2 3 Author names: John C. Garman 4 Degrees: B.S. 5 Affiliations: Penn State College Of Medicine 6 7 About the author: John Garman is currently a 4th year medical student of Penn State College of Medicine, in 8 Hershey, Pennsylvania. He is a contributing member of the Hershey Medical Center Medical Ethics Committee. 9 10 Acknowledgment: NA 11 Financing: NA 12 Conflict of interest statement by authors: The author has no conflicts of interest to disclose 13 Compliance with ethical standards: NA 14 15 Authors Contribution Statement: Conceptualization: JG. Writing - Original Draft: JG. Writing - Review & 16 Editing: JG. 17 18 Manuscript word count: 964 19 Number of Figures and Tables: 0 20 21 Personal, Professional, and Institutional Social Network accounts. NA 22 23 **Discussion Points:** 24 1. How has COVID-19 impacted senior medical students in the United States? 25 2. How are medical institutions utilizing senior medical students during COVID-19? 26 3. What role do senior medical students play in providing care during times of need? 27 28 Publisher's Disclosure: This is a PDF file of an unedited manuscript that has been accepted for publication. 29 As a service to our readers and authors we are providing this early version of the manuscript. The manuscript 30 will undergo copyediting, typesetting, and review of the resulting proof before it is published in its final citable 31 form. Please note that during the production process errors may be discovered which could affect the content, 32 and all legal disclaimers that apply to the journal pertain. 33

Title: COVID-19: Turning pandemic into learning opportunity for senior medical students

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## THE EXPERIENCE.

The COVID-19 pandemic has been unexpected and tragic; nevertheless, it has also given some medical students the opportunity to step-up, use what they have learned throughout their training, and assume an important role in providing care for patients and assistance to their healthcare institution. <sup>1-3</sup> In the United States, during the first three years of medical school students are trained to assist in patient care, work in various clinics and learn from providers. By the time medical students are in their 4th year, they have developed a fair base of knowledge and clinical skills. Normally, the 4th year of medical school is the year when students narrow down their clinical experiences to reflect their interests, and prepare for the application cycle for residency programs. The COVID-19 pandemic has made this time difficult, forcing many senior students from the frontlines to the sidelines. Policy changes have forbidden students from attending some rotations in person and scrubbing in during operational procedures. The impact COVID-19 has had on medical curricula varies between institutions, with many being hindered significantly by the event. Some institutions, however, are using novel approaches to patient care, allowing senior students to help. In this way, these academic medical institutions are making the pandemic a time of valuable experience and learning for their students.

During this pandemic, our academic institution worked with senior medical students to implement a novel curriculum to allow them to serve our community. At my academic institution, COVID-19 has provided senior medical students the opportunity to be an asset for their affiliated healthcare system, and to earn school credit while doing so. Senior students are using telecommunication to connect with patients and assist them with their medical questions and needs. They are acting as Transitional Care Providers (TCP) and Patient Navigation Assistants (PNA), allowing them to use their knowledge and skills to help both the patients and the stressed healthcare system. As TCPs, students are making weekly contact with patients recently discharged from the hospital with COVID-unrelated ailments, to assure they have not become infected or in the case they have questions or concerns about their recent hospital admission or current recovery. Such transitional care interventions have been shown to reduce hospital readmissions and mortality. PNAs are serving a similar role, helping patients navigate the convoluted health care system during this complicated time, a role that has been shown effective in improving patient satisfaction and outcomes. In these roles, students are further learning to work with medical teams and local community resources to meet the needs of patients - many times acting as the patient's primary point-of-contact within the medical center. These roles are providing students a level of responsibility that fosters professional development in a unique time.

At our institution, other students are acting as "COVID-19 case-trackers," investigating and attempting to mitigate the spread of infections. Case tracking of infection transmission chains is a standard aspect of public health response to infectious outbreaks. Case tracking assists in breaking these transmission chains, hopefully disrupting viral spread and reducing the scale of outbreaks. In taking this role, medical students are becoming better versed in the pathophysiological aspects of COVID-19 and remaining up-to-date on current guidelines, all while gaining a unique experience in pandemic response. No matter their designated role, senior students are working together with other healthcare staff to address issues during this unforeseen crisis, and they are seen as members of the team when discussing novel approaches to novel problems. As we students continue to provide our services to our institution, our institution recognizes and appreciates the motivated and trained

asset they can call on for assistance. Likewise, we as students appreciate their respect and consideration in facing this pandemic.

Personally, I volunteered and worked as a TCP. As a TCP, I was in weekly contact with patients and their primary care providers, assisting them in their transition home from the hospital, and with any additional needs I could appropriately address. Without exception, I was asked by each patient about COVID-19 and their risk of infection. Due to their questions, I was motivated to better understand the pathophysiology of the virus and the clinical symptoms of those infected. Moreover, I remained current on the recommendations put out by the Center for Disease Control and Prevention. In so doing, I was able to help patients with their immediate health needs and address their concerns related to COVID-19. While these experiences were not what we expected going into our 4th year of medical school, I believe that they have given us something unique. They showed us the adaptability of medicine in a time of uncertainty, and they provided us an opportunity to work within our medical institution in a time of need. Despite missing normal 4th year rotations during this time, I feel no less prepared for my residency training on the horizon. In no way do I see this experience as a hinderance to my education and training; quite the opposite, I feel that it was uniquely valuable, allowing us to be actively involved in addressing the COVID-19 pandemic instead of watching from the sidelines.

This pandemic has been an unprecedented time, and along with its devastating impact on the health of many Americans, it has also caused major alterations in the training of future physicians. While many medical schools put a full halt in clinical experiences due to COVID-19, some schools like my institution did not, by creating and fostering student initiatives. This pandemic has led our medical center to recognize senior students as trained and motivated resources, utilizable during times of need. For some senior medical students, the COVID-19 pandemic, with all of its hardships, has become an invaluable learning opportunity and chance to serve our community – it is an experience we will carry with us throughout our future careers.

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