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Mobilization of health professions students during the COVID-19 pandemic☆

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ABSTRACT

The COVID-19 pandemic has posed challenges for medical education and patient care, which were felt acutely in obstetrics due to the essential nature of pregnancy care. The mobilization of health professions students to participate in obstetric service-learning projects has allowed for continued learning and professional identify formation while also providing a motivated, available, and skilled volunteer cohort to staff important projects for obstetric patients.

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Introduction

The COVID-19 pandemic created confusion and uncertainty among patients in the health system. This is especially true for pregnant patients, who in a traditional obstetric care model, are seen frequently for in-person visits. Rapid changes implemented during the pandemic altered the way obstetric patients receive care. To decrease virus exposure for both patients and staff, OB clinics reduced visit frequency. Many obstetric clinics closed or consolidated, and thus visit locations changed. Clinics also transitioned many visits to virtual care or telehealth visits rather than in-person visits. Lastly, some patients have been reluctant to visit clinical care sites in New York City for fear of exposure to COVID-19. All of these factors put patients at risk for being lost to follow-up. Mitigating patient attrition required new communication strategies to maintain patient engagement.

In addition to the challenges posed for patient care, the COVID-19 pandemic created substantial barriers for medical education. A service-learning framework can harness students in roles that support critical patient-focused initiatives while also allowing for continuing education through students participation.[1] Below, we describe our experiences mobilizing student volunteers from our health professions schools to support obstetric providers and patients in projects at Columbia University Medical Center during the COVID-19 pandemic.

Part I: background

A. cessation of on-site clinical education

New York City found itself at the epicenter of the COVID-19 pandemic in the middle of the academic year in early March, interrupting education from primary school to graduate and

☆ This work received no external support.
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professional schools. Columbia University canceled all in-person instruction as of March 9, 2020, two days after New York State declared a state of emergency. The change to online instruction permitted some continuity for pre-clinical medical, nursing and public health students who were in the classroom, but disrupted the nursing and medical student inpatient clinical rotations that were in full swing. Several factors led to the removal of clinical students from participating directly in patient care. To reduce the risk of students becoming infected, the health sciences schools initially removed students from participating in the care of patients known to be COVID-19 positive; however, within days this proved to be impossible as COVID-19 became more widespread, and many asymptomatic patients were found to have COVID-19.

An additional concern regarding student presence on the wards was the limited availability of personal protective equipment (PPE). To conserve PPE, New York Presbyterian and other hospitals mandated, even before the NYS-wide state of emergency, that only those individuals essential for the procedure being performed could use surgical gowns and masks. On the OB/GYN major clinical year rotation, this policy prevented students from participating in normal deliveries and scrubbing for cesarean sections or gynecologic surgeries. Further, social distancing guidelines in medical settings, intended to avert community spread, precluded on-site clinical learning via in-person team rounds and in-person small group sessions. Finally, opportunities for clinical teaching dwindled as elective surgical procedures were canceled, office visits were deferred or converted to telehealth visits, inpatient units were reconfigured to increase capacity to care for critically ill COVID-19-positive patients, and faculty were redeployed from all other areas of the department in order to provide inpatient care for pregnant women.

When the National State of Emergency was declared on March 13, 2020, most New York health sciences education centers moved to suspend teaching in all clinical settings. Nationally, on March 17, 2020, the AAMC Chief Academic Officer issued guidance urging medical schools to pause clinical rotations.[2] By this time, CUIMC had already transitioned to online learning for non-clinical students. Clinical students, all of whom were in the midst of rotations, were instructed to hand off their patients to their supervising physicians and leave the hospital. With their studies on hold, students sought ways to support the CUIMC campus and surrounding community where they learned and lived.

Part II: organization of student volunteers

As cases of COVID-19 were identified in New York City, health systems quickly anticipated a surge that would require massive transformation in care delivery and staffing. Supplies of PPE were expected to dwindle. In the setting of these large-scale and rapid changes, the temporary withdrawal of health profession learners from the clinical environment was prudent. The new question emerged of how students, now sidelined from clinical sites, could best support health systems in the pandemic.

At Columbia, faculty and student leaders came together to address this question and founded the COVID-19 Student Service Corps (CSSC). The mission of the CSSC is to support health systems facing the COVID-19 pandemic, including patients, workforce, and communities, through interprofessional student service-learning projects. The Columbia CSSC has over 1600 student volunteers working on nearly twenty projects. The country now has eight CSSC chapters.

CSSC chapters employ five guiding principles integral to the leadership structure, project identification, and involvement of students:

1. Health systems identify their own pressing needs and share them with an Oversight Committee to develop the teams necessary to address them.
2. Student volunteers work in a service-learning model in order to learn, reflect, and grow in their professional and personal identities while serving their communities.[3]
3. Student volunteers engage in interprofessional collaboration whenever possible to promote learning with, from, and about each other.
4. Chapter leaders facilitate the partnership between students and faculty to meet the needs of the healthcare system by using the diverse skillsets of volunteers along with appropriate training, oversight, and supervision.
5. Opportunities for students prioritize options that facilitate social distancing or, in cases where prevalence is high, remote options.

The Columbia chapter of CSSC has four categories of service-learning projects, each aimed at assisting a different segment of our health system community: Patient-facing; Faculty, Staff and Student-facing; Community-facing; and System-facing. A few examples of Columbia CSSC service-learning projects follow.

Our Patient-facing service projects include working with outpatient clinics to bring patients onto institutional telehealth platforms in order to reduce the number of in-person visits while ensuring that patients are still connected to their healthcare providers.

Faculty, Staff and Student-facing projects include an Information Services team that rapidly develops understandable and evidence-based materials for different audiences; one group handles specific requests from clinical departments that need large amounts of information digested and summarized; a Mental Health and Wellbeing group supports students, faculty and staff wellbeing through these challenging times.

Community-facing projects have the underlying goal of meeting needs identified directly from the community including virtual tutoring for elementary and middle students in the community who have had to move their learning online, as well as supporting organizations aimed at reducing food insecurity and providing other critical resources to families.

Finally, system-facing projects include supporting COVID-19 related research trials and quality improvement projects as well as developing a personal protective equipment task force to organize procurement, donation and manufacturing of PPE.

The service-learning model incorporates structured reflection, assuring that students receive opportunities to solidify professional identity and further understand their roles as citizens, health professionals, and leaders while improving their preparation to engage in future service.

Part III: obstetric student projects

Obstetric faculty members working on the front lines identified projects that could incorporate students, and these ideas were then further developed in coordination with the CSSC. A student leadership team including both medical and public health students, closely overseen by the OB faculty lead, runs each project. The CSSC matches volunteer skillsets with project needs to place medical, public health and nursing students into project teams. The OB/GYN medical student education coordinator provides essential logistical support for all projects. All planning and training sessions take place remotely via online platforms. Any volunteer not fluent in the patient's native language uses interpreter services for patient outreach.

Project A: ob public health outreach team

Our initial obstetric student project was the OB Public Health Outreach Team. This project provides public health and health care access information to our most vulnerable obstetric patients via making phone calls directly to antepartum clinic patients. The team comprises medical, nursing and public health students assigned through the CSSC; all volunteers watch a video training prior to beginning calls. Initially, all students had clinical experience and clear training, and escalation protocols allowed inclusion of students without previous clinical experience as the project expanded.

The Ambulatory Care Network (ACN) of New York Presbyterian provides pregnancy care for patients from the local community. The ACN primarily serves patients from Washington Heights and the Bronx; this population is predominantly Latinx, of low socioeconomic status, and largely limited English proficiency, all of which are risk factors for poor obstetric outcomes.[4, 5] Many patients obtain health insurance under the New York State emergency Medicaid program due to their current pregnancy.[6]

CSSC students call all currently pregnant obstetric patients receiving care in the ACN. The calls are guided by a script based on CDC and institutional guidelines, and review the following topics: (1) infection prevention/ self-isolation strategies, (2) reasons to seek either obstetric or emergency care, and (3) changes in clinic locations and mode of visit. If patients are not yet set up for telehealth visits, they are referred to a telehealth support team described below. Calls are made Monday-Friday from 9am to 8pm. Students sign up for call shifts through a Microsoft Teams® page based on their availability, and they are expected to complete 1–2 shifts weekly. If patients report concerning symptoms or difficulty obtaining an appointment, the call is escalated to an on-call obstetrician to address. Information regarding which patients were called, if they answered, any escalations or referrals made, and if patients want to receive a follow-up call is tracked in Microsoft Teams®, a secure, HIPAA-compliant platform. Volunteers complete a survey immediately after each shift to provide feedback and raise any non-urgent patient concerns. In addition to required CSSC-wide reflections, CSSC OB/GYN students also participate in optional weekly debriefing sessions run by the student leadership team. Faculty leads review all call logs and surveys to ensure that all patient concerns are addressed and also discuss any need to adjust training for students making calls with the student project leads.

An unanticipated benefit from the call program has been the identification of antepartum patients with new food or housing insecurity. These patients are referred to a clinical social worker who coordinates connections to city service programs. Another unexpected advantage is reconnecting with patients who had been deemed "lost to follow-up" during the clinic consolidation process. These patients are referred to scheduling coordinators to connect them back into care. By May 1, this project team had reached over 780 antepartum patients.

Project B: ob telehealth outreach team

A major challenge during the COVID-19 pandemic has been providing obstetric patients access to outpatient care while simultaneously minimizing exposure for both providers and patients. In response, appointments are evaluated to determine which visits are suitable for telehealth substitution as a means to decrease in-person volume in outpatient clinic sites. Shifting from traditional in-person visits to virtual visits necessitates effective communication channels between clinics and patients, and requires that patients have Internet access, computer or smart phone availability. Furthermore, patients must have an understanding of how to create multistep health accounts linked to electronic medical record (EMR) systems. The ACN prenatal patients are particularly vulnerable to being "lost to follow-up" during the transition to virtual visits.

The OB Telehealth Support Team helps obstetric patients prepare for virtual visits. The group, comprised of medical, nursing and public health students, make calls to antepartum and post-partum ACN patients scheduled for telehealth visits; the students assess whether patients are prepared for the visit and have all the required technology components in place. All students participate in training sessions on how to assist patients in registering for MyChart® and Connect, the Epic® patient portal. Students are then able to walk patients through entering a video visit, as well as connect patients to IT support services.

Relevant patient lists are created by running daily EMR reports; the lists are relayed to the student leads, who then divide the list to assign each volunteer with 5–6 patients to call. Volunteers make these calls seven days a week. Patient calls are attempted three times to balance the goal of outreach and inadvertent disturbance. Outstanding technical problems that the patients face are recorded and communicated back to the clinic scheduling team. Although this project is not clinical in nature, patients occasionally report clinical concerns that are then relayed to the OB faculty lead to manage.

This project has reached over 847 patients, and provided assistance in Telehealth set up to 537 patients. Without this dedicated team, we assume many patients would have missed visits or been lost to follow up.

Project C: ob postpartum outreach team

The pandemic has dramatically altered healthcare accessibility for antepartum, postpartum and newborn patients. At this time, postpartum patients and newborns who meet clinical criteria qualify for discharge 12–24 hrs earlier than typical for our hospital system. Early discharges were implemented to accommodate the higher volume of patients due to closure of affiliated labor and delivery units, and to decrease duration of COVID exposure during hospitalization. Many obstetric and newborn clinics in the New York City area have temporarily closed or consolidated their sites, leaving many patients with less access to outpatient care. Given widespread fear surrounding potential exposure in emergency rooms, we anticipated that patients might have difficulty finding care for postpartum or newborn problems.

The third project, the Postpartum Outreach Project, seeks to address the potential gap in care specifically for postpartum and newborn patients. The project is an interdisciplinary effort between obstetrics, pediatrics and social work. Because of their clinical experience, the volunteer core for this project comprises senior medical and nurse practitioner students who make calls to all postpartum patients on the second day after discharge from the hospital. The calls are guided by a script covering obstetric, pediatric and mental health topics. The obstetric issues reviewed include pain control, vaginal bleeding, surgical site/postpartum infections, hypertensive diseases of pregnancy, and post-partum depression. The neonatal issues reviewed include mode of feeding, difficulties with feeding, wet/ soiled diapers, safe sleep practices, jaundice, and signs of infection. Given the elevated risk for intimate partner violence (IPV) in times of social isolation, all patients are screened for domestic violence, support networks, and safety within the home. Volunteers confirm patients have all necessary medications and supplies, including breast pumps and blood pressure cuffs which are provided for telehealth postpartum follow-up visits. Lastly, patients are asked whether they have both pediatric and obstetric follow-up scheduled, and have appropriate contact numbers.

Calls are made seven days a week from 9 am to 8 pm on weekdays and from 10 am to 5 pm on weekends. Patients who do not answer are called an additional time during the shift, and then added to the following day's call list for another day of attempted contact, after which time they are removed from the contact list.

An obstetrician, pediatrician and social worker are available to address any clinical concerns based on an escalation protocol. All calls are documented in the electronic medical record, using a standardized note template, and each note is sent to an obstetrician for review. If a concern is escalated, the attending reaches out to the patient directly to address the problem and addends the note with the care plan.

Volunteers log call data, including whether patients were reached, any escalations made, and the ultimate outcome, in Microsoft Teams®. An obstetrician and pediatrician review all call data daily to confirm no clinical issues are missed. Volunteers complete a post-shift survey to collect information on time spent making calls, logistical issues, and perceived educational value of the experience. They are invited to participate in weekly debriefing sessions led by student leaders. This project has provided outreach to 348 patients as of May 1st, with 107 escalations to a physician.

Part IV: challenges

Mobilizing health professions students for clinical support projects during the COVID-19 pandemic has not been without challenges. Given the rapidly evolving situation, hospital leadership has needed to change clinical sites and update protocols and practice guidelines repeatedly. This requires that projects be extremely flexible to adapt to changes in structure and needs. Additionally, our projects are multidisciplinary and require buy-in from multiple departments. Further complicating project creation is the need to vet volunteer projects for value from both an educational and clinical standpoint. In our experience, centralization of volunteer activities through a single organization, the CSSC, streamlined project creation. Because faculty leads have close communication with student project leads, the student project leads can quickly convey vital information to students. The ability of faculty leads to work closely with the CSSC leadership to approve projects and dispatch needed student volunteers expedited the projects and allowed critical patient services to be delivered quickly and with appropriate supervision.

An initial challenge was deciding how to incentivize student participation in these volunteer projects; however, this was overcome quickly through the option for students to participate in projects as elective opportunities with academic credit. Projects requiring EMR access, such as the Postpartum Support Team, had an extra layer of complexity, as student volunteers needed training to use and document within the EMR. Finally, ensuring appropriate student oversight was critical. Faculty became available to assist because elective surgeries and many outpatient clinic sites were closed.

Part V: closing

As the acute phase of this crisis ends, we are starting to plan for the aftermath. Questions to be answered include: how do we reintroduce students to clinical rotations? Given that clinical students will have missed 2–3 months of direct patient care time, how should we structure the rest of the year to optimize learning? How do we prepare learners for a health care system where virtual care will play a significant role? Participation in the service-learning projects described above provided support to patients and valuable educational exposure to prepare students for the new normal.

Making lemonade out of lemons has been a theme for clinical and health education programs shifting nimbly in the midst of COVID-19. The innovations that were deployed quickly and effectively at Columbia took this theme to heart

and required us to consider essential questions about educating physicians. In this time of interruption and fear, how could learners' support for their patients and colleagues allow them to progress toward the required competencies? If the outcome of an undergraduate medical education is a new physician who can be entrusted to take on supervised patient care responsibilities in a dynamic and complex health system, then the answer to this question is clear.

"The formation of a physician should be seamless across the continuum of education, training, and practice."[7] Students who partake of interprofessional service-learning participate in patient care, develop their medical knowledge, deepen their professionalism, apply their interpersonal and communication skills, engage in rapid-cycle practice-based learning and improvement, and contribute meaningfully to systems-based practice. These competencies, and their attendant professional activities, can be developed in many ways, as situations unfold and allow. COVID-19 is just such an evolving situation, full of opportunity for forming a professional identity for what being a doctor is all about.

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