school and medical practice sometimes feeling futile; of how our shared experiences with sadness, grief, and exhaustion made us stronger by virtue of being shared.

This past year quickly brought to the surface what some of us have long suspected: that the pursuit of achieving and maintaining well-being can have the opposite effect by invalidating feeling unwell and experiencing normal difficult emotions. Well-being must include being able to tolerate the good and the bad, and acknowledge that life can, at times, be both beautiful and tragic, predictable and uncertain, under control and completely overwhelming.

Accepting that these moments of difficulty will occur allows all of us to feel less shame and isolation when they arise, and instead focus on securing the support we need to process those feelings. We must accept that there is value and an opportunity for growth in the range of emotions that we experience. Emotions help us learn more about ourselves and how we process difficult situations. It is important to encourage our students, staff, and faculty to be less afraid of emotions; identify when emotions require more support; and be aware of the available resources when challenging emotions arise.

A career in medicine inherently means there will be many situations in which we are not going to feel well. This does not mean we must accept always feeling unwell. But when those moments present themselves, we will be prepared to tolerate those difficulties, seek out the support we need, and, if possible, continue with our responsibilities. A critically important element is having mechanisms in place to allow time for self-care as a formal priority. Examples include having backup coverage while on the wards, well-being days for residents, and weekly flex-time that allows students to take care of well-being needs such as doctor’s appointments.

Impact

Communal resilience. Due to mandated social distancing, we have all been at increased risk for social isolation and loneliness, which can lead to poorer physical and mental health outcomes and an increased need for social support,
essential to decreasing distress and improving well-being.13

For this reason, efforts to address well-being must prioritize community building by maximizing the benefit of already established learning communities that allow smaller cohorts of students and faculty to learn, work, and socialize together. Brandl et al14 found that any type of longitudinal small groups fostered students’ connectedness with each other and with faculty. Feeling part of an established community allows individuals to access help when it is needed. We capitalized on that camaraderie by creating social events to help learners overcome the many challenges that life in medical school presents.

Creating community events while respecting infection prevention protocols required creativity and close collaboration with medical student leaders, faculty, and staff. These events brought together members of the school and health system with whom our students train, such as the commemoration that was held in honor of those we lost during the pandemic, which included staff, faculty, and students.

This communal resilience demonstrated our ability to face challenges together and be “unwell,” and with time bounce back until the next challenge was faced. Acknowledging the reality of these moments does not signal weakness or powerlessness. It takes strength and courage to acknowledge fragility and believe that circumstances will not break us, but will make us stronger. Accepting our own vulnerability leads to increased reliance on each other, which leads to greater resilience for all.

Individual resilience. Identifying and having the tools to manage difficult states, knowing when to ask for help, and using moments of difficulty as opportunities for growth are the elements of individual resilience. Our messaging has shifted from “I am strong” to “it is ok if I am not feeling strong.” Acknowledging this reality lessens stigma and shame and begins to chip away at the idea that only the weak do not feel well at times.

For example, in a series entitled “Keeping it Real,” faculty share how they have faced failures and challenges, learned from setbacks, and how they apply those lessons to the personal and professional pitfalls they continue to confront. Topics have included social anxiety, public speaking, racism and bias, the burden of failing to protect loved ones from bad medical outcomes, and post-traumatic stress disorder resulting from military service.

Risk. It is also important to proactively identify those around us who are more at risk. This includes students who are: coping with increased academic pressure, lacking social support because they are from out of state, feeling excluded or discriminated against because they have marginalized intersecting identities, coping with their own or their family’s financial crises and caregiving responsibilities, or experiencing challenges related to their history of mental illness. Our preventive approach dedicates time to discuss these students during advisors’ learning community reviews, reach out to students regularly, and develop interventions that maximize their ability to cope without compromising their desired goals.

The pandemic highlighted the importance of frequent, intentional, and authentic communication related to well-being. This was especially important as policies and procedures were rapidly evolving and the uncertainty around academic progression resulted from suspended clinical rotations, suspended national board examinations, and a moratorium on visiting rotations. Our communications have come in the form of class meetings, town halls, phone calls to students from their faculty advisors, and regular email messages from faculty and wellness advisors addressing individual student needs. A forum to consolidate and disseminate vast amounts of high-yield information to all students became routinely known as the “Daily Digest.” Now distributed weekly, it remains the single source of information and frequent reminders.

From Equity to Centering Racial Justice

Steven, an MD–PhD student, is married and has a child. His Step 2 CK exam date was canceled by Prometric. Because he is applying for a competitive surgical subspecialty and hoped to take the exam before submitting his residency application, Steven opted to fly to another state to take the test. The week before his flight his grandfather was attacked and robbed on the way home from church. The assailants used anti-Asian racial slurs and the police identified the incident as a hate crime. Steven’s parents care for his grandfather in their home and both work full-time. Steven was torn between flying out of state for Step 2 CK, being home to help care for his son, whose daycare had shut down since the start of the pandemic; and meeting his family’s expectation that he help care for his grandfather during his recuperation from the attack.

Racism and bias perpetuate inequitable outcomes in terms of admission to and graduation from medical school, as well as acceptance into and successful completions of competitive residency programs.15 In response, many institutions have developed initiatives that have advanced the concept of equity as a widely recognized principle in medical education. For example, equity is a cornerstone principle of holistic review16 and has informed the emerging work of an integrated holistic student affairs model.17

Starting in 2015, we made a commitment to be free of racism and bias in medical education. Equity—the experience of freedom from bias or favoritism, where everyone has the opportunity to attain their full potential and no one is disadvantaged or favored due to socially determined circumstances—has guided our approach to education, research, clinical care, and service to society. The COVID-19 pandemic and accompanying amplification of racism revealed the true depth of inequity experienced by our faculty, staff, and students. Our existing efforts to address racism and bias in medical education14 informed our shift from equity to a focus on centering racial justice.

The pivot

Racism has always been the most profound organizing principle in American society. It determines the distribution of privilege, resources, social capital, and opportunity. The past year featured a set of conditions that had a disproportionately destructive impact on the lives of faculty, staff, and students with multiple marginalized social identities. The intersection of these events revealed the need to recognize racial justice as our organizing principle. Achieving equity was no longer good enough.
Impact

Learning environment. Educational inequity was amplified by the pandemic. Required educational activities had to be conducted remotely regardless of students’ differing learning styles, exacerbating disparities in access to and quality of education.\(^{19,20}\) Students had to quickly adapt to online learning despite differences in technological fluency, access to equipment, and unreliable Internet connectivity.\(^{21}\) In response, we tried to achieve equity by covering the cost of items such as furniture for homes that were not well suited for studying, iPads, WiFi devices, and WiFi upgrades for any student who expressed a need for these resources.

The culture of medical education has always had a differential impact on students who are under-represented in medicine (URiM). All medical students are socialized to adopt the values, attitudes, and normative behaviors of the medical profession.\(^{22}\) Those who identify as URiM due to their race may feel pressure to reject symbols of minority identity in favor of white identity.\(^{23-27}\) Counteracting stereotypes and making up for the lack of role models also require additional cognitive energy. The cumulative impact of this nonaffirmation can have a devastating impact on well-being. For students who are URiM, this social isolation\(^{28}\) was always there. COVID made that social isolation devastating.

Students. Early in the pandemic, the school’s chapter of the Asian Pacific American Medical Students Association (APAMSA) expressed growing concern about the rise in anti-Asian scapegoating and hate crimes across the country. This resulted in a statement of solidarity from the school and health system leadership. Our Racism and Bias Initiative (RBI) and Office for Diversity and Inclusion partnered with APAMSA to co-host a series of conversations focused on “Racism in the Time of COVID-19.” These sessions were part of the RBI’s “Chats for Change”—dialogues centered on racism and bias in medicine and launched in 2018.

Taken together, COVID-19 and the escalation in racist activities have demonstrated how important it is to center racial justice and sustain structures that explicitly name and address racism and other forms of oppression. Chats for Change topics have included responding to COVID-19 racism, deconstructing privilege during a crisis, developing an antiracist crisis response, evaluating the racial inequity embedded in terms such as “essential workforce,” acknowledging and mourning the murder of George Floyd, promoting a space for racial healing, and processing pre- and post-presidential election events.

Staff. The pandemic exposed and widened racial inequities among our staff. Frontline staff with the lowest salaries and from communities that were the hardest hit by COVID-19 were disproportionately redeployed, furloughed, and had their workload increased because of new hybrid learning environments. In May 2020, our Employee Engagement Committee launched the “All in Together” campaign, which included feedback sessions and addressed staff concerns, needs, and ideas about working remotely and returning to the office. This paradigm for shared decision making and participation increased our collective capacity to respond to COVID-19 and foster meaningful engagement during a time when all of our staff were working remotely. We were able to identify disproportionate consequences among those most affected, and develop staff-centric strategies and resources. Interventions to achieve equity included covering the cost of laptops, printers, and additional screens for staff who requested them, as well as transportation costs for staff who had mandatory in-office tasks.

By centering racial justice, we are evolving from a reactive posture of trying to address inequity when we see it, to a deliberate, proactive, preventive approach that is woven into the fabric of how we think and work. This approach is not without its challenges, not least of which is the difficulty of transforming a culture while at the same time putting out racist brushfires and meeting the complex needs of running a medical school during a pandemic.

From Student Health to Public Health and Infection Prevention

Samuel was completing his second year of medical school when he contracted COVID-19. He marginally passed his last classes of the year while in isolation, but he could not study for the Step 1 exam and had to cancel his test date. He struggled on his first clerkship, failed his first Shelf exam, and successfully remediated it. He then missed time from a subsequent clerkship because his roommates had been exposed to COVID-19 while on clinical rotations. Samuel was worried about failing behind, and 2 looming board exams felt like his goal of graduating from medical school on time was slipping out of reach. He was feeling demoralized and lonely and had not been home in months for fear of exposing his father, who was undergoing chemotherapy and radiation for lung cancer.

The pivot

Before the pandemic, the physical health of students was the sole responsibility of student health services, distinct from medical education. Once the pandemic struck, it became clear that every decision we made—pulling students from the clinical arena, converting the curriculum to remote learning, bringing students back into the clinical arena, running a hybrid preclerkship curriculum, housing, travel—was infused with infection prevention precautions. The student health lens widened to encompass the public health of an entire educational institution—students, faculty, and staff—and the patients and surrounding communities we serve.

This approach was effective at keeping our students safe and also required a focus on the principles of justice and equity, framed by the social determinants of health and education. Those members of our community who were more vulnerable—with underlying illnesses, increased family responsibilities, fewer economic and other resources, more fragile living circumstances, and marginalized identities—were in greatest need of support. This came in many forms, including assisting with the cost of meals, nonpublic transportation to all clinical sites, rent abatements, care kits (acetaminophen, thermometer, and pulse oximeter), and safety kits (branded mask, personal protective equipment [PPE], bag to carry PPE, hand sanitizer).

Very early in the pandemic, cases were rising and testing was largely unavailable. Only students with severe symptoms were sent to the emergency...
department and tested. Many students were diagnosed with presumptive mild COVID-19 and advised to “self-isolate.” As cases increased dramatically, the health of the community became more prominent. Infection prevention became the overarching lens through which we examined and managed the physical health of our students.

Impact
Early in New York City’s surge we converted our preclerkship students from in-person to remote learning, removed our clinical students from their clerkships and electives, and encouraged students to move out of congregate housing. For many students, school housing was the only stable housing available to them, but remaining on campus meant sacrificing the support of family. Another cohort of students did move home with family, but then had family responsibilities that interfered with their ability to fully engage with curricular activities. Decreasing the density in student housing illuminated the inequities within the student population and had unanticipated impacts on students.

With long-term social distancing, masking, and sheltering-in-place, many members of our community craved time with loved ones. Travel was discouraged, but many students, faculty, and staff traveled for Thanksgiving and the winter holidays. In response, testing and quarantining protocols were dynamic, based on infection rates, testing capacity, and evolving scientific knowledge. These protocols often required enormous resources; for example, at the end of winter break, we tested hundreds of students and quarantined them in local hotels.

Students’ personal circumstances impacted their ability to manage our risk mitigation strategies. Despite the school covering the costs of testing and quarantine, students with fewer financial resources could not afford to order food deliveries during quarantine. The school responded by assisting with the cost of meals. Many students were exposed to infected family members while at home. Students with more financial resources were able to self-isolate before returning to campus; others needed institutionally supported quarantine housing. Some students were exposed while providing family caretaking in crowded, multigenerational homes. One student called us on the way back to campus after having had a COVID+ household contact. He was worried about his educational progression and, as a student with Deferred Action for Childhood Arrivals (DACA) status and nowhere else to isolate, felt compelled to return to campus despite immense concern about his loved ones.

A positive COVID test for a student meant that all housemates, social contacts, and academic contacts needed to quarantine. Maintaining a test positivity rate around 1% at a time when community rates were upward of 10% sometimes required extreme preemptive measures, such as dividing an entire apartment of 6 students into separate apartments as they exposed each other sequentially, rearranging clerkship schedules for sick students and their contacts, and investigating clusters of students who went to a socially distanced community-building event.

What About Our Staff?
The duration, persistence, and negative effects of the pandemic profoundly impacted the mental health of our administrative staff. Although there has been increased acknowledgment of the need to address the well-being of medical students and faculty in recent decades, the well-being of medical school administrative staff has been largely ignored.

In many instances, staff were impacted more deeply than students. Examples included staff with medical comorbidities, in high-risk age groups, from communities of color, with school-age children at home, and/or with long commutes via public transportation. The intersection of the burdens of home and work led to many of our midlevel and senior managers experiencing burnout and emotional fatigue. These staff bore the brunt of caring for their teams and the learning environment, on top of personal loss and the lack of access to colleagues and work spaces that historically contributed to their well-being.

The role of the team became more important than ever in accomplishing daily required tasks. Divisions of labor were blurred as each member of the team cross-covered different roles. Collective leadership by all senior staff “pulling together” led to increased trust and the willingness to embrace vulnerability.

By the summer of 2020, we found ourselves trying to envision what a return to our offices would look like. How many days a week and hours a day does it take for an office to feel open or student-facing? What tasks could be dispensed with, and which were indispensable? Was it inevitable that the lowest-paid employees, with the longest commutes by public transportation and the heaviest reliance on a fragmented public school system, would be compelled to work in person? Were socioeconomic inequity and racial injustice going to play a part in this aspect of the pandemic as well?

A new cadre of leaders consisting of midlevel managers and staff was established to create and implement a return to office (RTO) strategy that would include identifying new roles and responsibilities for each team. We created “RTO champions” and “reimagine facilitators,” who worked with divisional teams to think creatively about work options, space capacity thresholds that allowed for infection prevention protocols, and coordinated schedules on a global calendar. The Center for Community Investment’s strategy triage tool was incorporated into the RTO initiative. It allowed our teams to create a framework for identifying new and emerging priorities: what we would need to continue, what could be paused, and what tasks and responsibilities would no longer be required to complete our work? We trained facilitators in each division and held team meetings so that each area could create a new, self-defined scope of work.

The goal was to empower teams to identify, prioritize, and execute plans with input from every member of every team, while maintaining our focus on equity and ownership, especially at a time when so much of life at home and at work was out of anyone’s control. Weekly communications, frequent town hall meetings, and the ability for all voices in the department to be heard were and continue to be essential.
There also continue to be pitfalls and challenges. We have still not fully returned to campus, and there remains resistance on the part of many to relinquish what was, pre-pandemic, to embrace what could be given the lessons the pandemic has taught us. Prioritizing equity across all our staff is the stabilizing force that we believe is needed to close the fissures left by the pandemic.

A Final Thought

The social determinants of health paradigm helps describe the impact of social risk factors, such as systemic racism, poverty, housing and food insecurity, and immigration status, on medical education. These social determinants of education are the fundamental drivers of access to and success in medical school. On the privileged end of the scale are students who have had access to assets such as private high schools, exclusive colleges, family and friends who serve as mentors in science and medicine, and private tutors. These students, for the most part, know no different; it is the way they were raised and it is what they have been taught to expect. These students do not have it easy in medical school, but they do have a leg up, and they will never experience the profound barriers that confront students on the disadvantaged end of the scale. To succeed, students without these privileges have to develop the kind of resilience, resourcefulness, self-sacrifice, integrity, and dignity that medical schools claim to prize in future physicians.

In addressing these barriers to equitable education, it is useful to return to the social determinants/risk factors/needs rubric to better appreciate when an intervention (policy change) is actually impacting an upstream determinant, and when an intervention (new resource) is impacting risk factors that are further downstream. Both are critically important. The former has more long-lasting implications and is more broadly effective, while the latter has the potential to offer more immediate relief. Chart 1 contrasts a sampling of these interventions at our school. It should come as no surprise that, whether the ultimate goal is health or education, it is far easier to address social risk factors and the immediate needs of individuals or even small groups, than it is to fundamentally change policy so that a risk factor is mitigated or eliminated across an entire population.

Similarly, social determinants are fundamental drivers for maintaining employment and health for members of our staff and faculty who are from marginalized communities. They are critical partners in our ability to conduct medical education activities in a just and equitable work and learning environment.

As a final consideration, we propose another definition for "social determinants of medical education." In this case, we are using the term to better understand what determines a student’s choice to pursue a career as a physician or physician–scientist. There are many answers to this question. They range from peer and parental pressure to intellectual curiosity, social status, job security, family legacy, and the desire to help people.

The pandemic has also made its impact felt here, by adding a social determinant unlike any we have seen since the early days of the HIV epidemic. Who would have imagined that becoming a physician could carry such enormous risk to one’s personal health and safety?

There will undoubtedly be preprofessional students who want nothing to do with health care given these newly defined risks. Others will flock to the profession because they see the COVID pandemic and accompanying racism as a stronger-than-ever call to this noble profession. And some will answer the question “Why medicine?” through the lens of their lived experiences during this time. They will be steeped in a critical consciousness that is deeper and broader than cultural competence or health disparities. Their eyes have been opened to the profound failure of systems and structures that drive inequity and injustice in health care. These are the physicians of the future.

Acknowledgments: The authors would like to acknowledge the heroic efforts of staff, students, and faculty in preserving the quality, safety, and dignity of the learning environment during the COVID-19 pandemic.

Funding/Support: None reported.

Other disclosures: None reported.

Ethical approval: Reported as not applicable.

---

Chart 1

| Targeting Determinants, Risk Factors, and Needs | Interventions addressing social determinants | Interventions addressing social risk factors and immediate social needs |
|------------------------------------------------|---------------------------------------------|-----------------------------------------------------------------------|
| Establish a permanent resource pantry          | Provide emergency free meals                |                                                                       |
| Implement a learning communities model that incorporates wellness advisors and an associate dean of student well-being | Make available: virtual social events and gatherings; gift cards; targeted listening sessions with student affinity groups; expanded access to student mental health resources; stipends to help financially disadvantaged students with basic needs, such as rent and clothing | Extend provision of free board review resources (UWorld, Pathoma) to help cope with delayed Step exams |
| Change Shelf exams to pass/fail scoring; change Step exams from progression requirement to graduation requirement | | Provide: accommodation for quarantine/isolation; easy access to testing and vaccination; financial support for private transportation to clinical sites (avoiding public transportation); safety kits; care kits |
| Establish policies to address: quarantine/isolation; travel; COVID testing; symptom screening tracking; contact tracing; visitors in congregate housing | |                                                                       |

---

D. Muller is professor, Departments of Medical Education and Medicine, Icahn School of Medicine at Mount Sinai, New York, New York.

A. Hurtado is assistant professor, Departments of Medical Education and Psychiatry, Icahn School of Medicine at Mount Sinai, New York, New York.

T. Cunningham is associate professor, Department of Medical Education, Icahn School of Medicine at Mount Sinai, New York, New York.

R.P. Soriano is professor, Departments of Medical Education and Geriatrics and Palliative Care, Icahn School of Medicine at Mount Sinai, New York, New York.

A.S. Palermo is associate professor, Departments of Medical Education and Pediatrics, Icahn School of Medicine at Mount Sinai, New York, New York.
L. Hess is senior director of strategy and equity education programs, Icahn School of Medicine at Mount Sinai, New York, New York.

M.S. Willis is senior associate dean for medical education administration, Icahn School of Medicine at Mount Sinai, New York, New York.

L. Linkowski is director of programs and resources for academic excellence, Icahn School of Medicine at Mount Sinai, New York, New York.

B. Forsyth is associate professor, Departments of Medical Education and Medicine, Icahn School of Medicine at Mount Sinai, New York, New York.

V. Parkas is associate professor, Departments of Medical Education and Medicine, Icahn School of Medicine at Mount Sinai, New York, New York.

References

1. Wilkinson R, Marmot M, eds. Social Determinants of Health: The Solid Facts. Copenhagen, Denmark: World Health Organization; 2003. https://www.euro.who.int/__data/assets/pdf_file/0005/98438/e81384.pdf. Accessed October 29, 2021.

2. Schroeder SA. Shattuck Lecture. We can do better—improving the health of the American people. N Engl J Med. 2007;357:1221–1228.

3. Centers for Disease Control and Prevention. About social determinants of health. https://www.cdc.gov/socialdeterminants/about.html. Accessed October 29, 2021.

4. Commission on Social Determinants of Health. Closing the Gap in a Generation: Health Equity Through Action on the Social Determinants of Health. Final Report of the Commission on Social Determinants of Health. Geneva, Switzerland: World Health Organization; 2008. https://apps.who.int/iris/bitstream/handle/10665/43943/9789241563703_eng.pdf?sequence=. Accessed October 29, 2021.

5. Alderwick H, Gottlieb LM. Meanings and misunderstandings: A Social Determinants of Health lexicon for health care systems. Milbank Q. 2019;97:407–419.

6. Price-Haywood EG, Burton J, Fort D, Seoane L. Hospitalization and mortality among Black patients and White patients with Covid-19. N Engl J Med. 2020;382:2534–2543.

7. Millett GA, Jones AT, Benkasser D, et al. Assessing differential impacts of COVID-19 on black communities. Ann Epidemiol. 2020;47:37–44.

8. Reese P. High-poverty neighborhoods bear the brunt of COVID’s scourge. Kaiser Health News. https://khn.org/news/article/high-poverty-neighborhoods-bear-the-brunt-of-covids-scourge. Published December 16, 2020. Accessed October 29, 2021.

9. Dandar VM, Grigsby RK, Bunton SA. Burnout among U.S. medical school faculty. AAMC Analysis in Brief. https://www.aamc.org/media/9921/download. Published February 19, 2019. Accessed October 29, 2021.

10. Arima M, Takamiya Y, Puruta A, Siritratisavong K, Tsuchiya S, Izumi M. Factors associated with the mental health status of medical students during the COVID-19 pandemic: A cross-sectional study in Japan. BMJ Open. 2020;10:e034728.

11. Saraswathi I, Saikarthik J, Senthil Kumar K, Madhan Srinivasan K, Ardhanaari M, Gunapriya R. Impact of COVID-19 outbreak on the mental health status of undergraduate medical students in a COVID-19 treating medical college: A prospective longitudinal study. PeerJ, 2020:e81064.

12. Leigh-Hunt N, Bagguley D, Bash K, et al. An overview of systematic reviews on the public health consequences of social isolation and loneliness. Public Health. 2017;152:157–171.

13. Bore M, Kelly B, Nair B. Potential predictors of psychological distress and well-being in medical students: A cross-sectional pilot study. Adv Med Educ Pract. 2016;7:125–135.

14. Brandl K, Schneid SD, Smith S, Winegarden B, Mandel J, Kelly CJ. Small group activities within academic communities improve the connectedness of students and faculty. Med Teach. 2017;39:813–819.

15. Lucey CR, Hauer KE, Boatright D, Fernandez A. Medical education’s wicked problem: Achieving equity in assessment for medical learners. Acad Med. 2020;95(12 suppl):S98–S108.

16. Association of American Medical Colleges. Holistic review. www.aamc.org/services/member-capacity-building/holistic-review. Accessed October 29, 2021.

17. Alderwick H, Gottlieb LM. Meanings and misunderstandings: A Social Determinants of Health lexicon for health care systems. Milbank Q. 2019;97:407–419.

18. Hess L, Palermo AG, Muller D. Addressing and undoing racism and bias in the medical school learning and work environment. Acad Med. 2020;95(12 suppl):S44–S50.

19. Association of American Medical Colleges. Important guidance for medical students on clinical rotations during the coronavirus (COVID-19) outbreak. https://www.aamc.org/news-insights/press-releases/important-guidance-medical-students-clinical-rotations-during-coronavirus-covid-19-outbreak. Published Mar 17, 2020. Accessed October 29, 2021.

20. Southworth E, Gleason SH. COVID-19: A cause for pause in undergraduate medical education and catalyst for innovation. HEC Forum. 2021;33:125–142.

21. Rose S. Medical student education in the time of COVID-19. JAMA. 2020;323:2131–2132.

22. Dickinson K, Levinson D, Smith SG, Humphrey HJ. The minority student voice at one medical school: Lessons for all? Acad Med. 2013;88:73–79.

23. Griffith EE, Delgado A. On the professional socialization of black residents in psychiatry. J Med Educ. 1979;54:471–476.

24. Gardner SK. Fitting the mold of graduate school: A qualitative study of socialization in doctoral education. Innow High Ed. 2008;33:125–138.

25. Beagan BL. Neutralizing differences: Producing neutral doctors for (almost) neutral patients. Soc Sci Med. 2000;51:1253–1265.

26. Frost HD, Regehr G. "I am a doctor"—Negotiating the discourses of standardization and diversity in professional identity construction. Acad Med. 2013;88:1570–1577.

27. Weidman JC, Twale DJ, Stei EL. Socialization of graduate and professional students in higher education: A perilous passage? ASHE-ERIC Higher Education Report. San Francisco, CA: Jossey-Bass Publishers, Inc.; 2001.

28. Gomeza EP, Stoll B. The Color of Medicine: Strategies for Increasing Diversity in the U.S. Physician Workforce. Boston, MA: Community Catalyst; 2002. https://www.communitycatalyst.org/doc-store/publications/the_color_of_medicine_apr02.pdf. Accessed October 29, 2021.

29. Urquilla M. Reimagining strategy in the context of the COVID-19 crisis: A triage tool. Center for Community Investment Blog. https://centerforcommunityinvestment.org/blog/reimagining-strategy-context-covid-19-crisis-riage-tool. Published March 31, 2020. Accessed October 29, 2021.

30. Samuels-Kalow ME, Ciccolo GE, Lin MP, Schoenfeld EM, Camargo CA Jr. The terminology of social emergency medicine: Measuring social determinants of health, social risk, and social need. J Am Coll Emerg Physicians. 2020;1:852–856.