

**National Student Response Network (NSRN):  
A Model for Mobilizing the Untapped Workforce of 600,000 Health Professions Students  
for COVID-19 Vaccination Efforts to Support the Overburdened Healthcare Workforce**

Apurv Hirsh Shekhar,<sup>1,2,3</sup> Terence M. Hughes,<sup>1,4</sup> Blake Shultz,<sup>2,3</sup> Jane Harter,<sup>1,5</sup> Mehul Mehra,<sup>1,6</sup>  
Urja Merchant,<sup>1,7</sup> Ashten Duncan,<sup>1,8</sup> Jessica Gillespie,<sup>1,9,10</sup> Vinh Ngo,<sup>1,11</sup> Celena Ho,<sup>1,12</sup>  
Alexis Gutierrez,<sup>1,13</sup> Samantha Sadler,<sup>1,13</sup> and Jalen Benson<sup>1,13</sup>

<sup>1</sup>National Student Response Network, Inc., Cambridge, MA 02139

<sup>2</sup>Yale School of Medicine, New Haven, CT 06510

<sup>3</sup>Yale Law School Solomon Center for Health Law and Policy, New Haven, CT 06510

<sup>4</sup>Icahn School of Medicine at Mount Sinai, New York, NY 10029

<sup>5</sup>Loyola Stritch School of Medicine, Maywood, IL 60153

<sup>6</sup>Medical College of Georgia, Augusta, GA 30912

<sup>7</sup>Campbell University School of Osteopathic Medicine, Lillington, NC 27546

<sup>8</sup>The University of Oklahoma-Tulsa School of Community Medicine, Tulsa, OK 74135

<sup>9</sup>University of Wisconsin School of Medicine and Public Health, Madison, WI 53792

<sup>10</sup>Wisconsin Academy for Rural Medicine at University of Wisconsin, Madison, WI 53792

<sup>11</sup>Touro College of Osteopathic Medicine, Middletown, NY 10940

<sup>12</sup>Medical College of Wisconsin Pharmacy School, Milwaukee, WI 53226

<sup>13</sup>Harvard Medical School, Boston, MA 02115

**Corresponding Author:** Apurv Hirsh Shekhar ([hirsh.shekhar@yale.edu](mailto:hirsh.shekhar@yale.edu))

**Abstract (272/300 words):** Involving health professions students in COVID-19 mass vaccination efforts is essential to realizing vaccinations for all. We identify two key challenges to COVID-19 mass vaccination. First, our healthcare workforce is already overburdened and forced to make tough decisions on how to allocate limited person-power. This prevents efficient, rapid distribution of vaccinations. The over 600,000 health professions students in the United States are an untapped, eager, and altruistic volunteer workforce that we must mobilize to support and augment the vaccination workforce. Second, medical mistrust may reduce vaccine uptake and prohibit herd immunity. Existing channels have not been effective in engaging historically marginalized communities, which threatens equitable access and delivery. Health professions students hail from communities across the country and are uniquely positioned to be community-trusted sources for science communication in the communities they call home. To enable involvement of properly trained health professions students, National Student Response Network (NSRN) and our partners offer policy proposals, including explicit eligibility, expanded liability protections, and the possibility of a federal program for service with NSRN as a model. We also offer NSRN as a model for grassroots mobilization. We are a 501(c)(3) non-profit network of over 6,000 health professions students across the country, who have been serving our communities and helping hospitals, health departments, and non-profits since April 2020. We have refined our structure and platforms to prepare for increased scale while preserving our grassroots responsiveness to local needs. We are also in early conversations with key, national partners in industry and government. We urge state and federal policymakers, relevant industries, and academia to involve health professions students in vaccination, and we welcome allies and collaborators.

**The essay of 1480 words (limit: 1500) begins on the following page.**

## **§1 Introduction: “Vaccines Don’t Save Lives; Vaccinations Save Lives” (Orenstein, 2019)**

COVID-19 mass vaccination faces significant challenges, including an overburdened healthcare workforce and medical mistrust. Health professions students are uniquely positioned to address these critical challenges. With many states expecting financial challenges to complicate vaccination plans, we cannot afford to delay mobilizing the over 600,000 health professions students in the United States (CDC, 2017; AACN, 2014; CNBC, 2020).

Here, we present the National Student Response Network (NSRN), a student-led 501(c)(3) network of 6,000 health professions students founded to serve our communities during the COVID-19 pandemic. We offer NSRN as a model for the mobilization of health professions students in mass vaccination efforts.

## **§2 Challenges for COVID-19 Vaccination Efforts: Workforce and Communication**

Successful mass vaccination will require addressing two key challenges nationwide: (1) expanding the vaccination workforce given the unprecedented burdens on the existing healthcare system, and (2) engaging in grassroots community outreach and science communication to promote evidence-based understanding of the COVID-19 vaccine and ensure equitable delivery.

*(1) Expanding the vaccination workforce:* This pandemic has pushed our healthcare workforce and many of our front-line workers to and past their mental, physical, and emotional limits (Yong, 2020). Additionally, redirecting resources to COVID-19 has delayed other forms of care, including important surgeries (CMMS, 2020; ACS, 2020). We have workforce shortages in healthcare and public health, and our existing workforce is overburdened, resulting in difficult decisions on how to allocate attention. Mass vaccination represents yet another significant demand on a healthcare workforce that is already stretched thin. Expanding the vaccination workforce in a feasible, affordable manner is paramount to the success of mass vaccination efforts.

*(2) Engaging in grassroots community outreach:* Immunization rates have been falling due to medical mistrust, distrust in government and expert opinion, and anti-vaccination campaigns (Thomas, 2020). In fact, a recent poll estimated that only 58% of Americans would choose to be vaccinated when the vaccine become available to them, which is below the 70-90% vaccination coverage required to achieve herd immunity (Gallup, 2020; Hill, 2020). Medical mistrust is widespread due to health disparities, historical loss of trust, unethical research, negative personal experiences with the healthcare system, and systemic barriers to accessing care (NYT, 2020). Centering community-based communication can help. Some individuals are more receptive to science communication from members of their own community, such as health professions students, and we have already seen the importance of community-based approaches for COVID-19 testing (NYCHH, 2020). Health professions student volunteers across the country stand ready to communicate evidence-based information about the vaccine’s efficacy, purpose, and risk profile, particularly in underserved communities. Intentional, focused communication that centers community members has the potential to increase equitable access and vaccine uptake.

## **§3 The Unique Value of Including Health Professions Students as Part of the Solution**

In addition to being a large volunteer workforce for vaccine administration and being positioned to engage in effective, community-centered science communication, health professions students are also qualified to help in roles such as contact tracing, logistics and vaccination clinic operations, and patient follow up for a second vaccination, which is required for efficacy.

There is strong precedent for training and involving health professions students in vaccine administration, including for influenza and during the H1N1 pandemic (Hunter, 2010). For example, the Flu Crew at Stanford University School of Medicine started in 2001 and now

administers 3,000 influenza vaccinations per year in the Bay Area community (SMSA, 2020; Rizal, 2015). Student preparedness is ensured through training modules, which include a scientifically rigorous understanding of the influenza vaccine, proficiency in answering patient questions about the vaccine, observation and knowledge of intramuscular injection, and practice administering intramuscular injections under supervision. Once trained, medical students of any year, including first year, are able to provide vaccinations in the community. Another example is the Oregon Adult Immunization Coalition, which trained nursing and pharmacy students to annually administer 6,000 vaccine doses across five vaccines and over 4,000 clinical learning hours for Oregon students (UMN CIDRAP, n.d.). Further, pharmacy students are regularly involved in vaccinations and receive an immunization delivery certification (specifically, Pharmacy-Based Immunization Delivery Certification from the American Pharmacists Association) as part of the second-year curriculum at accredited pharmacy schools (ACPE, 2020). Per conversations with NSRN members, some pharmacy schools do plan to involve students in their COVID-19 immunization efforts.

The examples provide innovative precedent and can guide training requirements. However, a patchwork approach, especially on a school-by-school basis, may not have the same reach as a coordinated, centralized approach at the national level. Further, organizing health professions students nationally allows mobilization and deployment even when students return from school to their home communities in a different state, and these may be the communities that need them most. While we expand our grassroots efforts, we also offer NSRN as a model for the creation of a federal program for health professions student service, which may open additional possibilities, such as course credit for students and funding for volunteer engagement initiatives.

#### **§4 National Student Response Network (NSRN) as a Model for Mobilizing Students**

Despite the enormous potential of health professions students to augment the healthcare workforce, they have been largely sidelined by organized efforts to recruit health workers to date and continue to be overlooked in mass vaccination plans. In spring 2020, most health professions schools paused clinical rotations and effectively sent most students back to their home communities. This geographic dispersion made it difficult for institutions to coordinate volunteer efforts and placed the burden on students to find ways to get involved locally.

To meet the need for nationwide coordination, NSRN was founded in April 2020 to facilitate the mobilization of willing student volunteers by their respective local hospitals and state public health departments. Within a few days, NSRN swelled to thousands of interested students from all 50 states. Today, NSRN is a still-growing 501(c)(3) network of over 6,000 health professions students across the country, including students in medicine, nursing, physician assistant, and pharmacy programs. We have connected over 600 students with clinics, county health departments, and community partners in need of help, in roles including contact tracing, PPE distribution, COVID-19 testing, telehealth, logistics, patient education, and healthcare worker support. Volunteers have been eager to serve both in-person and remotely. We have also developed and refined an effective leadership structure that includes coordinators at the regional, state, and occasionally district levels, allowing a responsive approach to local needs, tailored by those students on the ground who know their communities best.

Beyond our existing network, NSRN hopes to serve as a model for how health professions students can be mass mobilized, whether through a federal program, continued grassroots organizing, or both. NSRN is ready to scale and has been able to fill critical volunteer opportunities on short turnaround entirely through increased volunteer recruitment efforts. We partner with an innovative volunteer platform, available online and as a mobile application, through which we can

accommodate rapid growth. We stay in regular contact with our volunteer base through weekly national emails, national and regional social media, and regular outreach from state and regional coordinators. NSRN constantly strives to improve as an organization and embraces the challenge of mass mobilizing health professions students in collaboration with key partners. We value the synergy of bottom-up and top-down approaches, and we plan to both expand NSRN's grassroots efforts and continue advocating for a federal program for health professions student service.

### **§6 Conclusion and Call to Action for Government, Industry, and Academia**

Our success as a nation on mass COVID-19 vaccination efforts will determine the trajectory of this pandemic. Given workforce shortages, overburdened workers, financial constraints, and mistrust of expert opinion in some communities, we cannot afford to continue overlooking the 600,000 health professions students in this country. NSRN urges the government, relevant industries, and academia to recognize the potential of health professions students and mobilize us accordingly. For policymakers, one starting point at the federal level would be to include health professions students in CDC guidance on vaccine administration and to encourage liability waivers and protections for health professions students, as proposed by our collaborators at Students Assist America (Cain, 2020). Another possibility is the creation of a federal program for health professions student service, drawing inspiration from the Medical Reserve Corps (MRC) and AmeriCorps. In terms of state policy, we note that a number of governors have issued executive orders exempting physicians and licensed health care providers from civil liability related to COVID-19 response efforts and propose that these same protections be extended to trainees. For partners in industry and academia, we encourage universities and companies administering vaccines (e.g., pharmacies) to consider engaging health professions students. Thousands of NSRN members stand ready to serve, and coordinated action can remove barriers to effective mobilization of the 600,000 health professions students in this country to support mass COVID-19 vaccination efforts. We must include health professions students to realize the vision of vaccinations for all.

**Acknowledgements:** We thank our many collaborators, including key partners for national vaccination logistics in industry, academia, and government. We acknowledge POINT and Students Assist America. We recognize our partners: Tulip Logistics, Harvard Medical School COVID-19 Student Response, Miami Med COVID Help, Get Us PPE, Medical Supply Drive Coalition, COVID-19 National Scientist Volunteer Database, Medical Support Personnel Boston, Resource-19, OLi Health Magazine, Students Against COVID (representing students across disciplines), Students Vs. Pandemics (representing students across disciplines), and TedxYouth@Berwin. We welcome all allies and collaborators, and we look forward to developing further partnerships for COVID-19 mass vaccination efforts. Our website is [nsrnhealth.org](https://nsrnhealth.org).

## References

- Accreditation Council for Pharmacy Education. Accreditation Standards and Key Elements for the Professional Program in Pharmacy. [acpe-accredit.org. https://www.acpe-accredit.org/pdf/Standards2016FINAL.pdf](https://www.acpe-accredit.org/pdf/Standards2016FINAL.pdf). Published February 2, 2015.
- American Association of Colleges of Nursing. 34<sup>th</sup> Annual Survey of Institutions with Baccalaureate and Higher Degree Nursing Programs (2014).
- American College of Surgeons. COVID-19: elective case triage guidelines for surgical care. 2020. Available at: <https://www.facs.org/covid-19/clinical-guidance/elective-case>.
- Bearden, D.T., Holt T. Statewide impact of pharmacist-delivered adult influenza vaccinations. *Am J Prev Med*. 2005;29(5):450-452.
- Cain, R.A., Bondy, M.J., et al. Students Assist America (2020). [tinyurl.com/y4c2jkjc](https://tinyurl.com/y4c2jkjc)
- Centers for Disease Control and Prevention. First-year enrollment and graduates of health professions schools, and number of schools, by selected profession: United States, selected academic years 1980–1981 through 2015–2016. Published 2017. <https://www.cdc.gov/nchs/data/abus/2017/088.pdf>
- Centers for Medicare and Medicaid Services. Non-emergent, elective medical services, and treatment recommendations. 2020. <https://www.cms.gov/files/document/cms-non-emergent-elective-medical-recommendations.pdf>.
- Consumer News and Business Channel (CNBC). New York Gov. Cuomo says ‘states are broke’ and need federal funding to distribute Covid vaccine. Published November 25, 2020. <https://www.cnbc.com/2020/11/25/covid-vaccine-new-york-gov-cuomo-says-states-are-broke-and-need-federal-funding-to-distribute.html>
- Hill D.G., From the Frontlines: Understanding Herd Immunity, July 27, 2020, American Lung Association <https://www.lung.org/blog/understanding-herd-immunity>
- Hunter, P., Zacharias, K., Wagner, M., et al. Student volunteers at mass H1N1 vaccination clinics: Addressing public health emergencies by integrating service learning within an incident command structure. APHA Annual Meeting and Exposition (2010).
- Frakt, A. Bad Medicine: The Harm That Comes from Racism. *New York Times*. Published January 13, 2020. Updated July 8, 2020. <https://www.nytimes.com/2020/01/13/upshot/bad-medicine-the-harm-that-comes-from-racism.html>
- Kringos, D., Carinci, F., Barbazza, E. *et al.* Managing COVID-19 within and across health systems: why we need performance intelligence to coordinate a global response. *Health Res Policy Sys* **18**, 80 (2020). <https://doi.org/10.1186/s12961-020-00593-x>
- New York City Health and Hospitals. NYC Test & Trace Corps Expands Partnership With Parcare Community Health Network to Provide Free COVID-19 Testing and Resources for the Orthodox Jewish Community. Published October 30, 2020. <https://www.nychealthandhospitals.org/pressrelease/nyc-test-trace-corps-partners-with-parcare-to-provide-free-covid-19-testing-to-the-orthodox-jewish-community/>
- Orenstein W. Vaccines don't save lives. Vaccinations save lives. *Hum Vaccin Immunother*. 2019;15(12):2786-2789. doi:10.1080/21645515.2019.1682360
- Pawlik, T.M., Tyler D.S., Sumer B., et al. COVID-19 Pandemic and Surgical Oncology: Preserving the Academic Mission. *Ann Surg Oncol*. 2020;27(8):2591-2599. doi:10.1245/s10434-020-08563-x
- Reinhart, R.J., More Americans Now Willing to Get COVID-19 Vaccine, Gallup, Nov. 17th, 2020. <https://news.gallup.com/poll/325208/americans-willing-covid-vaccine.aspx>
- Rizal R.E., Mediratta R.P., Xie J., et al. Galvanizing medical students in the administration of influenza vaccines: the Stanford Flu Crew. *Adv Med Educ Pract*. 2015;6:471-477. Published 2015 Jul 1. doi:10.2147/AMEP.S70294
- San Bernardino County Workforce Development Board. Governor Newsom Announces California Health Corps, a Major Initiative to Expand Health Care Workforce to Fight COVID-19 <https://wp.sbcounty.gov/workforce/business-services/california-health-corps/>
- Stanford Medical Student Association. Flu Crew. 2020. <https://tinyurl.com/vsmh83y>
- Thomas, T.M., Pollard, A.J. Vaccine communication in a digital society. *Nat. Mater*. **19**, 476 (2020). <https://doi.org/10.1038/s41563-020-0626-7>
- University of Minnesota Center for Infection Disease Research and Policy. Nursing and pharmacy students are trained to provide immunizations to high-risk adults at free clinics. No Date. <https://www.cidrap.umn.edu/practice/nursing-and-pharmacy-students-are-trained-provide-immunizations-high-risk-adults-free-0>

Yong E., No One Is Listening to Us. Atlantic Magazine, Nov. 13, 2020.

<https://www.theatlantic.com/health/archive/2020/11/third-surge-breaking-healthcare-workers/617091/>